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APPEAL OF CERTIFICATION OF FINAL SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

Golden State Warriors Event Center and Mixed-Use Development at Mission Bay Blocks 29-32

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APPEAL OF CERTIFICATION OF FINAL SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

Event Center and Mixed-Use Development at Mission Bay Blocks 29-32

Executive Summary

DATE:	November 30, 2015
TO:	Angela Calvillo, Clerk of the Board of Supervisors
FROM:	Tiffany Bohee, Executive Director Sally Oerth, Deputy Director Chris Kern, Case Planner, Environmental Planning, (415) 575-9037
RE:	Board of Supervisors File No. 150990 OCII Case No. ER 2014-919-97; Planning Department Case No. 2014.1441E **Appeal of Certification of Final Subsequent Environmental Impact Report on the Event Center and Mixed-Use Development at Mission Bay Blocks 29-32**
ATTACHMENTS:	Exhibit A — OCII Response to Appeal of Certification of Final Subsequent Environmental Impact Report Exhibit B — Appeal Materials Submitted by Appellant Exhibit C — OCII Resolution No. 69-2015 Certifying the Final Subsequent Environmental Impact Report for the Golden State Warriors Event Center and Mixed-Use Development on Blocks 29-32 in Mission Bay South Exhibit D — OCII Responses to Late Comments Exhibit E — Late Comments (on CD)
HEARING DATE:	December 8, 2015

PROJECT SPONSOR:	GSW Arena LLC
PROJECT CONTACT:	David Kelly, (510) 986-2200
APPELLANT:	Mission Bay Alliance

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INTRODUCTION

This memorandum is a response ("Appeal Response") to the letter of appeal ("Appeal Letter") to the Board of Supervisors (the "Board") regarding the proposed Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 (the "proposed project" or "project"), which is under the jurisdiction of the Office of Community Investment and Infrastructure ("OCII").

The Mission Bay Alliance ("Appellant") filed an appeal on November 13, 2015 on two issues:

1. the certification of a Final Subsequent Environmental Impact Report ("Final SEIR") by the Commission on Community Investment and Infrastructure ("OCII Commission") under the California Environmental Quality Act ("CEQA") for the proposed project as set forth in OCII Commission Resolution 69-2015 (Exhibit C of this Appeal Response); and
2. the OCII Commission's adoption of the CEQA Findings on the proposed project as set forth in OCII Commission Resolution 70-2015.

By OCII Commission Resolution No. 33-2015, the OCII Commission provided for a process of appeal of its certification of an Environmental Leadership Project to the Board of Supervisors in its capacity as the governing body of the successor agency to the Redevelopment Agency. Resolution No. 33-2015 provided for the Executive Director of the OCII Commission to determine whether a valid appeal has been filed and if so, to advise the Clerk of the Board of Supervisors to accept the appeal. On November 16, 2015, the Executive Director advised the Clerk that the Mission Bay Alliance had filed a valid appeal on the first issue: the certification of the Final Subsequent Environmental Impact Report for the project. Accordingly, this Appeal Response focuses on the first issue regarding the certification of the Final SEIR.

The second issue listed in the appeal, regarding the CEQA Findings, is not appealable. Under OCII Commission Resolution No. 33-2015, persons or entities that submit comments on an Environmental Leadership project may appeal OCII's certification of the EIR for the project to the Board.[1] The grounds for the appeal under Resolution No. 33-2015 are limited to certification of the EIR; thus, no appeal is available from OCII Commission's approval of Resolution No. 70-2015 adopting CEQA Findings, including adopting a mitigation monitoring and reporting program and a statement of overriding considerations. On November 20, 2015, by letter to the Mission Bay Alliance, the OCII Commission Executive Director advised that she rejected the appeal regarding the CEQA Findings for the reasons stated in that letter.[2] Therefore, this appeal response does not address the appeal of the second issue. The appeal letter states that it was filed pursuant to CEQA Section 21151(c), OCII Resolution No. 33-2015, a memorandum from the Clerk of the Board of Supervisors specifying the procedures for filing an appeal under Resolution No. 33-2015, and the ordinance establishing the OCII Commission (Board Ordinance 215-12 (File 1200898). To clarify, it is OCII's position that this appeal is authorized only as a result of OCII Resolution No. 33-2015 and is not required by or intended to function as an appeal under CEQA Section

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1 Bohee, Tiffany, Executive Director, OCII. Letter to Thomas Lippe, November 20, 2015.

2 *Ibid*.

21151(c). Further, nothing in Board Ordinance 215-12 provides for such an appeal process or right of appeal.[3]

The decision before the Board is whether to uphold the OCII Commission's decision to certify the Final SEIR and deny the appeal, or to overturn the OCII Commission's decision to certify the Final SEIR and return the project to the OCII staff for further environmental review. While no appeal is available from OCII's approval of Resolution Nos. 70-2015, if the Board — in response to the appeal from OCII Commission Resolution 69-2015 — reverses OCII's certification of the Final SEIR, then "prior project approvals would be rescinded to allow [the O]CII [Commission] to, if and as necessary, adopt additional findings, revise the F[S]EIR, or amend the project approvals."[4]

PROJECT DESCRIPTION

GSW Arena LLC (GSW), an affiliate of Golden State Warriors, LLC, which owns and operates the Golden State Warriors National Basketball Association (NBA) team, proposes to construct a multi-purpose event center and a variety of mixed uses, including office, retail, open space and structured parking on an approximately 11-acre site on Blocks 29-32 within the Mission Bay South Redevelopment Plan Area of San Francisco. The project site is bounded by South Street on the north, Third Street on the west, 16th Street on the south, and by the future planned realigned Terry A. Francois Boulevard on the east. The proposed event center would host the Golden State Warriors basketball team during the NBA season, as well as provide a year-round venue for a variety of other uses, including concerts, family shows, other sporting events, cultural events, conferences and conventions.

The project site is located within the Mission Bay South Redevelopment Plan Area, subject to the development controls of the Mission Bay South Redevelopment Plan, and Mission Bay South Design for Development, and other related documents. Currently, the site contains paved surface parking lots on the west and north portions of the site, and the remainder of the site consists of undeveloped ruderal areas largely covered in gravel and surrounded by chain link fencing. The site is owned by the Golden State Warriors, LLC.

ENVIRONMENTAL REVIEW PROCESS FOR THE PROJECT

On November 19, 2014, OCII issued a Notice of Preparation/Initial Study, which analyzed the potential environmental impacts of the proposed project, and OCII conducted a public scoping meeting on December 9, 2014. Based on the analysis in the Initial Study, as well as detailed analyses and reports prepared in support of the analysis, a Draft SEIR was issued on June 5, 2015. Written public comments were received during the public comment period between June 5, 2015 and July 27, 2015, and a public hearing before the OCII Commission was held on the Draft SEIR on June 30, 2015, at which time public testimony was received. OCII staff then prepared the Responses to Comments ("RTC") document, published on October 23, 2015, to address environmental issues raised by comments received during the public comment period and at the public hearing for the Draft SEIR. The RTC document

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[3] *Ibid.*

[4] *Ibid.*

contained additional analysis and reports that verified and expanded upon the Draft SEIR contents. OCII staff prepared revisions to the text of the SEIR in response to comments received or based on additional information that became available during the public review period, and corrected errors in the Draft SEIR.

The Final SEIR consists of the Draft SEIR together with the RTC document. On November 3, 2015, the OCII Commission certified the Final SEIR. This was based on the determination that the contents of the Final SEIR and the procedures through which it was prepared, publicized, and reviewed, complied with CEQA and the CEQA Guidelines. The OCII Commission found the Final SEIR to be adequate, accurate and objective, that it reflects the independent analysis and judgment of the OCII staff and Commission, and that the RTC document contains no significant revisions to the Draft SEIR.

SUMMARY OF APPEAL ISSUES

The Mission Bay Alliance filed an appeal of the Final SEIR certification on November 13, 2015. Every issue raised by the Appellant is described and responded to in Exhibit A of this Appeal Response, and the appeal materials submitted by the Appellant are presented in Exhibit B. The specific issues raised in the appeal are summarized below, using the same organization and numbering system shown in the appeal, even though many of the issues are redundant.

Issues Raised in the Appeal

- A.1 Public Comment: Noticing and timing of public comment on the RTC document
- B.1 Project Description: Changes in the project description presented in the SEIR
- C.1 Tiering: Reliance of SEIR on 1990 and 1998 Mission Bay EIRs
- D.1 AB900 and Administrative Record: Compliance with requirements for the administrative record under AB 900
- E.1 Alternatives: Analysis of the No Project Alternative
- E.2 Alternatives: Feasibility of the Off-site Alternative
- E.3 Alternatives: Feasibility of an additional site proposed by the appellant
- F.1 Air Quality Impacts
- F.2 Air Quality: Significance thresholds for criteria air pollutants
- F.3 Air Quality: Analysis of construction and operational-related emissions for criteria air pollutants and toxic air contaminants
- F.4 Air Quality: Mitigation measure for construction impacts
- F.5 Air Quality: Mitigation measure requiring purchase of emission offsets
- F.6 Air Quality: Health risk assessment
- F.7 Air Quality: Analysis for construction-related dust pollution
- F.8 Air Quality: Mitigation measures to consider diesel alternatives
- F.9 Air Quality: Operational mitigation measure for electrical outlets
- F.10 Air Quality: Impacts of construction of wastewater improvements
- F.11 Air Quality: Impacts of project refinements

Issues Raised in the Appeal

F.12 Air Quality: Mitigation measure requiring purchase of emission offsets, new information
G.1 Transportation Impacts
G.2 Transportation: Traffic impacts on the entire affected environment
G.3 Transportation: Impacts on intersections and freeway ramps
G.4 Transportation: Impacts on intersections where parking control officers (PCOs) are proposed
G.5 Transportation: Construction impacts, including cumulative impacts
G.6 Transportation: Operational traffic and transit impacts
G.7 Transportation: Cumulative impacts
G.8 Transportation: Transit impact analysis methodology
G.9 Transportation: Implementation of mitigation measures
G.10 Transportation: Effectiveness of mitigation measures
G.11 Transportation: Project description assumptions for transportation improvements
G.12 Transportation: Enforceability of mitigation measures
G.13 Transportation: Specificity of fair-share fee mitigation measure
G.14 Transportation: Transit analysis baseline data
G.15 Transportation: Traffic analysis baseline data
G.16 Transportation: Completeness of transportation impacts
G.17 Transportation: Interrelated issues
G.18 Transportation: Impacts of at-grade rail crossings on 16th Street
G.19 Transportation: Truck loading and staging provisions
G.20 Transportation: Emergency vehicle access impact to UCSF hospitals
G.21 Transportation: Responses to comments on impacts to BART
G.22 Transportation: Traffic impacts of project refinements
H.1 Hydrology, Water Quality, and Biological Impacts
H.2 Utilities: Wastewater infrastructure impacts
H.3 Water Quality: Impacts on San Francisco Bay from wastewater discharges
H.4 Biological Resources: Impacts on wetlands and wildlife
H.5 Biological Resources: Wetland impacts
H.6 Utilities: Cumulative impacts on the capacity of the Mariposa Pump Station
H.7 Hydrology: Flooding risk and inundation impacts
I.1 Noise Impacts
I.2 Noise: Use of San Francisco Noise Ordinance
I.3 Noise: Significance thresholds based on increase over ambient
I.4 Noise: Significance thresholds based on human health and welfare
J.1 Greenhouse Gases Emissions Impacts
J.2 Greenhouse Gases Emissions. Approach to analysis methodology

Issues Raised in the Appeal

J.3 Greenhouse Gases Emissions. Qualitative vs. quantitative analysis
J.4 Greenhouse Gases Emissions: Mitigation
J.5 Greenhouse Gases Emissions: Improvement vs. mitigation measures
J.6 Greenhouse Gases Emissions: Inventory of emissions
K.1 Geology and Soils Impacts
K.2 Geology and Soils: Use of 1998 Mission Bay FSEIR analysis
K.3 Geology and Soils: Mitigation
K.4 Geology and Soils: Impacts
K.5 Geology and Soils: Impact analysis
L.1 Hazards and Hazardous Materials: Supplemental review
L.2 Hazards and Hazardous Materials: Use of 1998 Mission Bay FSEIR analysis
L.3 Hazards and Hazardous Materials: New information
L.4 Hazards and Hazardous Materials: Naturally-occurring asbestos
L.5 Hazards and Hazardous Materials: Impact analysis
M.1 Urban Decay: Impacts in Oakland
M.2 Urban Decay: Response to comments
M.3 Urban Decay: Analysis
N.1 Wind: Impact to open space within the project site
N.2 Wind: Response to comments
N.3 Wind: New wind impact in RTC document
O.1 Recreation: Impacts on Bayfront Park
O.2 Recreation: Impacts on Bayfront Park
O.3 Recreation: Impacts on Bayfront Park
O.4 Recreation: Impacts on Bayfront Park
P.1 Utilities: Impacts on water supply infrastructure
P.2 Utilities: Impacts on water supply infrastructure
P.3 Utilities: Water supply assessment
P.4 Utilities: Stormwater treatment facilities impacts
P.5 Energy: New information in the RTC document
Q.1 Land Use:. Consistency with the Mission Bay South Redevelopment Plan
Q.2 Land Use: Consistency with the Mission Bay South Redevelopment Plan
Q.3 Land Use: Community character
R.1 Cultural Resources Impacts
S.1 CEQA Findings
S.2 Statement of Overriding Considerations

The grounds for the appeal are mainly a compilation and reiteration of comments on a wide range of issues that were previously submitted by the Appellant, either on the Draft SEIR, the RTC document, or the Final SEIR. Therefore, the responses in Exhibit A to the issues raised in the appeal include cross references to the detailed responses provided by topic in the RTC document. The responses in Exhibit A also reference more detailed responses contained in Exhibit D where appropriate. As explained in more detail below, Exhibit D contains responses to any comments submitted by Appellant or another party that are not responded to in the RTC document because they were received so late that a response could not be included in that document (referred to in this Appeal Response as "Late Comments"). CEQA does not require published responses to any comments received after the close of the public comment period, which ended on July 27, 2015. However, this Appeal Response includes written responses to all late comments submitted by the Appellant, in order to provide the Board of Supervisors with a comprehensive appeal document.

None of the comments raised in the appeal present new information that affects the analysis or conclusions of the Final SEIR on the project.

LATE COMMENTS

The RTC document published on October 23, 2015 provides written responses to all comments received during the public review period as well as responses to a number of comments received after the close of the public review period. However, OCII received numerous late comment letters that were received so late that a response could not be included in the RTC document as well as additional comment letters received after the publication of the RTC document. Some of these late comment letters raise comments on the Draft SEIR, while others raise comments on the RTC document or other project-related actions.

OCII staff presented written responses to the OCII Commission to five of those late comment letters at the OCII Commission meeting on November 3, 2015, and also presented oral responses to several of the late comments received immediately prior to or at the meeting. OCII and the City have continued to receive additional late comments since the November 3, 2015 OCII Commission meeting.

Exhibit D of this Appeal Response addresses all of these late comment letters and also contains responses to public testimony received during the public meeting on project approval actions.[5] It reproduces all of the substantive issues raised in these late comments and provides written responses to those comments, using the same format as the RTC document (i.e., comments and responses are organized by topic). Exhibit D includes a verbatim copy of the substantive late comments, with similar comments on the same topic grouped together, followed by a comprehensive response on that topic. Exhibit E of this Appeal Response contains copies of the late comment letters and oral comments from the Appellant presented at the November 3, 2015 OCII Commission (excerpted from the meeting transcript), with coding in the margin that corresponds to the coding shown in the

[5] Only public testimony regarding a critique of the SEIR is included in Exhibit D.

responses in Exhibit D. Due to the volume of late comments and because all substantive comments are reproduced verbatim in Exhibit D, Exhibit E is provided on CD.

Although Exhibit D appears voluminous, most of the information within the document is not new. This is because the issues raised in these late comments are reiterations or elaborations of the same comments previously submitted by the Appellant and are already responded to in the RTC document. Staff created Exhibit D in large part for the ease of members of the Board, so that they would not have to flip back and forth between various documents, including the RTC document. The issues addressed in Exhibit D cover a wide range of topic areas, including but not limited to: environmental review process; environmental justice; urban decay; fiscal feasibility; AB 900 process; greenhouse gases emissions; plans and policies; archaeological resources; transportation; noise; air quality; wind and shadow; recreation; utilities; biological resources; geology; hazardous materials; and alternatives. None of these are new issues. The responses provided in Exhibit D summarize and refer to the responses already presented in the RTC document, and where appropriate, elaborate on the response.

As explained in detail in Exhibit D, none of the issues raised in these late comments present new information that affects the analysis or conclusions of the Final SEIR on the project.

CONCLUSION

OCII staff conducted an in-depth and thorough analysis of the potential physical environmental effects of the proposed project, consistent with CEQA and the CEQA Guidelines. The Appellants have not demonstrated that the Final SEIR is insufficient as an informational document, or that the OCII Commission's findings and conclusions, as set forth in the Final SEIR and certification resolution, are unsupported by substantial evidence. OCII staff conducted all necessary studies and analyses, and provided the OCII Commission with all necessary information and documents in accordance with the Planning Department's environmental checklist and Consultant Guidelines, and pursuant to CEQA and the State CEQA Guidelines. Substantial evidence supports the OCII Commission's findings and conclusions as set forth in the Final SEIR.

For the reasons provided in this Appeals Response, OCII believes that the Final SEIR complies with the requirements of CEQA and the CEQA Guidelines, provides an adequate, accurate, and objective analysis of the potential environmental impacts of the proposed project, is sufficient as an informational document, is correct in its conclusions, and reflects the independent judgment and analysis of the OCII, and that the OCII Commission's certification findings are correct. Therefore, OCII respectfully recommends that the Board uphold the OCII Commission's certification of the Final SEIR.

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Exhibit A

Responses to Appeal of Certification of Final Subsequent Environmental Impact Report

OCII CASE NO. ER 2014-919-97; PLANNING DEPARTMENT CASE NO. 2014.1441E – EVENT CENTER AND MIXED-USE DEVELOPMENT AT MISSION BAY BLOCKS 29-32
CERTIFIED ON NOVEMBER 3, 2015

INTRODUCTION

GSW Arena LLC (GSW), an affiliate of Golden State Warriors, LLC, which owns and operates the Golden State Warriors National Basketball Association (NBA) team, proposes to construct a multi-purpose event center and a variety of mixed uses, including office, retail, open space and structured parking on an approximately 11-acre site (Blocks 29-32) within the Mission Bay South Redevelopment Plan Area of San Francisco. The project site is bounded by South Street on the north, Third Street on the west, 16th Street on the south, and by the future planned realigned Terry A. Francois Boulevard on the east. The proposed event center would host the Golden State Warriors basketball team during the NBA season, as well as provide a year-round venue for a variety of other uses, including concerts, family shows, other sporting events, cultural events, conferences and conventions.

The San Francisco Office of Community Investment and Infrastructure (OCII), as lead agency responsible for administering the environmental review for private projects in the Mission Bay North and South Redevelopment Plan Area of San Francisco, published a Notice of Preparation and an Initial Study on the proposed event center and mixed-use development project (proposed project or project) on November 19, 2014, followed by a 30-day scoping period. On June 5, 2015, OCII published the Draft Subsequent Environmental Impact Report (Draft SEIR) on the proposed project, and the 52-day public review period ended on July 27, 2015. On October 23, 2015, OCII published a Responses to Comments (RTC) document that provided written responses to all comments received during the public review period as well as to several late comment letters. The Final SEIR consists of the combined Draft SEIR and RTC document. On November 3, 2015, the Commission on Community Investment and Infrastructure (OCII Commission) certified the Final SEIR as being in compliance with the California Environmental Quality Act (CEQA) and the CEQA Guidelines. On November 13, 2015, the Mission Bay Alliance (Appellant) filed an appeal on the certification of the Final SEIR (see Exhibit B).

In addition to the appeal letter received on November 13, 2015, OCII and other City agencies have received 20 additional late comment letters at the time of and subsequent to the publication of the RTC document regarding the SEIR or the proposed project. Fifteen of the letters were from the Appellant, most of which are referenced in the appeal letter. Four letters were from the following agencies: Bay Area Air Quality Management District (BAAQMD), California Department of Transportation (Caltrans), Metropolitan Transportation Commission (MTC), and University of California, San Francisco (UCSF). One

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letter was from an individual, John William Templeton. Responses to all 20 additional late comment letters submitted at the time of and subsequent to publication of the RTC document are presented, by topic, in Exhibit D.

This Exhibit A contains the responses to the issues contained in the appeal letter. The grounds for the appeal include all of the comments previously submitted by the Appellant in numerous comment letters submitted since June 2015, and the appeal letter cites many of those previously submitted comments as the specific grounds for the appeal. As described above, comments submitted by the Appellant on the Draft SEIR from June 29, 2015 through October 12, 2015 have already been responded to in writing in the RTC document. Late comments from the Appellant submitted from October 13, 2015 to November 13, 2015 are responded to in writing in Exhibit D of this appeal response packet. Therefore, to demonstrate that all comments cited in the appeal have been thoroughly addressed, this appeal response cross references the previous comments cited in the appeal letter with the written responses to those same issues already prepared either in the RTC document, Exhibit D, or both. This cross-reference is shown for all references cited by the Appellant in the appeal letter, using the coding system described below.

The appeal responses follow the same sequencing, numbering system, and organization of topics as the appeal letter, which presents topics labeled from A to S, and the "Appeal Code" refers to the labels presented in the appeal letter. For nearly all of the issues raised, the Appellant cites previously submitted comments, and to document that OCII has prepared detailed responses to all previously submitted comments, this appeal response includes tables that cross reference the document cited in the appeal letter with the Comment Code used in the SEIR for all comments. These comment codes are then in turn cross referenced to the Response Code where the detailed written response is provided, showing the document and starting page number of the response.

The Comment Code is the comment numbering system used in the RTC document and Exhibit D that provides a unique identifier for each comment; the comment code consists of the Commenter Code (see Table 1 below) followed by a number that corresponds to a bracketed portion of that letter on a specific topic, which is shown in the margins of each comment letter in Appendix COM and Appendix PH of the RTC document and in Exhibit E of this appeal response. The Response Code refers to the topic which the response falls under, and whether the response can be found in the RTC document (RTC) or in Exhibit D of the late comments (LC). A list of the Commenter Codes for the multiple letters submitted by the Appellant and a description of the topic codes are presented in Tables 1 and 2, respectively.

TABLE 1
COMMENTS SUBMITTED BY THE APPELLANT

Commenter Code	Name of Person and Organization Submitting Comments	Comment Date
COMMENT LETTERS AND PUBLIC TESTIMONY RESPONDED TO IN THE RTC DOCUMENT		
O-MBA1L1	Thomas N. Lippe, Law Offices of Thomas N. Lippe, APC, on behalf of Mission Bay Alliance, Letter submitted to OCII	06/29/2015
O-MBA2S1	Osha R. Meserve, Soluri Meserve, on behalf of Mission Bay Alliance, Letter submitted to OCII	07/09/2015
O-MBA3	Thomas N. Lippe, Susan Brandt-Hawley, Osha Meserve, and Patrick Soluri, on behalf of Mission Bay Alliance, Letter submitted to OCII	07/26/2015
O-MBA4	Thomas N. Lippe, Susan Brandt-Hawley, Osha Meserve, and Patrick Soluri, on behalf of Mission Bay Alliance, Letter submitted to OCII	07/26/2015
O-MBA5	Bruce Spaulding, on behalf of Mission Bay Alliance, Letter submitted to OCII	07/27/2015
O-MBA6B1	Susan Brandt-Hawley, Skyla Olds, Brandt-Hawley Law Group, on behalf of Mission Bay Alliance, Letter submitted to OCII	07/26/2015
O-MBA7S2	Patrick M. Soluri, Osha R. Meserve, Soluri Meserve, on behalf of Mission Bay Alliance, Letter submitted to OCII	07/26/2015
O-MBA8L2	Thomas N. Lippe, Law Offices of Thomas N. Lippe, APC, on behalf of Mission Bay Alliance, Letter submitted to OCII	07/26/2015
O-MBA9L3	Thomas N. Lippe, Law Offices of Thomas N. Lippe, APC, on behalf of Mission Bay Alliance, Letter submitted to OCII	07/25/2015
O-MBA10L4	Thomas N. Lippe, Law Offices of Thomas N. Lippe, APC, on behalf of Mission Bay Alliance, Letter submitted to OCII	07/27/2015
O-MBA11L5	Thomas N. Lippe, Law Offices of Thomas N. Lippe, APC, on behalf of Mission Bay Alliance, Letter submitted to OCII	07/24/2015
O-MBA12S3	Osha R. Meserve, Soluri Meserve, on behalf of Mission Bay Alliance, Letter submitted to OCII	08/07/2015
O-MBA13S4	Osha R. Meserve, Soluri Meserve, on behalf of Mission Bay Alliance, Letter submitted to OCII	10/07/2015
PH-Meserve	Osha Meserve, on behalf of Mission Bay Alliance, Transcript of Public Hearing on Draft SEIR	06/30/15
COMMENT LETTERS AND PUBLIC TESTIMONY RESPONDED TO IN EXHIBIT D		
O-MBA14B2	Susan Brandt-Hawley, Brandt-Hawley Law Group, on behalf of Mission Bay Alliance, Letter submitted to OCII	10/13/15
O-MBA15S5	Osha R. Meserve, Soluri Meserve, on behalf of Mission Bay Alliance, Letter submitted to OCII	10/20/15
O-MBA16S6	Patrick M. Soluri, Soluri Meserve, on behalf of Mission Bay Alliance, Letter submitted to OCII	11/02/15
O-MBA17L5	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, Letter submitted to OCII	11/02/15
O-MBA18L6	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, Letter submitted to OCII	11/02/15
O-MBA19B3	Susan Brandt-Hawley, Brandt-Hawley Law Group, on behalf of Mission Bay Alliance, Letter submitted to OCII	11/02/15
O-MBA20L7	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, Letter submitted to OCII	11/02/15[a]
O-MBA21L8	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, Email submitted to OCII	11/03/15

TABLE 1 (Continued)
COMMENT LETTERS SUBMITTED BY THE APPELLANT

Commenter Code	Name of Person and Organization Submitting Comments	Comment Date
COMMENT LETTERS AND PUBLIC TESTIMONY RESPONDED TO IN EXHIBIT D (cont.)		
O-MBA22B4	Susan Brandt-Hawley, Brandt-Hawley Law Group, on behalf of Mission Bay Alliance, Letter submitted to OCII	11/03/15
O-MBA23S7	Patrick M. Soluri, Soluri Meserve, on behalf of Mission Bay Alliance, Letter submitted to SFMTA	11/03/15
O-MBA24L9	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, Letter submitted to Planning Commission	11/05/15
O-MBA25L10	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, Letter submitted to SFDPW	11/06/15
O-MBA26S8	Osha R. Meserve, Soluri Meserve, on behalf of Mission Bay Alliance, submitted to BOS Budget and Finance Committee	11/09/15
O-MBA27S9	Patrick M. Soluri, Soluri Meserve, on behalf of Mission Bay Alliance, Letter submitted to Entertainment Commission	11/10/15
O-MBA28L11	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, Letter submitted to the SF Board of Supervisors Budget and Finance Committee	11/09/15
O-MBA29L12	Exhibit 6: Smith Engineering and Management [Exhibit to 11/13/15 Appeal Letter from Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to OCII]	11/13/15
PH2-Lippe	Thomas Lippe, on behalf of Mission Bay Alliance, Transcript of Certification Hearing	11/03/15
PH2-Hawley	Susan Brandt Hawley, on behalf of Mission Bay Alliance, Transcript of Certification Hearing	11/03/15

[a] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

TABLE 2
RESPONSE TOPIC CODES

Topic Code	Topic	Topic Code	Topic
GEN	General Comments	GHG	Greenhouse Gases Emissions
ERP	Environmental Review Process	WS	Wind and Shadow
AB	AB 900 Process	RE	Recreation
PD	Project Description	UTIL	Utilities
PP	Plans and Policies	PS	Public Services
IO	Impact Overview	BIO	Biological Resources
LU	Land Use	GEO	Geology
PH	Population and Housing	HYD	Hydrology and Water Quality
CULT	Cultural Resources	HAZ	Hazards and Hazardous Material
TR	Transportation	EN	Energy
NOI	Noise	ALT	Alternatives
AQ	Air Quality		

TOPIC A: PUBLIC COMMENT

A.1 **Appeal Issue**: Appellant states that OCII thwarted public comment on the SEIR due to conflicting information in public notices, and requests that the Final SEIR be recirculated to allow for public comment on the Final SEIR and RTC document.

Summary of Appeal Response A.1: The RTC document and Final SEIR were properly noticed and standard review time was afforded for public comment, consistent with CEQA requirement. Recirculation is not warranted.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
A.1	Nov 2, Lippe FSEIR[a]	O-MBA20L7-2	LC ERP-4 Exh D p. D-89	Public comment on RTC document and recirculation

[a] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

TOPIC B: PROJECT DESCRIPTION

B.1 **Appeal Issue**: The SEIR presents a shifting project description that makes it difficult for decisionmakers and the public.

Summary of Appeal Response B.1: As required by CEQA, the Draft SEIR provides a project description in sufficient detail to conduct the impact analysis, using the best assumptions available at that stage of project planning and design. The RTC document describes project refinements that could affect the impact analysis presented in the Draft SEIR. None of the project refinements resulted in substantial changes to the conclusions of Draft SEIR impact analysis. Some of the comments claiming inconsistent project description are misinterpretations of the project that conflate the proposed project with other elements of the Mission Bay Redevelopment Plan or with the project assumptions used in the AB 900 process.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
B.1	July 26, Soluri Meserve	O-MBA7S2-34 O-MBA7S2-36 O-MBA7S2-38	RTC PD-2 RTC p. 13.5-12	Project description assumptions
B.1	Nov 2, Soluri Meserve, pp. 5-7	O-MBA16S6-3	LC GHG-1 Exh D p. D-256	Project description assumptions used for AB 900 analysis

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TOPIC C: TIERING

C.1 **Appeal Issue**: Appellant asserts that tiering the SEIR from the 1990 and 1998 Mission Bay EIRs is not permissible because the project is different from the project described in the prior EIRs and because of the following: new information and/or changes in circumstances; certain resource areas were excluded from the SEIR; and reliance on old documents fails to provide a cohesive, understandable document.

Summary of Appeal Response C.1: The SEIR was prepared consistent with CEQA Guidelines Sections 15151 and 15152 regarding Standards for Adequacy of an EIR and Tiering, respectively. CEQA provides for tiering where an EIR is completed for a large-scale plan at an early stage, and further analyses will be prepared at later stages. This is the case here, and CEQA tiering principles were properly applied. The SEIR identifies and appropriately analyzes any new information or change in circumstances relevant to the impact analyses. The appellant is erroneous in stating that resources areas were excluded from the SEIR, because all resource areas required under CEQA were analyzed in the SEIR and associated Initial Study, which was included as an appendix to the SEIR.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
C.1	June 30, oral comments by Osha Meserve	PH-Meserve-4	RTC ERP-7 RTC p. 13.3-22	Tiering
C.1	July 26, Brandt-Hawley Law Group, pp.1-2	O-MBA6B1-2	RTC ERT-6 RTC p. 13.3-14	CEQA Standards of Adequacy
C.1	July 26, Mission Bay Alliance	O-MBA3-1	RTC ERP-7 RTC p. 13.3-22	Tiering
C.1	Nov 2, Soluri Meserve, pp.1-3	O-MBA16S6-1	LC ERP-2 Exh D p. D-74	Tiering

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TOPIC D: AB900 AND ADMINISTRATIVE RECORD

D.1 **Appeal Issue**: Appellant states that OCII has failed to comply with applicable requirements under the Jobs and Economic Improvement through Environmental Leadership Act (commonly referred to as AB 900) for the administrative record.

Summary of Appeal Response D.1: Since certification of the proposed project as an environmental leadership development project by the Governor under AB 900, OCII has complied, and continues to comply, with the procedural requirements of AB 900. OCII published and continues to update the administrative record of proceedings for the project, which is available online, in a downloadable format, at http://www.gsweventcenter.com.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
D.1	July 9, Soluri Meserve	O-MBA2S1-1	RTC AB-2 RTC p. 13.4-16	AB 900 Administrative Record
D.1	July 26, Mission Bay Alliance	O-MBA4-1	RTC AB-2 RTC p. 13.4-16	AB 900 Administrative Record
D.1	Nov 2, Soluri Meserve, p. 3	O-MBA16S6-2	LC AB-1 Exh D p. D-100	AB 900 Administrative Record

TOPIC E: ALTERNATIVES

E.1 **Appeal Issue**: The Draft and Final SEIR fail to address and respond to comments regarding the adequacy of the analysis of the No Project alternative.

Summary of Appeal Response E.1: The SEIR analysis of the No Project Alternative was prepared in full compliance with CEQA Guidelines Section 15126.6(e), and is based on what would reasonably be expected to occur at the project site should the proposed project not be approved. In this case, the No Project Alternative consists of a hypothetical development scenario that would be consistent with the restrictions and controls established for the site in the Mission Bay South Redevelopment Plan and the South Design for Development The specific issues raised by the appellant in the cited comment letter are based on erroneous assumptions for allowable development under the Design for Development.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
E.1	July 26, Susan Brandt-Hawley	O-MBA6B1-12	RTC ALT-2 RTC p. 13.24-5	No Project Alternative

E.2 **Appeal Issue**: The Draft and Final SEIR fail to address and respond to comments regarding the failure to consider a potentially feasible off-site alternative.

Summary of Appeal Response E.2: The SEIR alternatives analysis included screening of 12 alternative sites in San Francisco and selected one site for detailed analysis, the Off-site Alternative at Piers 30-32 and Seawall Lot 330. This alternative meets the CEQA criteria for alternatives per CEQA Guidelines Section 15126.6(c), (f)(2). OCII disagrees with the appellant's opinion that this was an inappropriate off-site alternative, and for the purposes of this SEIR, believes this to be a potentially feasible alternative.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
E.2	July 26, Susan Brandt-Hawley	O-MBA6B1-13	RTC ALT-3 RTC p. 13.24-8	Off-site Alternative at Piers 30-32 and Seawall Lot 330

E.3 Appeal Issue: Appellant asserts that the OCII findings regarding the feasibility of alternatives are not supported by substantial evidence, including the findings regarding the off-site alternative near Pier 80 proposed by the appellant.

Summary of Appeal Response E.3: OCII and its consultants have examined the off-site alternative proposed by the appellant and have determined it not to be a feasible alternative for numerous reasons, including: the site and associated parcels are not for sale, are currently under active use, and it is unlikely that the project sponsor can reasonably acquire, control, or otherwise have access to the site within a reasonable time period; the site would require rezoning and amending the Planning Code; a portion of the site would require voter approval of a height increase; and the site would not necessarily avoid or lessen any significant environmental impacts compared to the proposed project and would likely result in the same and possibly more severe significant impacts as the proposed project with respect to transportation, air quality, noise, hydrology, and water quality. Furthermore, no appeal is available from OCII's approval of Resolution No. 70-2015 adopting CEQA findings, including adopting a mitigation monitoring and reporting program and a statement of overriding considerations. (Letter, T. Bohee to T. Lippe, at p. 2 (Nov. 20, 2015).) While no appeal is available from OCII's approval of Resolution Nos. 70-2015, if the Board – in response to the Certification Appeal – reverses OCII's certification of the SEIR, then "prior project approvals would be rescinded to allow CCII to, if and as necessary, adopt additional findings, revise the F[S]EIR, or amend the project approvals." (*Ibid*.)

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
E.3	Nov 3, Susan Brandt-Hawley	O-MBA22B4-5	LC ALT-1 Exh D p. D-349	Alternative site near Pier 80
E.3	Oct 13, Susan Brandt-Hawley	O-MBA14B2-1	LC ALT-1 Exh D p. D-349	Alternative site near Pier 80

TOPIC F: AIR QUALITY

F.1 Appeal Issue: Appellant does not describe any specific issues and only lists the documents listed below as the grounds for appeal.

Summary of Appeal Response F.1: All comment letters and supporting documentation previously submitted to OCII have been reviewed and substantive comments have been responded to in writing in the Response to Comments document or in Exhibit D of this appeal response. Refer to appeal responses F.2 to F.12 for responses to specific issues.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
F.1	July 26, Lippe	O-MBA8L2-1 to O-MBA8L2-13	RTC Section 13.13, p. 13.13-1 to 13.13-70	Various Air Quality Issues, see appeal issues below for specific issues
F.1	July 19, Gilbert	O-MBA8L2-14 to O-MBA8L2-25	RTC Section 13.13, p. 13.13-1 to 13.13-70	Various Air Quality Issues
F.1	July 20, SWAPE	O-MBA8L2-26 to O-MBA8L2-34	RTC Section 13.13, p. 13.13-1 to 13.13-70	Various Air Quality Issues
F.1	Nov 2, Lippe FSEIR[a]	O-MBA20L7-3	LC AQ-2 Exh. D, p. D-216	Construction mitigation measure
		O-MBA20L7-4	LC AQ-1 Exh. D, p. D-207	Emissions offset mitigation measure
		O-MBA20L7-5	LC AQ-8 Exh. D, p. D-249	Air quality impacts of project refinements and variant
F.1	October 30, Gilbert	O-MBA20L7-12 to O-MBA20L7-19	LC Section 10 Exh. D, p. D-203	Various Air Quality Issues
F.1	Nov 2, Farrow FSEIR	O-MBA20L7-10	LC AQ-3 Exh. D, p. D-233	Health risk assessment
F.1	Nov 2, SWAPE	O-MBA20L7-11	LC AQ-3 Exh. D, p. D-233	Health risk assessment
F.1	CAPCOA, 2009	O-MBA20L7 Not bracketed	No response required	Does not contain comments on the SEIR or proposed project
F.1	San Luis Obispo APCD, 2012	O-MBA20L7 Not bracketed	No response required	Does not contain comments on the SEIR or proposed project
F.1	Mission Bay Land Use Plan, Nov 2005	O-MBA20L7 Not bracketed	No response required	Does not contain comments on the SEIR or proposed project
F.1	OEHHA, 2015. Risk Assessment Guidelines	O-MBA20L7 Not bracketed	No response required	Does not contain comments on the SEIR or proposed project
F.1	OEHHA, 2009. Adoption of Revised Air Toxics Hot Spots Program	O-MBA20L7 Not bracketed	No response required	Does not contain comments on the SEIR or proposed project
F.1	OEHHA, 2012. Adoption of Revised Air Toxics Hot Spots Program	O-MBA20L7 Not bracketed	No response required	Does not contain comments on the SEIR or proposed project

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
F.1	OEHHA, 2012. Technical Support Document	O-MBA20L7 Not bracketed	No response required	Does not contain comments on the SEIR or proposed project

[a] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

F.2 **Appeal Issue**: The City cannot use the SEIR's significance thresholds until it formally adopts them.

Summary of Appeal Response F.2: The CEQA Guidelines encourage lead agencies to develop and publish thresholds, but the Guidelines do not require the adoption of formal thresholds for individual projects.

F.3 **Appeal Issue**: Appellant questions significance thresholds used for construction and operational air quality impacts.

(a)(b) Air quality thresholds of significance for ozone precursors used in the SEIR are borrowed from another agency and not supported by substantial evidence. These thresholds are based on inapplicable New Source Rule values.

(c) The Draft SEIR's impact assessments for construction-related criteria pollutants and toxic air contaminant (TAC) emissions are invalid. The SEIR underestimates the project's construction-related emissions by incorrectly using a default hauling trip length of 20 miles provided by California Emissions Estimator Model (CalEEMod), rather than actual trip length, to determine the on-road hauling emissions that would occur during construction.

(d) The Draft SEIR's impact assessments for operational criteria pollutants and TAC emissions are invalid. The SEIR fails to include vehicle emissions from Warriors game traffic in its analysis of operational emissions. The impact assessment for operational ozone precursors emissions is also misleading because it omits from its quantitative tally of criteria pollutants the emissions the project will generate in San Francisco and the project area. In addition, to the extent that the significance thresholds are invalid, Mitigation Measure M-AQ-2b fails to reduce ozone precursor emissions to less-than-significant levels and does not consider the feasibility of more robust mitigation strategies.

Summary of Appeal Response F.3:

(a)(b) The air quality significance thresholds are supported by substantial evidence that is presented in the SEIR. Significance standards recommended by regulatory agencies, in this case the BAAQMD, are routinely used because their

use cannot be challenged as inappropriate or unsupported. The significance thresholds used to evaluate ozone precursor emissions were developed by the BAAQMD and are based on the federal New Source Review (NSR) requirements. It is the existing practice by most air districts that develop CEQA thresholds of significance to base those thresholds on the NSR emissions limits. The NSR emissions limits represent levels below which new sources of emissions are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. Monitored ozone concentrations in the San Francisco Bay Area have declined 17 percent over the past 20 years, in large part due to the measures taken by BAAQMD in curtailing emissions from stationary sources. The NSR emissions limits therefore enable BAAQMD to capture a sufficient percentage of projects to effectively reduce ozone precursor emissions within the air basin, and can be appropriately applied to CEQA projects to ensure attainment of air quality standards. The BAAQMD's Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance provides substantial evidence to support these thresholds, which is summarized in the SEIR.

(c) The use of CalEEMod default values for the estimated haul trip length are appropriate for assessing construction criteria air pollutant and TAC emissions when the location of disposal sites are unknown. Use of the CalEEMod default values provides an appropriately conservative estimate of the project's emissions from haul trips because while some disposal sites may exceed the 20 mile trip length, much of the construction and demolition debris is anticipated to be accepted at the Recology recycling facility, approximately five miles from the project site.

(d) The SEIR's air quality analysis appropriately accounts for emissions from Warriors game traffic and assesses those impacts on both a regional level and a local, site-specific, level. In terms of regional air quality impacts, the SEIR analyzed the vehicle miles travelled (VMT) of season ticket holders and determined that VMT would remain unchanged. Thus, the net ozone precursors added to the air basin as a result of Warriors game traffic would be essentially the same as existing conditions. However, for purposes of localized air quality impacts (health risks) the SEIR includes Warriors game traffic as net new emissions to the local environmental setting.

The SEIR identifies Mitigation Measure M-AQ-2b (Emissions Offsets) to further reduce the project's air quality impact after considering all feasible measures to reduce the project's impact in the first place. The SEIR concludes that because Mitigation Measure M-AQ-2b requires actions by a third party or by an emission offset project yet to be identified, it cannot be stated with certainty that this mitigation measure would reduce impacts to less than significant, and the impact is therefore considered significant and unavoidable, even with mitigation.

However, if an emissions offset project is successfully implemented by the project sponsor and/or the BAAQMD, Mitigation Measure M-AQ-2b could sufficiently reduce ozone precursor emissions to less than significant levels.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
F.3	July 26, Lippe, pp. 4-9	O-MBA8L2-4	RTC AQ-1b RTC, p. 13.13-13	Use of BAAQMD Guidelines and significance thresholds for construction and operation
F.3	July 19, Gilbert, pp.3-6	O-MBA8L2-16	RTC AQ-1b RTC, p. 13.13-13	Use of BAAQMD Guidelines and significance thresholds for construction and operation
F.3	October 30, Gilbert, pp. 2-6	O-MBA20L7-12 to O-MBA20L7-13	LC AQ-4 Exh D, p. D-240 LC AQ-5 Exh D, p. D-243	Air quality significance thresholds Air quality traffic assumptions
F.3	July 26, Lippe, pp. 9-10	O-MBA8L2-6	RTC AQ-1a RTC, p. 13.13-4	Lead agency's use of BAAQMD thresholds
		O-MBA8L2-7	RTC AQ-6a RTC, p. 13.13-53	Mitigation of construction-related impacts
		O-MBA8L2-8	RTC AQ-3 RTC, p. 13.13-40	Construction Impacts, Methodology, and Assumptions
		O-MBA8L2-9	RTC AQ-6a, 6b, 6c RTC, p. 13.13-53	Mitigation Measure, Feasibility and Enforcement
		O-MBA8L2-10	RTC AQ-1b RTC, p. 13.13-13	Use of BAAQMD Guidelines and significance thresholds for construction and operation
F.3	July 19, Gilbert, pp.6-7	O-MBA8L2-17	RTC AQ-6d RTC, p. 13.13-56	Use of renewable diesel as construction mitigation measure
F.3	July 26, Lippe, p. 10	O-MBA8L2-8	RTC AQ-3 RTC, p. 13.13-40	Construction Impacts, Methodology, and Assumptions
		O-MBA8L2-9	RTC AQ-6a, 6b, 6c RTC, p. 13.13-53	Mitigation Measure, Feasibility and Enforcement
		O-MBA8L2-10	RTC AQ-1b RTC, p. 13.13-13	Use of BAAQMD Guidelines and significance thresholds for construction and operation
F.3	July 20, SWAPE, 2-6	O-MBA8L2-31	RTC AQ-3 RTC, p. 13.13-40	Construction Impacts, Methodology, and Assumptions
F.3	July 26, Lippe, p. 11	O-MBA8L2-11	RTC AQ-7 RTC, p. 13.13-65	Emissions Offset mitigation measure
F.3	July 19, Gilbert, p. 10	O-MBA8L2-19	RTC AQ-6c RTC, p. 13.13-55	Construction Mitigation—Compliance certification
		O-MBA8L2-20	RTC AQ-7 RTC, p. 13.13-65	Emissions Offset mitigation measure
		O-MBA8L2-21	RTC AQ-4a RTC, p. 13.13-44	Consideration of Vehicle Trips from GSW basketball events
F.3	October 30, Gilbert, pp. 6-10	O-MBA20L7-13	LC AQ-5 Exh D, p. D-243	Air quality traffic assumptions

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
F.3	July 26, Lippe, pp. 10-11	O-MBA8L2-10	RTC AQ-1b RTC, p. 13.13-13	Use of BAAQMD Guidelines and significance thresholds for construction and operation
F.3	July 26, Lippe, p. 12	O-MBA8L2-11	RTC AQ-7 RTC, p. 13.13-65	Emissions Offset mitigation measure

F.4 Appeal Issue: Mitigation Measure M-AQ-1 does not comply with CEQA requirements.

(a) This measure would limit offroad equipment used during construction to machinery equipped with at a minimum, Tier 2 engines with verified diesel emission control strategies (VDECS), and at a maximum, Tier 4 or Tier 4 interim engines. However, the SEIR does not demonstrate the feasibility of this measure.

(b) This measure includes a limit on idling time of two minutes and provides exceptions to this limit as provided in state law, but fails to describe what these exceptions are.

(c) This measure is unenforceable and places inappropriate reliance on the project sponsor for interpretation and compliance determination.

(d)(e) The response to comment AQ-6a (availability of Tier 2 and Tier 4 off-road vehicles) is inadequate. The response to comment AQ-6e is inadequate (ability to implement and enforce Mitigation Measure M-AQ-1).

Summary of Appeal Response F.4:

(a) Mitigation Measure M-AQ-1 is feasible. The City Planning staff have reviewed the California Air Resources (CARB) database used to determine fleet-wide compliance with the USEPA's off-road vehicle standards and determined that as of 2014, at least 59 percent of all off road equipment are rated USEPA Tier 2 or higher. Further, since 2008 Tier 3 or Tier 4 equipment is the only equipment available for purchase. Although a contractor may have lower Tiered equipment in its fleet, it is expected that the contractor would deploy equipment meeting the requirements of Mitigation Measure M-AQ-1 for use on the project site. If such equipment were not available in the contractor's fleet, the contractor could either obtain the equipment for temporary use from equipment rental companies or purchase new equipment meeting the requirement.

(b) Mitigation Measure M-AQ-1 allows for exceptions to the limits on idling times for certain vehicles as specified in the California Code of Regulations (CCR) Title 13, Division 3 § 2485 (for on-road vehicles) and § 2449(d)(2) (for off-road vehicles). The RTC document includes reference to specific instances where an exception would apply.

(c) The lead agency, OCII, has the authority and ability to monitor and enforce Mitigation Measure M-AQ-1, as specified in the Mitigation Monitoring and Reporting Program (MMRP) that was included as part of the conditions of project approvals.

(d)(e) Responses to Comments AQ-6a and AQ-6e are adequate. Response AQ-6a responds to comments regarding mitigation of construction-related impacts, including availability of Tier 2 and Tier 4 offroad equipment, described in part (a) of this appeal response F.4. Response AQ-6e responds to comments regarding implementation and enforceability of Mitigation Measure M-AQ-1, described in part (c) of this appeal response F.4.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
F.4	July 26, Lippe, p. 9	O-MBA8L2-6	RTC AQ-1a RTC, p. 13.13-4	Lead agency's use of BAAQMD thresholds
F.4	July 20, SWAPE, 6-8	O-MBA8L2-32	RTC AQ-6a RTC, p. 13.13-53	Mitigation of construction-related impacts
F.4	October 30, Gilbert, pp. 10-14	O-MBA20L7-14	LC AQ-2 Exh D, p. D-216	Construction mitigation measures
F.4	July 26, Lippe, p. 10	O-MBA8L2-8	RTC AQ-3 RTC, p. 13.13-40	Construction Impacts, Methodology, and Assumptions
		O-MBA8L2-9	RTC AQ-6a, 6b, 6c RTC, p. 13.13-53	Mitigation Measure, Feasibility and Enforcement
		O-MBA8L2-10	RTC AQ-1b RTC, p. 13.13-13	Use of BAAQMD Guidelines and significance thresholds for construction and operation
F.4	July 19, Gilbert pp. 7-10	O-MBA8L2-18	RTC AQ-6e RTC, p. 13.13-59	Implementation and Enforceability of Mitigation Measure M-AQ-1: Construction Emissions Minimization
		O-MBA8L2-19	RTC AQ-6c RTC, p. 13.13-55	Construction Mitigation—Compliance certification
		O-MBA8L2-20	RTC AQ-7 RTC, p. 13.13-65	Emissions Offset mitigation measure
F.4	October 30, Gilbert, pp. 14-16	O-MBA20L7-15	LC AQ-6 Exh D, p. D-245	Air quality specialist
F.4	Nov 2, Lippe FSEIR, pp. 2-3[a]	O-MBA20L7-3	LC AQ-2 Exh. D, p. D-216	Construction mitigation measure
F.4	October 30, Gilbert, p. 11	O-MBA20L7-14	LC AQ-2 Exh D, p. D-216	Construction mitigation measures
F.4	Nov 2, Lippe FSEIR, pp. 3-5[a]	O-MBA20L7-3	LC AQ-2 Exh. D, p. D-216	Construction mitigation measure

[a] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

F.5 **Appeal Issue**: Mitigation Measure M-AQ-2b does not comply with CEQA requirements and responses to these concerns are inadequate.

(a) The per ton charge for emission offsets is too low to achieve complete offset of the project's emissions.

(b) Mobile-based emission offsets sources are too short-lived to completely offset project-generated emissions.

Summary of Appeal Response F.5:

(a) The $18,030 per weighted ton offset fee specified in Mitigation Measure M-AQ-2b is based on the California Air Resources Board (CARB) cost-effectiveness criteria for emissions offset projects under the state's Carl Moyer Incentive Program. The offset fee amount mirrors the Sacramento Metropolitan Air Quality Management District's offsite construction mitigation fee program, which is also $18,030 per weighted ton, and is nearly double the San Joaquin Valley Air Pollution Control District Indirect Source Review program fee of $9,350 per ton. The $18,030 per weighted ton offset fee meets the *rough proportionality* standard required under CEQA. Mitigation Measure M-AQ-2b has been modified to allow payment of a higher offset fee if required.

(b) Emissions offset programs replace existing high-polluting engines with cleaner more efficient engines and the incremental benefit of these replacements are realized for successive years into the future until the original engine would have reached the end of its useful life or its operation is prohibited by regulation.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
F.5	July 26, Lippe, pp. 11-12	O-MBA8L2-11	RTC AQ-7 RTC, p. 13.13-65	Emissions Offset mitigation measure
F.5	Oct 30, Gilbert, pp. 17 -19	O-MBA20L7-17	LC AQ-1 Exh D, p. D-207	Emissions Offset mitigation measure
F.5	July 26, Lippe, pp. 12-13	O-MBA8L2-11	RTC AQ-7 RTC, p. 13.13-65	Emissions Offset mitigation measure
F.5	July 19, Gilbert 14-15	O-MBA8L2-24	RTC AQ-7 RTC, p. 13.13-65	Emissions Offset mitigation measure
F.5	Oct 30, Gilbert pp. 19-21	O-MBA20L7-18	LC AQ-1 Exh D, p. D-207	Emissions Offset mitigation measure

F.6 **Appeal Issue**: The SEIR's cancer and health risk assessment for toxic air contaminants is invalid.

(a) The City's reliance on EPA's judgment of "acceptable" cancer risk is legally flawed. The City relies on a misrepresentation of actual EPA policy. And the Draft SEIR errs by using EPA's judgment of acceptable cancer risk to determine impact significance.

(b) The SEIR does not assess the project's individual excess cancer risk to the BAAQMD's 10 in one million significance threshold.

(c) The Draft SEIR does not use BAAQMD's cumulative $PM_{2.5}$ significance threshold of 0.8 ig/m3 [*sic*].

(d) The Final SEIR does not provide a project-specific health risk assessment for the project, only a cumulative impact analysis. Project-caused excess TAC cancers are more than four times the threshold used by most California air districts to determine the significance of an individual project's impacts.

(e) The SEIR's assessment of cumulative TACs does not include all sources of related impacts, including foreseeable sources of TAC emissions in it cumulative impact analysis and foreseeable future construction and operation of developments in the project vicinity.

(f) Project health risks are underestimated using older standards. The Final SEIR does not incorporate updated child breathing rates set forth by OEHHA in 2012.

Summary of Appeal Response F.6:

(a)(b) The SEIR's cancer risk threshold was developed in close coordination with BAAQMD staff and is based not solely on EPA regulations for what constitutes an "acceptable risk" level, but also on regional modeling demonstrating that the threshold of 100 per one million population reflects the air quality in the most pristine portions of the Bay Area (e.g., Point Reyes).

(c) The SEIR does not utilize the BAAQMD's incremental cumulative $PM_{2.5}$ contribution threshold of 0.8 $\mu g/m^3$, but rather applies a cumulative analysis that considers existing sources within the project area. The SEIR assesses the PM2.5 exposure impact relative to a conservative health-based exposure standard based on the ambient air quality standards promulgated by the California Air Resources Board and the U.S. Environmental Protection Agency. This method of assessing cumulative impact incorporates existing ambient $PM_{2.5}$ levels, which range from 8.6 μg/m3 to 9.0 $\mu g/m^3$ at the project site and thus addresses the impact relative to health based standards rather than the BAAQMD incremental standard which is not based on a direct link to human health exposure. The SEIR provides substantial evidence to support the $PM_{2.5}$ threshold of 10 μg/m3, which is based on low-end (i.e., most health protective) USEPA recommendations.

(d) The SEIR provides a project-specific health risk assessment and determines first, whether the health risk to a sensitive receptor would be significant and if so, then whether the project's contribution to that health risk is considerable. Since a person's environmental risk of contracting cancer is based on that

person's cumulative exposure, projects that would result in a cumulative cancer risk exceeding this level are assessed further to determine whether the project's contribution is cumulatively considerable. This additional analysis utilizes the BAAQMD's 10 per one million population threshold, contrary to the Appellant's claim.

(e) The SEIR's health risk analysis accounts for the construction and operation of cumulative projects and concludes that due to the distance of cumulative projects from the project site, construction activities from those projects would not substantially contribute to localized health effects.

(f) In March 2015, the OEHHA adopted revised guidance on recommended breathing rates for health risk analyses. The BAAQMD has not yet implemented the OEHHA guidance into its permitting process and the analysis in the EIR utilizes the methodology currently embraced by the BAAQMD. Air pollution districts may deviate from OEHHA guidance, as the San Joaquin Air Pollution Control District has done.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
F.6	July 26, Lippe, pp. 13-18	O-MBA8L2-12	RTC AQ-1c RTC, p. 13.13-24	Health Risk Significance Thresholds
F.6	July 26, Lippe, pp. 18-19	O-MBA8L2-13	RTC AQ-1d RTC, p. 13.13-29	PM2.5 Significance Thresholds
F.6	July 20, SWAPE, pp. 10-11	O-MBA8L2-34	RTC AQ-1c, 1d RTC, p. 13.13-24	Health Risk Significance Thresholds, PM2.5 Significance Thresholds
F.6	Nov 2, Farrow FSEIR, pp. 1-3	O-MBA20L7-10	LC AQ-3 Exh D, p. D-233	Health risk assessment
F.6	July 20, SWAPE, pp. 8-10	O-MBA8L2-33	RTC AQ-1c RTC, p. 13.13-24	Health Risk Significance Thresholds
F.6	Nov 2, SWAPE, pp. 2-4	O-MBA20L7-11	LC AQ-3 Exh D, p. D-233	Health risk assessment
F.6	Nov 2, Farrow FSEIR, p. 3	O-MBA20L7-10	LC AQ-3 Exh D, p. D-233	Health risk assessment
F.6	Nov 2, SWAPE, pp. 4-12	O-MBA20L7-11	LC AQ-3 Exh D, p. D-233	Health risk assessment
F.6	July 19, Gilbert, pp. 13-14	O-MBA8L2-22	RTC AQ-5 RTC, p. 13.13-50	Health Risk Methodology and Assumptions
F.6	Nov 2, Farrow FSEIR, pp. 4-5	O-MBA20L7-10	LC AQ-3 Exh D, p. D-233	Health risk assessment
F.6	Nov 2, SWAPE, pp. 12-15	O-MBA20L7-11	LC AQ-3 Exh D, p. D-233	Health risk assessment

F.7 **Appeal Issue**: The SEIR's impact assessment for construction-related dust pollution is based on legal errors and is not supported by substantial evidence.

Summary of Appeal Response F.7: The project is required to comply with the San Francisco Dust Control Ordinance, which has a mandate for "no visible dust." The project sponsor would be required to prepare a dust control plan for approval by the San Francisco Department of Public Health. The RTC document includes evidence that application of best management practices at construction sites significantly control fugitive dust emissions and individual measures have been shown to reduce fugitive dust by anywhere between 30 to 90 percent.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
F.7	July 26, Lippe, pp. 1-3	O-MBA8L2-2	RTC AQ-2 RTC, p. 13.13-32	Dust Control Plan

F.8 **Appeal Issue**: Construction and operational mitigation options have not been thoroughly reviewed for diesel alternatives.

Summary of Appeal Response F.8: Mitigation Measures M-AQ-1 and M-AQ-2a were amended in the RTC document to require the use of renewable diesel (a diesel alternative) for construction and operational emissions if it can be demonstrated that this fuel is compatible with the equipment to be used and the air quality emissions from the transport of renewable diesel to the project site will not offset the emissions reduction achieved through its use.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
F.8	July 19, Gilbert, pp. 6-7	O-MBA8L2-17	RTC AQ-6d RTC, p. 13.13-57	Use of renewable diesel as construction mitigation
F.8	Oct 30, Gilbert, p. 16-17	O-MBA20L7-16	LC AQ-7 Exh D, p. D-247	Renewable diesel as mitigation

F.9 **Appeal Issue**: Operational mitigation measure for electrical outlets is vague and unenforceable.

Summary of Appeal Response F.9: Mitigation Measure M-AQ-2a requires the project sponsor to provide outlets that can be used to power landscape equipment, and is included in the Mitigation Monitoring and Reporting Program (MMRP). This measure would be enforced by review and approval of the electrical plans to ensure a sufficient number of electrical power outlets are located on the outside of buildings and in locations where landscape maintenance equipment is anticipated to be required.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
F.9	July 19, Gilbert, p. 10	O-MBA8L2-20	RTC AQ-6f RTC, p. 13.13-61	Feasibility of Mitigation Measure M-AQ-2a: Reduce Operational Emissions

F.10 Appeal Issue: Construction emissions from wastewater improvements have not been adequately reviewed in the SEIR.

Summary of Appeal Response F.10: Improvements to the Mariposa Pump Station are not proposed as part of this project or required for the project. The Mariposa Pump Station is a separate project that is proposed by the SFPUC and would be subject to its own future CEQA review, which would identify the air quality impacts associated with construction of the pump station at that time. To date, specific plans and design for the pump station improvements have not been finalized and the CEQA review has not been completed.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
F.10	July 24, Lippe, pp. 1-4	O-MBA11L5-2	RTC UTIL-3 RTC, p. 13.17-7	Wastewater system, description and environmental effects of new facilities
		O-MBA11L5-3	RTC UTIL-6 RTC, p. 13.17-17 RTC HYD-3 RTC, p. 13.21-14	Wastewater System—Description of interim improvements Water Quality, Interim Wastewater system improvements
F.10	July 19, Gilbert, pp. 2-3	O-MBA8L2-15	RTC AQ-3 RTC, pp. 13.13-40; and RTC UTIL-3 RTC, 13.17-7	Construction Impacts, Methodology, and Assumptions; and Wastewater system, description and environmental effects of new facilities

F.11 Appeal Issue: Changes to the project since publication of the Draft SEIR require recirculation of a revised Draft SEIR due to new and more severe air quality significant impacts.

Summary of Appeal Response F.11: Changes to the project description since publication of the Draft SEIR were evaluated in the RTC document and would not result in a new significant air quality impact or result in substantially more severe significant impacts. Thus, recirculation is not required. Emissions associated with operation of dewatering generators, operation of a pug mill to treat soil on-site and removal of previously assumed rapid impact compaction activities would increase NOx emissions from 144 pounds per day to

151 pounds per day. This increase in temporary construction emissions would not result in a new significant impact or a substantial increase in the severity of the construction air quality impacts disclosed in the Draft SEIR. Emissions associated with the construction of the project variant combined with the construction changes listed above, would increase NOx emissions from 144 pounds per day to 157 pounds per day. This increase in temporary construction emissions would not result in a new significant impact or a substantial increase in the severity of the construction air quality impacts disclosed in the Draft SEIR because the Draft SEIR identified that the project would increase NOx emissions due to construction activities and the incremental increase in the amount of temporary construction emissions is not substantial. Further, Mitigation Measure M-AQ-2b requires offset of all emissions in excess of the significance thresholds, so with mitigation, the slight increase in temporary construction emissions would be offset, resulting in the same level of emissions after mitigation, as already disclosed in the Draft SEIR.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
F.11	Nov 2, Lippe FSEIR, pp. 6-7[a]	O-MBA20L7-5	LC AQ-8 Exh. D, p. D-249	Air quality impacts of project refinements and variant

[a] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

F.12 Appeal Issue: New information regarding Mitigation Measure M-AQ-2b since publication of the Draft SEIR requires recirculation of a revised Draft SEIR. The appellant asserts that the BAAQMD would not participate in Mitigation Measure M-AQ-2b offset emissions plan. The City cannot find that Impact 4 is less than significant with mitigation because the City and project sponsor refuse to agree to BAAQMD's offset fees in Mitigation Measure M-AQ-2b. There is no evidence that Option 2 offset within Mitigation Measure M-AQ-2b is feasible. The City cannot find that all feasible mitigation measures have been adopted that would reduce impacts of Impact AQ-1, Impact AQ-2, and Impact C-AQ-1.

Summary of Appeal Response F.12: The BAAQMD's November 2, 2015, letter does not establish that the California Air Resources Board cost-effectiveness criteria are inappropriate for determining the offset costs under Mitigation Measure M-AQ-2b. The BAAQMD does have an emissions offset mitigation or Indirect Source Review program. The $18,030 per weighted ton offset fee specified in Mitigation Measure M-AQ-2b is based on the California Air Resources Board (CARB) cost-effectiveness criteria for emissions offset projects under the state's Carl Moyer Incentive Program. The offset fee amount mirrors the Sacramento Metropolitan Air Quality Management District's offsite

construction mitigation fee program, which is also $18,030 per weighted ton, and is nearly double the San Joaquin Valley Air Pollution Control District Indirect Source Review program fee of $9,350 per ton. Mitigation Measure M-AQ-2b has been modified to allow payment of a higher offset fee if required.

Mitigation Measure M-AQ-2b allows the project sponsor to directly implement an emissions offset project as an alternative to entering into an agreement with the BAAQMD. OCII believes this to be a feasible approach because the City successfully implemented an emissions offset project for the 34th America's Cup by installing a shoreside power facility at the Port of San Francisco's Pier 70 dry dock, which has resulted in long-term reduction in criteria air pollutant emissions in the San Francisco Bay Area Air Basin.

Impact AQ-4 relates to the potential for the proposed project to conflict with, or obstruct implementation of, the *2010 Clean Air Plan*. The Final SEIR determined that this impact would be less than significant with mitigation because the project (1) includes mitigation measures that promote attainment of air quality standards and protection of public health in the Bay Area, design measures to minimize greenhouse gases emissions; (2) includes applicable control measures from the air quality plan, including transportation control measures and energy and climate control measures; and (3) would not disrupt or hinder implementation of control measures identified in the Clean Air Plan. The proposed project includes feasible mitigation measures that would contribute towards achieving these goals, including Mitigation Measures M-AQ-1 (Construction Emissions Minimization), M-AQ-2a (Reduce Operational Emissions), and M-AQ-2b (Emissions Offsets). Therefore, this impact is appropriately determined to be less than significant with mitigation.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
F.12	Nov 2, Lippe FSEIR, pp. 5-6[a]	O-MBA20L7-4	LC AQ-1 Exh. D, p. D-207	Emissions offset mitigation measure
F.12	Oct 30, Gilbert, pp. 17-18	O-MBA20L7-17	LC AQ-1 Exh D, p. D-207	Emissions offset mitigation measure
F.12	Nov 3, oral testimony of Thomas N. Lippe at OCII hearing	PH2-Lippe-4	LC AQ-1 Exh D, p. D-207	Emissions offset mitigation measure

[a] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

TOPIC G: TRANSPORTATION

G.1 Appeal Issue: Appellant does not describe any specific issues and only lists the documents listed below as the grounds for appeal.

Summary of Appeal Response G.1: It is acknowledged that appellants have already submitted materials that raise the same transportation-related issues, all of which have previously been adequately addressed in the Responses to Comment document. Please refer to the appeal responses G.2 to G.22 for specific responses to specific issues.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.1	July 27, Lippe	O-MBA10L4-1 to O-MBA10L4-15	RTC Section 13.11, pp. 13.11-1 to 13.11-220	Various Transportation Issues, see appeal issues below for specific issues
G.1	July 23, Smith[a]	O-MBA10L4-16 to O-MBA10L4-38	RTC Section 13.11, pp. 13.11-1 to 13.11-220	Various Transportation Issues, see appeal issues below for specific issues
G.1	July 21, Wymer	O-MBA10L4-39a O-MBA10L4-39b	RTC TR-2b, 2d RTC p. 13.11-25, 13.11-41	Methodology, Analysis locations, Trip Generation
G.1	Nov 2, Smith FSEIR	O-MBA20L7-20 to O-MBA20L7-31	RTC various TR topics	Various Transportation Issues, see appeal issues below for specific issues
G.1	Nov 2, Wymer FSEIR	O-MBA20L7-32	LC TR-2 Exh D p. D-148	Methodology, Analysis Locations
G.1	Nov 10, Smith FSEIR Access	O-MBA27S9-7	LC TR-13 Exh D p. D-185	Emergency Vehicle Access
G.1	Nov 10, Smith FSEIR Port	O-MBA27S9-8	LC TR-17 Exh D p. D-193	Off-site Parking Mitigation
G.1	Nov 13, Smith FSEIR King St	O-MBA29L12-1	LC TR-14 Exh D p. D-189	Construction-related Transportation Impacts

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, this Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.2 Appeal Issue: The SEIR fails to assess the project's traffic impacts on the entire affected environment.

Summary of Appeal Response G.2: The SEIR's transportation analysis appropriately addresses intersections and freeway ramps in the project vicinity and along approach/departure routes most likely to be affected. The approach suggested by the appellants includes locations considerably far removed from the project site and less likely to be used by those traveling there, where the magnitude of traffic and impacts, if any, are likely to be more dispersed.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.2	July 27, Lippe, p. 1	O-MBA10L4-2	RTC-TR-2b RTC p. 13.11-25	Methodology, Analysis Locations
G.2	July 23, Smith, p. 8[a]	O-MBA10L4-20	RTC-TR-2b RTC p. 13.11-25	Methodology, Analysis Locations
G.2	July 21, Wymer, pp. 1-12	O-MBA10L4-39a	RTC TR-2b RTC p. 13.11-25	Methodology, Analysis Locations
G.2	Nov 2, Smith FSEIR pp. 5-8	O-MBA20L7-21	LC TR-1 Exh D p. D-141	Methodology, Analysis Locations
G.2	Nov 2, Wymer FSEIR	O-MBA20L7-32	LC TR-1 Exh D p. D-141	Methodology, Analysis Locations

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.3 Appeal Issue: The SEIR fails to disclose the severity of the project's impacts on intersections and freeway ramps which the project will cause to deteriorate to Level of Service (LOS) F.

Summary of Appeal Response G.3: The SEIR fully discloses all significant traffic impacts. CEQA does not require identification of degrees of "worseness" beyond identification of significant impacts, and LOS methodologies do not accurately calculate delay beyond LOS F conditions.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.3	July 27, Lippe, p. 3	O-MBA10L4-3	RTC TR-2f RTC p. 13.11-48	Methodology, Traffic LOS
G.3	July 23, Smith, p. 11[a]	O-MBA10L4-24	RTC TR-2f RTC p. 13.11-48	Methodology, Traffic LOS
G.3	July 21, Wymer, pp. 12-13	O-MBA10L4-39B	RTC TR-2d RTC p. 13.11-41	Methodology, Trip Generation
G.3	Nov 2, Smith FSEIR pp. 16-18	O-MBA20L7-24	LC TR-6 Exh D p. D-162	Methodology, Traffic LOS

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.4 Appeal Issue: The SEIR fails to identify the significance and severity of the project's impacts on intersections where the project will use parking control officers (PCOs).

Summary of Appeal Response G.4: The SEIR and RTC document details why human interventions by PCOs provide more efficient control for interactions between autos, transit, pedestrians and bicyclists. These enhancements cannot be accurately measured by LOS methodologies that are based on mechanical signal controls that operate with pre-programmed sequential patterns over the period of analysis.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.4	July 27, Lippe, p. 4	O-MBA10L4-4	RTC TR-2f RTC p. 13.11-48	Methodology, Traffic LOS
G.4	July 23, Smith, p. 11[a]	O-MBA10L4-23	RTC TR-2f RTC p. 13.11-48	Methodology, Traffic LOS
G.4	Nov 2, Smith FSEIR pp. 16-18	O-MBA20L7-24	LC TR-6 Exh D p. D-162	Methodology, Traffic LOS

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.5 Appeal Issue: The SEIR's analysis of the project's construction-related traffic congestion and delay impacts is legally flawed because it is based on invalid criteria, it fails to assess the project's cumulative construction impacts, and it defers development of mitigation measures.

Summary of Appeal Response G.5: Construction-related impacts are identified by provision of details about the duration and intensity of project construction activities, and an assessment of potential impacts on the transportation network. Cumulative construction impacts are adequately addressed by disclosure of details about other projects likely to be under construction at the same time as the project. The construction improvement measure, Improvement Measure I-TR-1: Construction Management Plan and Public Updates, is not deferred mitigation. First, it is an improvement measure that reduces an already less than significant impact and not mitigation. Second, it is specific and includes provision for construction traffic management, a construction worker parking plan, project construction updates for adjacent businesses and residents, and carpool, transit, and non-motorized modes of access for construction workers. Potential impacts of construction activities are addressed by established construction requirements utilized to manage construction projects in San Francisco.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.5	July 27, Lippe, pp. 5-7	O-MBA10L4-5	RTC TR-10 RTC p. 13.11-155	Construction-related Trans Impacts
		O-MBA10L4-6	RTC TR-10 RTC p. 13.11-155	Construction-related Trans Impacts
G.5	July 23, Smith, p. 15[a]	O-MBA10L4-29	RTC TR-10 RTC p. 13.11-155	Construction-related Transportation Impacts
G.5	Nov 2, Smith FSEIR, p. 22	O-MBA20L7-30	LC TR-14 Exh D p. D-189	Construction-related Transportation Impacts

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.6 Appeal Issue:

(a) The SEIR understates traffic and transit volumes in the p.m. peak period by using time of arrival at the event center as a proxy measurement for time of travel.

(b) The Draft SEIR only analyzes impacts of weeknight basketball games that start at 7:30 PM, not at other start times closer to the p.m. peak.

Summary of Appeal Response G.6:

(a) Time of travel for the event center events has been accurately identified through appropriate use of data for other comparable sports facilities, such as Oracle Arena in Oakland and other facilities in Houston, Phoenix, Sacramento, and New York. For basketball games in particular, the SEIR's transportation analysis assumed that twice as much travel would occur during the 5 p.m. to 6 p.m. peak hour compared to the average of arrivals obtained from actual data for the existing Barclays Center in Brooklyn, New York, which is located in a similar urban setting.

(b) Normal starting times for weekday basketball games is 7:30 p.m. Contrary to the appellants assertions that nationally televised games are rescheduled to start at 6:00 p.m., nationally televised weekday games typically feature an early game and a late game that does not deviate from the normal 7:30 p.m. start times, aside from exceptional circumstances such as playoff games.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.6	July 27, Lippe, p. 7	O-MBA10L4-7	RTC TR-2d RTC p. 13.11-41	Methodology, Trip Generation
G.6	July 23, Smith, p. 1[a]	O-MBA10L4-16	RTC TR-2d RTC p. 13.11-41	Methodology, Trip Generation
G.6	July 21, Wymer, pp. 12-13	O-MBA10L4-39B	RTC TR-2d RTC p. 13.11-41	Methodology, Trip Generation
G.6	Nov 2, Smith FSEIR pp. 13-16	O-MBA20L7-23	LC TR-4 Exh D p. D-158	Methodology, Trip Generation
G.6	July 23, Smith, p. 5[a]	O-MBA10L4-17	RTC TR-2a RTC p. 13.11-8	Methodology, Analysis Scenarios
G.6	July 21, Wymer, pp. 12-13	O-MBA10L4-39B	RTC TR-2d RTC p. 13.11-41	Methodology, Trip Generation
G.6	Nov 2, Smith FSEIR pp. 3-5	O-MBA20L7-20	LC TR-1 Exh D p. D-141	Methodology, Analysis Scenarios

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.7 Appeal Issue:

(a) The 5 percent threshold of significance for impacts at intersections and freeway ramps operating at LOS E or F violates CEQA.

(b) The year 2040 baseline for assessing the significance of the project's cumulative impacts violates CEQA and the SEIR's distant time frame and development assumptions masks significance of project's nearer term cumulative impacts.

(c) The SEIR's use of projection based approach to the project's cumulative impacts is misleading.

(d) The SEIR's cumulative analysis fails to consider and analyze the project in the context of the City's proposal to remove the northern portion of I-280 as far south as the Mariposa Street exchange.

Summary of Appeal Response G.7:

(a) CEQA does not decree any specific significance threshold standard for intersections and freeway ramps. The five percent contribution standard used in this SEIR is reasonable as it accounts for daily variations in traffic and is consistent with long-standing practices for environmental documents in San Francisco.

(b) Assessment of cumulative impacts for year 2040, consistent with the current planning horizon year of regional population and employment forecasts prepared by regional planning agencies such as ABAG and MTC, is an appropriate timeframe that conforms to longstanding practices in San Francisco for major projects. This approach provides a more credible basis for assessing transportation impacts because cumulative horizon year forecasts (currently year 2040) are regularly reviewed and refined by SFCTA and the Planning Department and therefore more accurately reflect sustained development patterns and the effects of variable economic conditions than do near-term forecasts.

(c) CEQA Guidelines Section 15130(b) explicitly authorizes use of either a projection-based or list-based approach for cumulative impacts. Use of a projection-based approach more appropriately reflects the vagaries of broader business cycles and the evolving dynamics of changes affecting cumulative conditions in San Francisco.

(d) The concept of removing a portion of I-280 north of Mariposa or 16th Streets, included in the San Francisco Planning Department’s Railyard Alternatives and I-280 Boulevard Feasibility Study, is speculative at this time, and any assessment of transportation impacts would rely upon conjecture. This concept is not a sufficiently defined project to undertake a credible analysis reflective of the unknown complexity of associated circulation changes. This ongoing planning study is described in the SEIR.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.7	July 27, Lippe, p. 11	O-MBA10L4-8	RTC TR-2i RTC p. 13.11-70	Methodology, Significance Thresholds
G.7	July 27, Lippe, p. 12	O-MBA10L4-9	RTC TR-2h RTC p. 13.11-65	Methodology, Cumulative
G.7	July 23, Smith, pp. 25-26[a]	O-MBA10L4-36	RTC TR-2h RTC p. 13.11-65	Methodology, Cumulative
G.7	Nov 2, Smith FSEIR pp. 20-22	O-MBA20L7-26	LC TR-8 Exh D p. D-169	Methodology, Cumulative
G.7	July 27, Lippe, p. 13	O-MBA10L4-10	RTC TR-2h RTC p. 13.11-65	Methodology, Cumulative
		O-MBA10L4-11	RTC TR-2h RTC p. 13.11-65	Methodology, Cumulative
		O-MBA10L4-12	RTC TR-2h RTC p. 13.11-65	Methodology, Cumulative
G.7	July 23, Smith, p. 13[a]	O-MBA20L7-26	RTC TR-2h RTC p. 13.11-65	

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.8 Appeal Issue: The SEIR's use of transit screenline and route capacities is misleading and unsupported. The use of a project specific threshold of significant impact of 100 percent of screenline capacity rather than the normal 85 percent of screenline capacity exacerbates overcrowding impacts on the regular user community.

Summary of Appeal Response G.8: Transit screenline and route capacities disclose the extent of crowding and identify needs for additional service. This methodology was appropriately used to identify supplemental transit services, is a reasonable basis for determining transit impacts, and is neither legally flawed nor misleading nor unsupported. Use of a 100 percent capacity utilization for the T Third light rail line, the 22 Fillmore bus route, and the Muni Special Event Transit Shuttles routes for a maximum attendance event is consistent with typical design standards for transportation facilities that address normal peaks rather than peak of the peak conditions. The SEIR uses Muni's 85 percent capacity standard for the downtown screenline analysis and as the basis to evaluate all non-event scenarios.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.8	July 27, Lippe, p.14	O-MBA10L4-13a	RTC TR-2g RTC p. 13.11-59	Methodology, Transit Capacity Utilization
		O-MBA10L4-13b	RTC TR-2i RTC p. 13.11-70	Methodology, Significance Thresholds

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.8	July 23, Smith, pp.5-8[a]	O-MBA10L4-18	RTC TR-2g RTC p. 13.11-59	Methodology, Transit Capacity Utilization
		O-MBA10L4-19	RTC TR-5b RTC p. 13.11-124	Transit Impacts, BART
G.8	Nov 2, Smith FSEIR pp. 18-20	O-MBA20L7-25	LC TR-7 Exh D p. D-165	Methodology, Transit Capacity Utilization

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.9 Appeal Issue: The SEIR defers the development of mitigation measures.

Summary of Appeal Response G.9: The appellants conflate mitigation measures that fully mitigate identified significant impacts, mitigation measures that necessarily reflect adaptive management to most effectively address actual conditions as they occur, and mitigation measures whose implementation is identified as uncertain because actions would need to be independently undertaken by other agencies and entities outside the City's or the project sponsor's control. Realistic presentation of mitigation measures with different characteristics does not constitute unlawful deferral.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.9	July 27, Lippe, p.16	O-MBA10L4-14	RTC TR-12d RTC p. 13.11-199	Implementation of Mit Measures
G.9	July 23, Smith, pp. 17-25[a]	O-MBA10L4-31	RTC TR-12a RTC p. 13.11-171	Traffic Mitigation Measures
		O-MBA10L4-32	RTC TR-11 RTC p. 13.11-163	Improvement Measures
		O-MBA10L4-33	RTC TR-12a RTC p. 13.11-171	Traffic Mitigation Measures
		O-MBA10L4-34	RTC TR-12c RTC p. 13.11-196	Mission Bay FSEIR Mitigation Measures
		O-MBA10L4-35	RTC TR-12b RTC p. 13.11-193	Transit Mitigation Measures

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.10 Appeal Issue: Mitigation measures listed as follows are vague and unresponsive to the impact addressed: Improvement Measure I-TR-1, Mitigation Measure M-TR-2a, Mitigation Measure M-TR-2b, Mitigation Measure M-TR-5a, and Mitigation Measure M-TR-5b.

Summary of Appeal Response G.10: Improvement Measure I-TR-1: Construction Management Plan and Public Updates is not presented as a mitigation measure, but rather as an improvement measure, and sets forth established procedures to manage construction impacts. Mitigation Measure M-TR-2a: Additional PCOs during Events sufficiently details how PCOs would be most effectively deployed. Mitigation Measure M-TR-2b: Additional Strategies to Reduce Transportation Impacts specifies a variety of adaptive TDM strategies to reduce traffic congestion in the project vicinity by providing drivers on information on traffic conditions and alternative routes, providing information on on-street and off-street parking conditions, discouraging use of on-street parking through the Residential Permit Parking program, encouraging non-auto modes through parking pricing, and enhancing regional transit access to the area. Mitigation Measures M-TR-5a and M-TR-5b identify specific additional Caltrain and North Bay ferry or bus services needed and sought to mitigate impacts while acknowledging that implementation is uncertain due to reliance on actions by other agencies. None of these measures are vague or insubstantive; each one is responsive to the identified impacts, and Mitigation Measures M-TR-2a: Additional PCOs during Events, M-TR-2b: Additional Strategies to Reduce Transportation Impacts, M-TR-5a: Additional Caltrain Service, and M-TR-5b: Additional North Bay Ferry and/or Bus Service do qualify as lawful and effective mitigation measures, while Improvement Measure I-TR-1: Construction Management Plan and Public Updates is an improvement measure that is not required to reduce significant impacts, but is further not vague as it requires preparation of a construction truck traffic management, a construction worker parking plan, project construction updates for adjacent businesses and residents, and carpool, transit, and non-motorized modes of access for construction workers.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.10	July 23, Smith, pp. 17-25[a]	O-MBA10L4-31	RTC TR-12a RTC p. 13.11-171	Traffic Mitigation Measures
		O-MBA10L4-32	RTC TR-11 RTC p. 13.11-163	Improvement Measures
		O-MBA10L4-33	RTC TR-12a RTC p. 13.11-171	Traffic Mitigation Measures
		O-MBA10L4-34	RTC TR-12c RTC p. 13.11-196	Mission Bay FSEIR Mitigation Measures
		O-MBA10L4-35	RTC TR-12b RTC p. 13.11-193	Transit Mitigation Measures

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.11 **Appeal Issue**: The SEIR characterizes mitigation measures for the project's transportation impacts as elements of the project, thereby failing to analyze and disclose the project's potentially significant impacts separate from the analysis of the feasibility and effectiveness of proposed mitigation measures.

Summary of Appeal Response G.11: There is nothing impermissible about incorporating transportation components that are within the sponsor's or the City's control into the definition of a project in order to preemptively reduce or avoid impacts. The project as thus defined cannot be built without implementation of the incorporated transportation components. Appellants appear to be demanding an unnecessary theoretical exercise to identify hypothetical impacts that would not occur based on how the project has been defined and would be implemented. Additional mitigation measures beyond transportation components incorporated into the project definition have also been appropriately identified, consistent with CEQA requirements.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.11	Nov 3, Soluri Meserve to SFMTA, pp. 1-3	O-MBA23S7-1	LC PD-1 Exh D p. D-107	Project description assumptions
G.11	July 26, Smith at FSEIR, Vol 6 pp. Com-135-139	O-MBA10L4-31	RTC TR-12a RTC p. 13.11-171	Traffic Mitigation Measures
		O-MBA10L4-32	RTC TR-11 RTC p. 13.11-163	Improvement measures
		O-MBA10L4-33	RTC TR-12a RTC p. 13.11-171	Traffic Mitigation Measures
		O-MBA10L4-34	RTC TR-12b, 12c RTC p. 13.11-193, 13.11-196	Transit and Mission Bay FSEIR Mitigation Measures
		O-MBA10L4-35	RTC TR-12b RTC p. 13.11-193	Transit Mitigation Measures
G.11	July 27, Lippe at FSEIR, p. Com-126	O-MBA10L4-15	RTC TR-2a RTC p. 13.11-8	Methodology, Analysis Scenarios

G.12 **Appeal Issue**: By characterizing mitigation measures for the project's transportation impacts as elements or components of the project, the SEIR fails to set forth enforceable mitigation.

Summary of Appeal Response G.12: Transportation components incorporated into the project definition would be enforceable by the City because project implementation is dependent upon implementation of everything incorporated into the definition of the project, as required by the Mitigation Monitoring and Reporting Program for the project. Mitigation measures are enforceable as required in the approval actions by the lead agency and other responsible agencies.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.12	Nov 3, Soluri Meserve to SFMTA, pp. 1-3	O-MBA23S7-1	LC PD-1 Exh D p. D-107	Project description assumptions
G.12	July 26, Smith at FSEIR, Vol 6 pp. Com-135-139	O-MBA10L4-31	RTC TR-12a RTC p. 13.11-171	Traffic Mitigation Measures
		O-MBA10L4-32	RTC TR-11 RTC p. 13.11-163	Improvement measures
		O-MBA10L4-33	RTC TR-12a RTC p. 13.11-171	Traffic Mitigation Measures
		O-MBA10L4-34	RTC TR-12b, 12c RTC p. 13.11-193, 13.11-196	Transit and Mission Bay FSEIR Mitigation Measures
		O-MBA10L4-35	RTC TR-12b RTC p. 13.11-193	Transit Mitigation Measures
G.12	July 27, Lippe at FSEIR, p. Com-126	O-MBA10L4-15	RTC TR-2a RTC p. 13.11-8	Methodology, Analysis Scenarios

G.13 **Appeal Issue**: The SEIR relies on the project's contribution to a fair-share fee program to mitigate the project's transportation impacts without disclosing the required information about such mitigation.

Summary of Appeal Response G.13: The fiscal analysis comprehensively identifies funding from several sources to support implementation of transportation mitigation measures, consistent with a fair-share fee program.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.13	Nov 3, Soluri Meserve to SFMTA, pp. 1-4	O-MBA23S7-1	LC PD-1 Exh D p. D-107	Project description assumptions
G.13	Nov 2, Smith, pp. 2-3 Urban Decay	O-MBA20L7-20	LC TR-1 Exh D p. D-141	Methodology, Analysis Scenarios

G.14 **Appeal Issue**: The transit analysis understates impacts because it relies on stale transit baseline data.

Summary of Appeal Response G.14: The Draft SEIR included the most current transit baseline data for the Muni screenlines available at the time of publication, and this data was updated in the Responses to Comments document to include more recent data that became available subsequent to publication. The transit impact analysis in the SEIR included the use of BART's April 2015 data. No changes regarding significant transit impacts were identified based on the updated transit screenline data presented in the Responses to Comments.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.14	July 23, Smith, p.9[a]	O-MBA10L4-21	RTC TR-2c RTC p. 13.11-31	Methodology, Baseline Conditions
G.14	Nov 2, Smith FSEIR pp. 9-13	O-MBA20L7-22	LC TR-3 Exh D p. D-153	Methodology, Baseline Conditions

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.15 Appeal Issue: The traffic analysis understates impacts because it relies on stale traffic baseline data.

Summary of Appeal Response G.15: The existing conditions used for the traffic impact analysis are based on traffic counts conducted in 2013 and 2014, which were adjusted to reflect full occupancy and operation of the UCSF Medical Center Phase 1 and Public Safety Building projects which were under construction when the traffic counts were conducted. Spot-check counts at key intersections were conducted in April 2015 (following opening and operation of these two facilities) and compared to the adjusted volumes used in the analysis. The adjusted volumes used in the analysis were similar to or slightly higher than those collected in the field in April 2015, and therefore adequately reflect baseline conditions.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.15	July 23, Smith, p.10[a]	O-MBA10L4-22	RTC TR-2c RTC p. 13.11-31	Methodology, Baseline Conditions
G.15	Nov 2, Smith FSEIR pp. 9-13	O-MBA20L7-22	LC TR-3 Exh D p. D-153	Methodology, Baseline Conditions

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.16 Appeal Issue: The SEIR's discussion of transportation impacts is incomplete.

Summary of Appeal Response G.16: Appellants' vague assertion that the SEIR's discussion of transportation impacts is incomplete is related to the number of analysis scenarios included in the SEIR. Based on the reference to the Smith letter dated November 2, 2015, the purported deficiency may be related to appellants' speculative presumption that implementation of the Muni Special Event Transit Services Plan would not be maintained despite the fact that the SFMTA Director of Transportation wrote a letter supporting these expenditures, the SFMTA Board of Director approved the expenditure plan for this service, and the reserve fund is pending before the Board of Supervisors. The SEIR also relies on a number of mitigation measures to address the possibility that the transit service plan is not implemented.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.16	July 27, Lippe, p.18	O-MBA10L4-15	RTC TR-2a RTC p. 13.11-8	Methodology, Analysis Scenario
G.16	Nov 2, Smith FSEIR pp. 1-3	O-MBA20L7-20	LC TR-1 Exh D p. D-141	Methodology, Analysis Scenario

G.17 Appeal Issue: Complex interrelated issues are not addressed in the SEIR.

Summary of Appeal Response G.17: The appellants' claim that "complex interrelated issues" were not addressed in the SEIR are related to the transfers between BART and Muni, and claims that, with implementation of the Central Subway, the transfer would be less attractive than at present, and cause more attendees to use rideshare or taxis, instead of transit. These issues were considered in the transit analysis, and the Responses to Comments document clarifies the transfers between the Union Square/Market Street Central Subway station and the Powell Street BART/Muni station. Additional analysis is not required.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.17	July 23, Smith, p.12[a]	O-MBA10L4-25	RTC TR-5a RTC p. 13.11-120	Transit Impacts, Muni

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.18 Appeal Issue: There is no evidence the Draft SEIR considered the impacts of the at-grade rail crossing of 16th Street on intersection LOS at the intersection of 16th and 3rd and 16th and 7th Streets.

Summary of Appeal Response G.18: Assessment of the effects of at-grade rail crossings at the intersection of Seventh/Mississippi/16th was included in the Draft SEIR as well as in the Responses to Comments document. Significant traffic impacts at this intersection were identified for the various existing plus project scenarios and 2040 cumulative conditions.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.18	July 23, Smith, p.14[a]	O-MBA10L4-27	RTC TR-2f RTC p. 13.11-48	Methodology, Traffic LOS

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4). The correct date of the letter is presented in the table, above.

G.19 Appeal Issue: The project's truck loading and truck staging provisions are inadequate.

Summary of Appeal Response G.19: The truck turning templates were prepared for the Major Phase Application that was submitted for project approval to OCII. Due to the large-scale format of the truck turning overlays, they were inadvertently omitted from inclusion in the RTC document. The figures demonstrate that the on-site loading spaces were designed to accommodate trucks of varying size and would be accessible even if the larger spaces are occupied, and do not provide a different assessment than was provided in the SEIR Impact TR-8 on SEIR pp. 5.2-161 – 5.2-166. The figures are included in Exhibit D.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.19	July 23, Smith, p.14[a]	O-MBA10L4-28	RTC TR-8 RTC p. 13.11-141	Loading Impacts
G.19	Nov 2, Smith FSEIR p. 22	O-MBA20L7-28	LC TR-12 Exh D p. D-175	Loading Impacts

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.20 Appeal Issue: The SEIR concludes without foundation that the project would not have an adverse impact on emergency access to UCSF hospitals.

Summary of Appeal Response G.20: Appellants repeat prior assertions about the inadequacy of emergency vehicle access. Further, Appellant's claims do not recognize the substantial specific enhancements that have been developed since publication of the Draft SEIR; UCSF and other such emergency service providers have found emergency access to be adequate. This issue was adequately analyzed in the Final SEIR.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.20	July 23, Smith, p.16[a]	O-MBA10L4-30	RTC TR-9 RTC p. 13.11-148	Emergency Vehicle Access Impacts
G.20	Nov 2, Smith FSEIR p. 22	O-MBA20L7-29	LC TR-13 Exh D p. D-185	Emergency Vehicle Access
G.20	Nov 10, Smith FSEIR Access	O-MBA27S9-7	LC TR-13 Exh D p. D-185	Emergency Vehicle Access

[a] In the appeal letter, the Appellant mistakenly references a July 23, 2015 letter from Dan Smith. However, the Appellant is actually referring to a Dan Smith authored letter dated July 26, 2015 (coded in this appeal response as O-MBA10L4).

G.21 Appeal Issue: New information since publication of the Draft SEIR requires recirculation.

Summary of Appeal Response G.21: Response TR-5 in the RTC document does not provide a station level analysis for BART stations in San Francisco likely to be used by event attendees, but instead provides information as to why the preparation of a station-level analysis was not necessary and was therefore not conducted as part of the transportation analysis for the SEIR. The response also provides clarification regarding BART ridership information, and does not include any new information or analysis, or result in any change to analysis or conclusions presented in the SEIR. Recirculation of the SEIR is therefore not required pursuant to CEQA Guidelines Section 15088.5.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.21	Nov 2, Smith FSEIR p. 22	O-MBA20L7-27	LC TR-11 Exh D p. D-174	Transit Impacts, BART

G.22 Appeal Issue: Changes to the project since publication of the Draft SEIR require recirculation, including construction on King Street for six months and Third Street for fourteen months, which will exacerbate construction phase impacts on traffic.

Summary of Appeal Response G.22: Temporary transportation impacts that could occur during construction of traction power (electrical) upgrades to the Muni T Third and Central Subway light rail lines would not result in new significant impacts or require additional mitigation measures that were not previously disclosed in the Final SEIR and therefore do not require recirculation of the Final SEIR, because: (1) the potential temporary transportation impacts that could occur during construction of the electrical upgrades would not be significant, and (2) the FSEIR includes an assessment of the effects of potential transportation impacts during project construction, including construction of the proposed T Third center platform and other Muni system improvements, and (3) the construction-related impacts from the work on King Street and Third Street would be same kind of impacts as those that the FSEIR already disclosed related to the proposed T Third center platform and other Muni system improvements.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
G.22	Nov 13, Smith FSEIR King Street	O-MBA29L12-1	LC TR-14 Exh D p. D-189	Construction-related Transportation Impacts

TOPIC H: HYDROLOGY, WATER QUALITY, AND BIOLOGICAL RESOURCES

H.1 Appeal Issue: Appellant states that the documents cited below set grounds for an appeal.

Summary of Appeal Response H.1: This statement references documents that the appellant has previously submitted to OCII, but does not restate any of the specific claims contained in those documents. As discussed below, OCII responded to all of the claims contained in the referenced documents concerning hydrology, water quality, and biological resources prior to certification of the FSEIR or in Exhibit D of this Appeal Response packet.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
H.1	July 24, Lippe	O-MBA11L5-7 O-MBA11L5-14 O-MBA11L5-15	RTC HYD-2 RTC, p. 13.21-3	Stormwater runoff during construction and operation
H.1	July 24, Lippe	O-MBA11L5-3	RTC HYD-3 RTC, p. 13.21-14	Water quality during interim period
H.1	July 24, Lippe	O-MBA11L5-5	RTC HYD-4 RTC, p. 13.21-17	Changes in effluent water quality
H.1	July 24, Lippe	O-MBA11L5-4 O-MBA11L5-6 O-MBA11L5-8 O-MBA11L5-9	RTC HYD-5 RTC, p. 13.21-21	Wet weather discharges
H.1	July 24, Lippe	O-MBA11L5-17	RTC HYD-6 RTC, p. 13.21-30	Flooding as a result of stormwater runoff
H.1	July 24, Lippe	O-MBA11 L5-18	RTC HYD-7 RTC, p. 13.21-33	Flooding as a result of sea level rise
H.1	July 21 Hageman (Exhibit 1 to July 24 Lippe)	O-MBA11 L5-19	RTC HYD-2 RTC, p. 13.21-3	Stormwater runoff during construction and operation
H.1	July 21 Ringleberg (Exhibit 2 to July 24, Lippe)	O-MBA11 L5-24 O-MBA11 L 5-33	RTC HYD-2 RTC, p. 13.21-3	Stormwater runoff during construction and operation – biological impacts or runoff
H.1	July 21 Ringleberg (Exhibit 2 to July 24, Lippe)	O-MBA11L5-36	RTC HYD-5 RTC, p. 13.21-21	Stormwater runoff during construction and operation – biological impacts or runoff
H.1	July 22 Cline (Exhibit B to July 26 Soluri Meserve)	O-MBA7S2-42 through -59	RTC HAZ-1 RTC, p. 13.22-1 RTC HAZ-3 RTC, p. 13.22-15 RTC HAZ-4 RTC, p. 13.22-29 RTC HAZ-5 RTC, p. 13.22-32 RTC HAZ-6 RTC, p. 13.22-33 RTC HAZ-7 RTC, p. 13.22-34	Reliance on 1998 FSEIR Site contamination Naturally occurring asbestos Reuse of excavated soil Disposal of treated wood Lead agency for school evaluations
H.1	July 26 Soluri Meserve	O-MBA7S2-27	RTC HYD-6 RTC, p. 13.21-30	Flooding as a result of sea level rise
H.1	July 26 Soluri Meserve	O-MBA7S2-19 O-MBA7S2-22	RTC HYD-8 RTC, p. 13.21-35	Tsunami risks

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
H.1	Nov 2, Lippe letter [a]	O-MBA20L7-6	LC HYD-1 Exh D, p. D-313	NPDES Permit compliance
H.1	Nov 2 Hagemen (Exhibit H to Nov 2 Lippe)	O-MBA20L7-33	LC HYD-3 Exh D, p. D-324	Stormwater runoff during construction and operation
H.1	Nov 2 BSK (Exhibit I to Nov 2 Lippe)	O-MBA20L7-35	LC HYD-4 Exh D, p. D-328	Water quality during interim period
H.1	Nov 2 BSK (Exhibit I to Nov 2 Lippe)	O-MBA20L7-36	LC HYD-1 Exh D, p. D-313	NPDES Permit compliance
H.1	Nov 2 Ringelberg (Exhibit J to Nov 2 Lippe)	O-MBA20L7-43	LC HYD-5 Exh D, p. D-330	Water quality regulatory framework
H.1	Nov 2 Ringelberg (Exhibit J to Nov 2 Lippe)	O-MBA20L7-47	LC HYD-3 Exh D, p. D-324	Stormwater runoff during construction and operation, biological effects
H.1	July 16 BSK Wetland (Exhibit K to Nov 2 Lippe)	O-MBA20L7-48	LC BIO-1 Exh D, p. D-291	Wetlands
H.1	Oct 29 BSK Wetland (Exhibit L Nov 2 Lippe)	O-MBA20L7-49	LC BIO-1 Exh D, p. D-291	Wetlands

[a] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

H.2 Appeal Issue: Appellant states that the project is not sufficient as an informational document with respect to the project's wastewater treatment infrastructure impacts and the response to Comment UTIL-3 is inadequate.

Summary of Appeal Response H.2: Response UTIL-3 is adequate in that it explains information discussed in Impact C-UT-2 of the SEIR. Response UTIL-3 and Impact C-UT-2 explain that the wastewater flow from the project would not cause the Mariposa Pump Station to exceed its pumping capacity and would not require the construction of new or expanded wastewater treatment facilities. These two discussions further explain that when wastewater flow from this project is considered with existing and reasonably foreseeable total future wastewater flows from all identified reasonably foreseeably future development in the area, including the build-out of the Mission Bay Redevelopment Plan and UCSF Long Range Development Plan, and other area development, the SFPUC anticipates that it will need to replace or upgrade the Mariposa Pump Station. However, the SFPUC has not yet identified a timetable for completing these long term improvements, and has not developed specified plans or designs for construction of these yet-to-be-designed improvements. Any improvements that the SFPUC determines in the future to be needed to address these future cumulative wastewater flows are not part of the project and CEQA review will appropriately be addressed by the SFPUC once it determines the timetable for needed improvements and the nature of the improvements. But such improvements are not part of this project. The FSEIR adequately discusses

impacts associated with wastewater flows because it fully discusses the project impacts, the project's contribution to cumulative impacts, and, draws reasoned conclusions about the nature of impacts that could result from whatever future facility improvements the SFPUC ultimately determines are needed.

Response UTIL-3 cites case law that supports the approach to analysis used in Impact C-UT-2.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
H.2	July 26 Lippe, pp. 1-4[a]	O-MBA11L5-2	RTC UTIL-3 RTC, p. 13.17-7	Environmental effects of new facilities
H.2	July 26 Lippe, pp. 1-47[a]	O-MBA11L5-3	RTC HYD-3 RTC, p. 13.21-14 RTC UTIL-6 RTC, p. 13.17-17	Water quality during interim period Description of interim improvements
H.2	Nov 2 Lippe, pp. 8-10[b]	O-MBA20L7-6	LC UTIL-1 Exh D, p. D-272	Cumulative impacts on wastewater facilities

[a] In the appeal letter, the Appellant mistakenly references a July 26 letter from Lippe. However, this Appellant is actually referring to a Lippe letter dated July 24, 2015 (coded in this appeal response as O-MBA11L5).

[b] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

H.3 Appeal Issue: Appellant states that The DSEIR is not sufficient as an informational document with respect to the Project's contaminated wastewater (i.e. combined sewage and stormwater) impacts on San Francisco Bay water quality or biological resources including from inadequately treated sewage and toxic chemicals (e.g., PCB's and metals), and the FSEIR's Response to these comments (HYD-3 – HYD-6) are inadequate.

Summary of Appeal Response H.3: Regarding wastewater, the Southeast Water Pollution Control Plant has sufficient capacity to serve the proposed project. The proposed project would not cause violations of the City's NPDES permit conditions related to combined sewer discharges, therefore the project would not result in significant project-level or cumulative impacts on water quality or biological resources due to combined sewer discharges.

Regarding stormwater, the project would not result in the discharges of contaminated soil from the site in stormwater flows to the Bay during construction because, as discussed in Impact HY-1 of the Initial Study, construction activities would comply with the Construction General Stormwater Permit issued by the State Water Resources Control Board. This permit specifies minimum best management practices (BMPs) to be implemented to ensure that stormwater discharges and authorized nonstormwater discharges do not contain pollutants that could cause or contribute to an exceedance of any applicable water quality objective or water quality standards in the Bay.

The project would not result in discharges of contaminated soil from the site in stormwater flows to the Bay once the project is constructed because the proposed project includes excavation of soil to a minimum depth of 12 feet throughout the project site, and off‐site disposal of all excavated soil. Clean engineered backfill would be used where needed. Once the project is constructed, the site would be occupied by buildings or paved. None of the existing soil on the site would be exposed at grade and all landscaped areas on the site would be above structures; clean soil would be brought in for all landscaped areas on the project site. This would preclude stormwater contact with contaminated soil once the site is developed.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
H.3	July 26 Lippe, pp. 4-10[a]	O-MBA11L5-7	RTC HYD-2 RTC, p. 13.21-3	Stormwater runoff during construction and operation, biological effects
H.3	July 26 Lippe, pp. 4-10[a]	O-MBA11L5-5	RTC HYD-4 RTC, p. 13.21-17	Changes in effluent water quality
H.3	July 26 Lippe, pp. 4-10[a]	O-MBA11L5-4 O-MBA11L5-6 O-MBA11L5-8 O-MBA11L5-9	RTC HYD-5 RTC, p. 13.21-21	Wet weather discharges
H.3	Nov 2 Lippe, pp. 10-12[b]	O-MBA20L7-7	LC HYD-1 Exh D, p. D-313	NPDES Permit compliance
H.3	July 21 Hageman (Exhibit 1 to July 24 Lippe)	O-MBA11L5-19	RTC HYD-2 RTC, p. 13.21-3	Stormwater runoff during construction and operation
H.3	Nov 2 Hageman[c] (Exhibit H to Nov 2 Lippe)	O-MBA20L7-33	LC HYD-3 Exh D, p. D-324	Stormwater runoff during construction and operation
H.3	Nov 2 BSK (Exhibit I to Nov 2 Lippe)	O-MBA20L7-35	LC HYD-4 Exh D, p. D-328	Water quality during interim period
H.3	Nov 2 BSK (Exhibit I to Nov 2 Lippe)	O-MBA20L7-36	LC HYD-1 Exh D, p. D-313	NPDES Permit compliance
H.3	July 22 Cline, pp 1-15 (Exhibit B to July 26 Soluri Meserve)	O-MBA7S2-42 through -59	RTC HAZ-1 RTC, p. 13.22-1	Reliance on 1998 FSEIR
			RTC HAZ-3 RTC, p. 13.22-15	Site contamination
			RTC HAZ-4 RTC, p. 13.22-29	Naturally occurring asbestos
			RTC HAZ-5 RTC, p. 13.22-32	Reuse of excavated soil
			RTC HAZ-6 RTC, p. 13.22-33	Disposal of treated wood
			RTC HAZ-7 RTC, p. 13.22-34	Lead agency for school evaluations

[a] In the appeal letter, the Appellant mistakenly references a July 26 letter from Lippe. However, the Appellant is actually referring to a Lippe letter dated July 24, 2015 (coded in this appeal response as O-MBA11L5).

[b] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

[c] In the appeal letter, the Appellant mistakenly references a November 2 letter from Hageman. However, the Appellant is actually referring to a Hageman authored letter dated November 1, 2015 (coded in this appeal response as O-MBA20L7).

H.4 Appeal Issue: Appellant states that the DSEIR is not sufficient as an informational document with respect to project impacts on biological resources, including wetlands and wildlife.

Summary of Appeal Response H.4: The water-filled depression on the project site was formed as a result of excavation in dry land for site remediation purposes and does not provide any of the physical functions and services associated with functional wetland ecology. The project would have no effect on federally protected wetlands because the excavations subject to ponding on the site are due to construction-related activities and are not jurisdictional under the Clean Water Act. The project is not subject to federal consistency review under the Coastal Zone Management Act because it does not require any federal approvals and because it would not affect coastal resources.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
H.4	July 26 Lippe, pp. 11-15[a]	O-MBA11L5-12	RTC BIO-1 RTC, p. 13.19-1	General approach to analysis
H.4	July 26 Lippe, pp. 11-15[a]	O-MBA11L5-13	RTC BIO-2 RTC, p. 13.19-10	Setting
H.4	July 26 Lippe, pp. 11-15[a]	O-MBA11L5-13	RTC BIO-6 RTC, p. 13.19-40	Avian impacts
H.4	July 26 Lippe, pp. 11-15 [a]	O-MBA11L5-14 O-MBA11L5-15	RTC BIO-4 RTC, p. 13.19-16	Sensitive natural communities
H.4	July 26 Lippe, pp. 11-15 [a]	O-MBA11L5-16	RTC BIO-5 RTC, p. 13.19-25	Wetlands
H.4	July 16 BSK Wetlands (Exhibit K to Nov 2 Lippe)	O-MBA20L7-28	LC BIO-1 Exh D, p. D-291	Wetlands
H.4	July 21 Ringelberg (Exhibit 2 to July 24 Lippe)	O-MBA11L5-20	RTC BIO-1 RTC, p. 13.19-1	Approach to analysis
H.4	July 21 Ringelberg (Exhibit 2 to July 24 Lippe)	O-MBA11L5-21	RTC BIO-2 RTC, p. 13.19-10	Setting
H.4	July 21 Ringelberg (Exhibit 2 to July 24 Lippe)	O-MBA11L5-22	RTC BIO-3 RTC, p. 13.19-12	Special-status species
H.5	July 21 Ringelberg (Exhibit 2 to July 24 Lippe)	O-MBA11L5-25 O-MBA11L5-26 O-MBA11L5-28 O-MBA11L5-29 O-MBA11L5-30 O-MBA11L5-31 O-MBA11L5-34 O-MBA11L5-35	RTC BIO-5 RTC, p. 13.19-25	Wetlands
H.5	July 21 Ringelberg (Exhibit 2 to 7/24/15 letter from Lippe)	O-MBA11L5-23 O-MBA11L5-25 O-MBA11L5-34	RTC BIO-6 RTC, p. 13.19-40	Avian impacts
H.4	July 21 Ringelberg (Exhibit 2 to 7/24/15 letter from Lippe)	O-MBA11L5-24 O-MBA11L5-32 O-MBA11L5-33	RTC BIO-4 RTC, p. 13.19-16	Sensitive natural communities

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
H.4	Oct 29 BSK Wetland(Exhibit L to Nov 2 Lippe)	O-MBA20L7-9	LC BIO-1 Exh D, p. D-291	Wetlands
H.4	Nov 2 Lippe, pp. 10-15[b]	O-MBA20L7-8	LC BIO-1 Exh D, p. D-291	Wetlands
H.4	Nov 2 BSK (Exhibit J to Nov 2 Lippe)	O-MBA20L7-39	LC BIO-2 Exh D, p. D-294	Biological resources setting
H.4	Nov 2 BSK (Exhibit J to Nov 2 Lippe)	O-MBA20L7-40 O-MBA20L7-46	LC BIO-3 Exh D, p. D-299	Special-status species and sensitive natural communities
H.4	Nov 2 BSK (Exhibit J to Nov 2 Lippe)	O-MBA20L7-41 O-MBA20L7-44	LC BIO-1 Exh D, p. D-291	Wetlands
H.4	Nov 2 BSK (Exhibit J to Nov 2 Lippe)	O-MBA20L7-42 O-MBA20L7-45	LC BIO-4 Exh D, p. D-302	Avian impacts
H.4	Nov 2 Ringelberg (Exhibit J to Nov 2 Lippe)	O-MBA20L7-38	LC ERP-6 Exh D, p. D-98	General Comments on Environmental Topics
		O-MBA20L7-39	LC BIO-2 Exh D, p. D-294	Biological resources setting
		O-MBA20L7-40	LC BIO-3 Exh D, p. D-299	Special-status species and sensitive natural communities
		O-MBA20L7-41	LC BIO-1 Exh D, p. D-291	Wetlands
		O-MBA20L7-42	LC BIO-4 Exh D, p. D-302	Avian impacts
		O-MBA20L7-43	LC HYD-5 Exh D, p. D-330	Water quality regulatory framework
		O-MBA20L7-44	LC BIO-1 Exh D, p. D-291	Wetlands
		O-MBA20L7-45	LC BIO-4 Exh D, p. D-302	Avian impacts
		O-MBA20L7-46	LC BIO-3 Exh D, p. D-299	Special-status species and sensitive natural communities
		O-MBA20L7-47	LC HYD-3 Exh D, p. D-324	Stormwater runoff during construction and operation
H.4	Oct 7 Soluri Meserve	O-MBA13S4-1	RTC BIO-5 RTC, p. 13.19-25	Wetlands

[a] In the appeal letter, the Appellant mistakenly references a July 26 letter from Lippe. However, the Appellant is actually referring to a Lippe letter dated July 24, 2015 (coded in this appeal response as O-MBA11L5).

[b] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015.

H.5 Appeal Issue: Appellant states that the SEIR fails to include all feasible mitigation measures to lessen or mitigate impacts to state and/or federal jurisdictional wetland features.

Summary of Appeal Response H.5: The project would not result in significant impacts on wetland habitat; therefore no mitigation is required.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
H.5	July 26 Lippe, pp. 11-15[a]	O-MBA11L5-12	RTC BIO-1 RTC, p. 13.19-1	General approach to analysis
H.5	July 26 Lippe, pp. 11-15[a]	O-MBA11L5-13	RTC BIO-2 RTC, p. 13.19-10	Setting
H.5	July 26 Lippe, pp. 11-15[a]	O-MBA11L5-13	RTC BIO-6 RTC, p. 13.19-40	Avian impacts
H.5	July 26 Lippe, pp. 11-15[a]	O-MBA11L5-14 O-MBA11L5-15	RTC BIO-4 RTC, p. 13.19-16	Sensitive natural communities
H.5	July 26 Lippe, pp. 11-15[a]	O-MBA11L5-16	RTC BIO-5 RTC, p. 13.19-25	Wetlands
H.5	July 16 BSK Wetlands (Exhibit K to Nov 2 Lippe)	O-MBA20L7-28	LC BIO-1 Exh D, p. D-291	Wetlands
H.5	July 21 Ringelberg (Exhibit 2 to July 24 Lippe)	O-MBA11L5-20	RTC BIO-1 RTC, p. 13.19-1	Approach to analysis
H.5	July 21 Ringelberg (Exhibit 2 to July 24 Lippe)	O-MBA11L5-21	RTC BIO-2 RTC, p. 13.19-10	Setting
H.5	July 21 Ringelberg (Exhibit 2 to July 24 Lippe)	O-MBA11L5-22	RTC BIO-3 RTC, p. 13.19-12	Special-status species
H.5	July 21 Ringelberg (Exhibit 2 to July 24 Lippe)	O-MBA11L5-25 O-MBA11L5-26 O-MBA11L5-28 O-MBA11L5-29 O-MBA11L5-30 O-MBA11L5-31 O-MBA11L5-34 O-MBA11L5-35	RTC BIO-5 RTC, p. 13.19-25	Wetlands
H.5	July 21 Ringelberg (Exhibit 2 to July 24 Lippe)	O-MBA11L5-23 O-MBA11L5-25 O-MBA11L5-34	RTC BIO-6 RTC, p. 13.19-40	Avian impacts
H.5	July 21 Ringelberg (Exhibit 2 to July 24 Lippe)	O-MBA11L5-24 O-MBA11L5-32 O-MBA11L5-33	RTC BIO-4 RTC, p. 13.19-16	Sensitive natural communities
H.5	Oct 29 BSK Wetland (Exhibit L to Nov 2 Lippe)	O-MBA20L7-9	LC BIO-1 Exh D, p. D-291	Wetlands
H.5	Nov 2 Lippe, pp. 12-13[b]	O-MBA20L7-8	LC BIO-1 Exh D, p. 291	Wetlands
H.5	Nov 2 BSK (Exhibit J to Nov 2 Lippe)	O-MBA20L7-39	LC BIO-2 Exh D, p. D-294	Biological resources setting
H.5	Nov 2 BSK (Exhibit J to Nov 2 Lippe)	O-MBA20L7-40 O-MBA20L7-46	LC BIO-3 Exh D, p. D-299	Special-status species and sensitive natural communities
H.5	Nov 2 BSK (Exhibit J to Nov 2 Lippe)	O-MBA20L7-41 O-MBA20L7-44	LC BIO-1 Exh D, p. D-291	Wetlands
H.5	Nov 2 BSK (Exhibit J to Nov 2 Lippe)	O-MBA20L7-42 O-MBA20L7-45	LC BIO-4 Exh D, p. D-302	Avian impacts

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
H.5	Nov 2 Ringelberg (Exhibit J to Nov 2 Lippe)	This is the same letter as 11/2/15 letter from BSK, above		

[a] In the appeal letter, the Appellant mistakenly references a July 26 letter from Lippe. However, the Appellant is actually referring to a Lippe letter dated July 24, 2015 (coded in this appeal response as O-MBA11L5).

[b] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

H.6 Appeal Issue: The SEIR fails to include all feasible mitigation to lessen or mitigate the significant and unavoidable cumulative impact associated with exceeding of the capacity of the Mariposa Pump Station.

Summary of Appeal Response H.6: As discussed in Impact UT-5 of the SEIR, the project wastewater flows would not cause the Mariposa Pump Station to exceed its pumping capacity. However, the SFPUC anticipates that it would need to replace or upgrade the Mariposa Pump Station to accommodate future cumulative flows, including those from build-out of the Mission Bay Redevelopment Plan and UCSF Long Range Development Plan. Needed improvements and the timing of these improvements to the pump station will be determined by the SFPUC in the future in consideration of its overall wastewater control system and are outside of the project sponsor's control. Further, because the exact nature of the improvements is not designed, it cannot be said with certainty whether impacts associated with the construction of any such improvements will be less than significant. Thus, there are no feasible mitigation measures within the control of the project sponsor to mitigate the cumulative effects related to exceeding the capacity of the Mariposa Pump Station.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
H.6	July 26 Lippe, pp. 1-10[a]	O-MBA11L5-2 O-MBA11L5-10	RTC UTIL-3 RTC, p. 13.17-7	Environmental effects of new facilities
H.6	July 26Lippe, pp. 1-10[a]	O-MBA11L5-3	RTC UTIL-6 RTC, p. 13.17-17 RTC HYD-3 RTC, p. 13.21-14	Description of interim improvements
H.6	Nov 2 Lippe, pp. 8-12[b]	O-MBA20L7-6	LC UTIL-1 Exh D, p. D-272	Cumulative impacts on wastewater facilities
H.6	Nov 2 BSK (Exhibit I to Nov 2 Lippe)	O-MBA20L7-35	LC HYD-4 Exh D, p. D-328	Water quality, interim wastewater system improvements
H.6	Nov 2 BSK (Exhibit I to Nov 2 Lippe)	O-MBA20L7-36	LC HYD-1 Exh D, p. D-313	NPDES permit compliance

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
H.6	Nov 2 BSK (Exhibit I Nov 2 Lippe)	O-MBA20L7-37	LC UTIL-2 Exh D, p. D-276	Description of interim improvements
H.6	Nov 2 Ringelberg (Exhibit I to Nov 2 Lippe)	This is the same letter as Nov 2 BSK, above		

[a] In the appeal letter, the Appellant mistakenly references a July 26 letter from Lippe. However, the Appellant is actually referring to a Lippe letter dated July 24, 2015 (coded in this appeal response as O-MBA11L5).

[b] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

H.7 Appeal Issue: Appellant states that the DSEIR is not sufficient as an informational document with respect to the Project's flooding risk and inundation impacts.

Summary of Appeal Response H.7: As discussed in Impact HY-7 of the SEIR, the project site is not within the existing 100-year flood zone and would not be subject to future flooding as a result of sea level rise in 2050 based on the projected amount of sea-level rise. Temporary flooding could occur by 2100 as a result of 100-year flooding in combination with sea level rise. However, the project includes flood resilient features consistent with San Francisco's Floodplain Management Ordinance for construction in flood zones. Below grade structures, including the parking garage and practice courts would be vulnerable to temporary inundation, but feasible flood proofing measures, such as installation of sand bags or flood barriers at the parking garage entrances would prevent impacts from flooding under this scenario if necessary. Flooding as a result of stormwater runoff would not occur because, while the storm sewer system is designed to accommodate the five-year storm in accordance with the Mission Bay and San Francisco subdivision regulations, the corridors used to convey overland stormwater flows in excess of the five‐year storm are designed to accommodate 100‐year flood flows, also in accordance with the subdivision regulations.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
H.7	July 26 Lippe, pp. 15-16[a]	O-MBA11L5-17	RTC HYD-6 RTC, p. 13.21-30	Flooding as a result of stormwater runoff
H.7	July 26 Lippe, pp. 15-16[a]	O-MBA11L5-18	RTC HYD-7 RTC, p. 13.21-33	Flooding as a result of sea level rise

[a] In the appeal letter, the Appellant mistakenly references a July 26 letter from Lippe. However, the Appellant is actually referring to a Lippe letter dated July 24, 2015 (coded in this appeal response as O-MBA11L5).

TOPIC I: NOISE

I.1 **Appeal Issue**: Appellant does not describe any specific issues and only lists the documents listed below as the grounds for appeal.

Summary of Appeal Response I.1: All comment letters and supporting documentation previously submitted to OCII have been reviewed and substantive comments have been responded to in writing in the Response to Comments document or in Exhibit D of this appeal response. Refer to appeal responses I.2 to I.4 for responses to specific issues.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
I.1	July 25, Lippe	O-MBA9L3-1 to O-MBA9L3-9	RTC Section 13.12, pp. 13.12-1 to 13.12-29	Various Noise Issues, see appeal issues below for specific issues
I.1	July 24, Hubach[a]	O-MBA9L3-6 to O-MBA9L3-9	RTC Section 13.12, pp. 13.12-1 to 13.12-29	Various Noise Issues
I.1	Nov 2, Lippe[b]	O-MBA20L7-9	LC NOI-1 Exh D, p. D-197	Noise significance thresholds
I.1	Nov 2, Hubach	O-MBA20L7-50 to O-MBA20L7-52	LC NOI-1 and LC NOI-2 Exh D, p. D-197	Noise significance thresholds, and Noise impacts of project refinements

[a] In the appeal letter, the Appellant mistakenly references a July 24 letter from Hubach. However, the Appellant is actually referring to a Hubach letter dated July 22, 2015 (coded in this appeal response as O-MBA9L3).

[b] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

I.2 **Appeal Issue**: The appellant questions use of the San Francisco Noise Ordinance in assessing the significance of project-generated noise. The RTC document responses regarding use of the San Francisco Police Code as thresholds of significance is inconsistent with CEQA.

Summary of Appeal Response I.2: The noise analyses of the SEIR apply not only the limitation on construction equipment noise level (80 decibels at 100 feet) in the Police Code as a tool for determining significance but also apply a 10 decibel increase over existing conditions for assessment of construction noise impacts. The SEIR does not rely solely on compliance with regulatory standards in the Police Code to determine whether noise impacts are considered significant, the analysis for construction-related noise impacts also discusses the Mission Bay Good Neighbor Policy. The approach used is consistent with Appendix G of the CEQA Guidelines, which calls for addressing whether the proposed project would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the

project but leaves the determination of the quantitative threshold to be applied at the discretion of the lead agency. Thus, the approach used is consistent with the CEQA Guidelines in that it considered whether construction activities would increase ambient noise above the 10 decibel level, an increased above which the FSEIR judged to be significant because it would result in a more than doubling of existing noise levels.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
I.2	July 25, Lippe	O-MBA9L3-1 to O-MBA9L3-9	RTC Section 13.12, pp. 13.12-1 to 13.12-29	Various Noise Issues, see appeal issues below for specific issues
I.2	July 24, Hubach[a]	O-MBA9L3-6 to O-MBA9L3-9	RTC Section 13.12, pp. 13.12-1 to 13.12-29	Various Noise Issues
I.2	Nov 2, Lippe FSEIR, pp. 1-2, 14-15[b]	O-MBA20L7-1	LC ERP-1 Exh D p. D-71	Adequacy of SEIR and CEQA process
		O-MBA20L7-2	LC ERP-4 Exh D, p. D-89	Public Comment
		O-MBA20L7-9	LC NOI-1 Exh D, p. D-197	Noise significance thresholds
I.2	Nov 2, Hubach	O-MBA20L7-50 to O-MBA20L7-52	LC NOI-1 and LC NOI-2 Exh D, p. D-197	Noise significance thresholds, and Noise impacts of project refinements

[a] In the appeal letter, the Appellant mistakenly references a July 24 letter from Hubach. However, the Appellant is actually referring to a Hubach letter dated July 22, 2015 (coded in this appeal response as O-MBA9L3).

[b] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

I.3 **Appeal Issue**: The SEIR uses ambient plus increment thresholds of significance for all noise impacts, which the Appellant asserts is a legal error.

Summary of Appeal Response I.3: The commenter's disagreement over the methodology used in the SEIR is noted. However a lead agency is vested with discretion to choose the proper significance threshold and does not violate CEQA when it chooses to reject different thresholds proposed by a project opponent. It should be noted that the CEQA Guidelines Appendix G, Section XII (c) calls for determining whether the project causes "A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project" and Section XII (d) calls for determining whether the project causes "A temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project." The noise impact methodology used in the SEIR responds directly to those CEQA Guideline inquiries with respect to identifying whether or not the project would result in a substantial increase over ambient noise levels.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
I.3	July 24, Hubach, p. 5[a]	O-MBA9L3-8	RTC NOI-2b RTC p. 13.12-14	Operational noise thresholds
I.3	July 25, Lippe	O-MBA9L3-1 to O-MBA9L3-9	RTC Section 13.12, pp. 13.12-1 to 13.12-29	Various Noise Issues, see appeal issues below for specific issues
I.3	July 24, Hubach[a]	O-MBA9L3-6 to O-MBA9L3-9	RTC Section 13.12, pp. 13.12-1 to 13.12-29	Various Noise Issues
I.3	Nov 2, Lippe FSEIR, pp. 1-2, 14-15[b]	O-MBA20L7-1	LC ERP-1 Exh D, p. D-71	Adequacy of SEIR and CEQA process
		O-MBA20L7-2	LC ERP-4 Exh D, p. D-89	Public Comment
		O-MBA20L7-9	LC NOI-1 Exh D, p. D-197	Noise significance thresholds
I.3	Nov 2, Hubach	O-MBA20L7-50 to O-MBA20L7-52	LC NOI-1 and LC NOI-2 Exh D, p. D-197	Noise significance thresholds, and Noise impacts of project refinements

[a] In the appeal letter, the Appellant mistakenly references a July 24 letter from Hubach. However, the Appellant is actually referring to a Hubach letter dated July 22, 2015 (coded in this appeal response as O-MBA9L3).

[b] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

I.4 Appeal Issue: The SEIR does not use thresholds of significance based on human health and welfare.

Summary of Appeal Response I.4: See responses above to Appeal Issues I.2 and I.3.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
I.4	July 25, Lippe, pp. 4-7	O-MBA9L3-2	RTC NOI-2a RTC, p. 13.12-6	Construction noise thresholds
		O-MBA9L3-3	RTC NOI-3 RTC, p. 13.12-21	Construction noise impacts
		O-MBA9L3-4	RTC NOI-2b RTC, p. 13.12-14	Operational noise thresholds
		O-MBA9L3-5	RTC NOI-5 RTC, p. 13.12-26	Vibration impacts
I.4	July 24, Hubach, pp. 3-6[a]	O-MBA9L3-8	RTC NOI-2b RTC, p. 13.12-14	Operational noise thresholds
		O-MBA9L3-9	RTC NOI-5 RTC, p. 13.12-26	Vibration impacts
I.4	Nov 2, Lippe FSEIR, pp. 1-2, 14-15[b]	O-MBA20L7-1	LC ERP-1 Exh D, p. D-71	Adequacy of SEIR and CEQA process
		O-MBA20L7-2	LC ERP-4 Exh D, p. D-89	Public Comment

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
I.4 (cont.)	Nov 2, Lippe FSEIR, pp. 1-2, 14-15[b]	O-MBA20L7-9	LC NOI-1 Exh D, p. D-197	Noise significance thresholds
I.4	Nov 2, Hubach	O-MBA20L7-50 to O-MBA20L7-52	LC NOI-1 and LC NOI-2 Exh D, p. D-197	Noise significance thresholds, and Noise impacts of project refinements

[a] In the appeal letter, the Appellant mistakenly references a July 24 letter from Hubach. However, the Appellant is actually referring to a Hubach letter dated July 22, 2015 (coded in this appeal response as O-MBA9L3).

[b] In the appeal letter, the Appellant references a November 2 letter from Lippe (coded in this appeal response as O-MBA20L7). Please note that the first page of this letter is dated November 2, 2015, however, pages 2 through 16 of this letter are dated November 3, 2015. For consistency, this appeal response refers to this Lippe letter as being dated November 2, 2015.

TOPIC J: GREENHOUSE GASES EMISSIONS

J.1 **Appeal Issue**: The SEIR's conclusion that greenhouse gases (GHG) emissions are less than significant is not supported by substantial evidence.

Summary of Appeal Response J.1: The SEIR GHG emissions impact analysis was conducted consistent with *San Francisco's Greenhouse Gas Reduction Strategy*, as approved by the Bay Area Air Quality Management District (BAAQMD) and consistent with CEQA Guidelines Sections 15064.4 and 15183.5. The SEIR GHG emissions analysis determined that the proposed project would be consistent with *San Francisco's Greenhouse Gas Reduction Strategy*, as documented on the Greenhouse Gas Analysis Compliance Checklist, whereby the project would reduce its GHG emissions through compliance with regulations and policies to increase energy efficiency, implement green building strategies, adopt zero waste strategies, incorporate recycling and composting, and more. Because the City's local GHG reduction targets are more aggressive than those of the region or the State, consistency with the City's Greenhouse Gas Reduction Strategy necessarily demonstrates consistency with the State's GHG regulations, the Governor's executive orders, and the Bay Area 2010 Clean Air Plan. Therefore, the project's impacts related to GHG emissions were determined to be less than significant.

The appellant has raised a number of concerns that mistakenly conflates the GHG emissions impact analysis for the SEIR with the GHG analysis required under the AB 900 process. The analysis for the AB 900 process is a separate and distinct requirement for the project to qualify as an environmental leadership project under AB 900 and was not used to support the CEQA analysis in the SEIR.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
J.1	June 30, oral comments by Osha Meserve	PH-Meserve-4	RTC GHG-2 RTC, p. 13-14-5	Greenhouse gases emissions, approach to analysis
J.1	June 30, oral comments by Susan Vaughn	PH-Vaughn-2 PH-Vaughn-3 PH-Vaughn-5	RTC GHG-2 RTC, p. 13-14-5	Greenhouse gases emissions, approach to analysis
J.1	July 26, Soluri Meserve, pp. 2-6	O-MBA7S2-2 O-MBA7S2-5	RTC GHG-2 RTC, p. 13-14-5	Greenhouse gases emissions, approach to analysis
		O-MBA7S2-3 O-MBA7S2-4	RTC AB-1 RTC, p. 13.4-10	AB 900 Environmental Leadership Certification
J.1	July 27, Susan Vaughn, Sierra Club	O-Sierra-6 O-Sierra-10 O-Sierra-11	RTC GHG-2 RTC, p. 13-14-5	Greenhouse gases emissions, approach to analysis
		O-Sierra-9 O-Sierra-10 O-Sierra-11	RTC AB-1 RTC, p. 13.4-10	AB 900 Environmental Leadership Certification
J.1	July 20, Patrick Sullivan and John Henkelman (Exhibit A to July 26 Soluri Meserve)	O-MBA7S2-41	RTC GHG-2 RTC, p. 13-14-5	Greenhouse gases emissions, approach to analysis
		O-MBA7S2-40 O-MBA7S2-41	RTC AB-1 RTC, p. 13.4-10	AB 900 Environmental Leadership Certification
J.1	Nov 2, Soluri Meserve, pp. 3-6	O-MBA16S6-3	LC GHG-1 Exh D, p. D-256	Greenhouse gases emissions, approach to analysis
J.1	Nov 2, Patrick Sullivan and John Henkelman (Exhibit 1 to Nov 2 Soluri Meserve)	O-MBA16S6-11	LC GHG-1 Exh D, p. D-256	Greenhouse gases emissions, approach to analysis

J.2 **Appeal Issue**: The appellant asserts that recirculation is required due to the Final SEIR's change in approach to GHG analysis from the Draft SEIR.

Summary of Appeal Response J.2: The appellant is mistaken. There was no change in approach between the Draft and Final SEIR for the GHG emissions impact analysis. The RTC document provided some text revisions to clarify this point. The appellant has raised a number of concerns that mistakenly conflates the GHG emissions impact analysis for the SEIR with the GHG analysis required under the AB 900 process. The analysis for the AB 900 process is a separate and distinct requirement for the project to qualify as an environmental leadership project under AB 900 and was not used to support the CEQA analysis in the SEIR. Recirculation is not warranted on the basis of the appellant's concerns on the approach to the GHG emissions impact analysis.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
J.2	Nov 2, Soluri Meserve, pp. 3-6	O-MBA16S6-3	LC GHG-1 Exh D, p. D-256	Greenhouse gases emissions, approach to analysis
J.2	Nov 2, Patrick Sullivan and John Henkelman (Exhibit 1 to Nov 2 Soluri Meserve)	O-MBA16S6-11	LC GHG-1 Exh D, p. D-256	Greenhouse gases emissions, approach to analysis

J.3 **Appeal Issue**: The appellant asserts that because quantitative methods of GHG emissions analysis are available, that the SEIR is required to employ them.

Summary of Appeal Response J.3: As described above in Summary of Appeal Response J.1, the SEIR GHG impact analysis was conducted consistent with the requirements of CEQA, using methods approved by the BAAQMD. The appellant is erroneous in stating that a quantitative method of analysis is required by law.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
J.3	Nov 2, Patrick Sullivan and John Henkelman (Exhibit 1 to Nov 2 Soluri Meserve)	O-MBA16S6-11	LC GHG-1 Exh D, p. D-256	Greenhouse gases emissions, approach to analysis
J.3	Nov 2, Soluri Meserve, pp. 4-5	O-MBA16S6-3	LC GHG-1 Exh D, p. D-256	Greenhouse gases emissions, approach to analysis

J.4 **Appeal Issue**: The appellant states that the SEIR fails to require all feasible mitigation of the GHG emissions of the project.

Summary of Appeal Response J.4: The SEIR GHG emissions impact analysis determined that the project would generate GHG emissions but not at levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing GHGs. Therefore, this impact would be less than significant and no mitigation is required.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
J.4	July 26, Soluri Meserve, pp. 4-6	O-MBA7S2-5	RTC GHG-2 RTC p. 13-14-5	Greenhouse gases emissions, approach to analysis
J.4	Nov 2, Soluri Meserve, pp. 3-6	O-MBA16S6-3	LC GHG-1 Exh D, p. D-256	Greenhouse gases emissions, approach to analysis

J.5 **Appeal Issue**: The SEIR conflates analysis of the Project's design features (Improvement Measures) and mitigation measures, and thus fails to consider whether other possible mitigation measures would be more effective.

Summary of Appeal Response J.5: As described in Summary of Appeal Response J.4, the project's GHG emissions impact was determined to be less than significant, and therefore no mitigation is required. The appellant's issue regarding mitigation measures is irrelevant. However, in acknowledgment of the proposed project's designation as an environmental leadership project under AB 900 and its associated requirements, the SEIR includes Improvement Measure

I-C-GG-1, Purchase Voluntary Carbon Credits. As with all improvement measures included in the SEIR, Improvement Measure I-C-GG-1 is included in the MMRP to confirm the project sponsor implements the measure.

J.6 **Appeal Issue**: The Final SEIR fails to respond to comments about the GHG analysis and why it was proper to exclude the office towers from the GHG emissions inventory.

Summary of Appeal Response J.6: The appellant has mistakenly conflated the GHG emissions impact analysis for the SEIR with the GHG analysis required under the AB 900 process. The quantification of GHG emissions for AB 900 is separate and independent from the determination of significance required for CEQA. Thus, whether or not the AB 900 GHG emissions quantification included the office towers is immaterial to the determination of CEQA significance. For the purposes of the CEQA analysis, the SEIR analyzes potential GHG emission impacts for the entire project, including the office towers, using the City's Greenhouse Gas Reduction Strategy.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
J.6	Nov 2, Soluri Meserve, pp. 3-6	O-MBA16S6-3	LC GHG-1 Exh D, p. D-256	Greenhouse gases emissions, approach to analysis

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TOPIC K: GEOLOGY AND SOILS

K.1 **Appeal Issue:** Appellant states that the Record contains substantial evidence supporting a fair argument that the Project will result in potentially significant Geology and Soils impacts or, alternatively, supplemental review is required under Public Resources Code section 21166.

Summary of Appeal Response K.1: As discussed in Response RTC-GEO-1, FSEIR p. 13.20-8, there is a well-established regulatory framework and permitting process in place, enforced through the San Francisco Department of Building Inspection (DBI) Site Permit process and the San Francisco Building Code, which would require the detailed construction plans for the event center to be designed to current building code requirements for a "public assembly use" occupancy that would withstand seismic and geotechnical hazards as discussed in Impact GE-1 of the Initial Study. The extensive permitting and inspection process also would ensure that the building is constructed in accordance with the approved construction plans. Therefore, the project would not result in significant Geology and Soils impact, and supplemental review is not required. The overall approach to analysis used in the Initial Study has been found to be legally adequate in numerous legal cases as explained in Response RTC-GEO-1.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
K.1	July 26 Soluri Meserve, pp. 13-20	O-MBA7S2-11 O-MBA7S2-12 O-MBA7S2-13 O-MBA7S2-18 O-MBA7S2-20	RTC GEO-1 RTC, p. 13.20-1	Approach to analysis
		O-MBA7S2-20	RTC GEO-6 RTC, p. 13.20-25	Mitigation for corrosive soils
		O-MBA7S2-14	RTC GEO-3 RTC, p. 13.20-19	Mitigation for liquefaction-related hazards
		O-MBA7S2-15	RTC GEO-4 RTC, p. 13.20-21	Foundation system design
		O-MBA7S2-16	RTC GEO-5 RTC, p. 13.20-23	Impacts of pile driving and dewatering
K.1	July 21 Karp, pp. 1-11 (Exhibit C to July 26 Soluri Meserve)	O-MBA7S2-60	RTC GEO-1 RTC, p. 13.20-1	Approach to analysis
K.1	July 20 Cline and Balasek, pp. 1-9 (Exhibit D to July 26 Soluri Meserve) 1-18	O-MBA7S2-68 O-MBA7S2-70 O-MBA7S2-72	RTC GEO-2 RTC, p. 13.20-15	1998 Mission Bay FSEIR analysis
		O-MBA7S2-68 O-MBA7S2-75 O-MBA7S2-78 O-MBA7S2-80 O-MBA7S2-88 O-MBA7S2-90	RTC GEO-3 RTC, p. 13.20-19	Mitigation for liquefaction-related hazards
		O-MBA7S2-76 O-MBA7S2-77 O-MBA7S2-79 O-MBA7S2-84 O-MBA7S2-86	RTC GEO-1 RTC, p. 13.20-1	Approach to analysis
		O-MBA7S2-81 O-MBA7S2-82	RTC GEO-5 RTC, p. 13.20-23	Impacts of pile driving and dewatering
K.1	Nov 2 Cline and Balasek (Exhibit 2 to Nov 2 Soluri Meserve)	O-MBA16S6-12	LC GEO-2 Exh D, p. D-306	Reliance on building code requirements and emergency response
K.1	Nov 2 Soluri Meserve, pp. 9-11	O-MBA16S6-6	LC GEO-1 Exh D, p. D-304	Geology approach to analysis, tiering

K.2 Appeal Issue: Appellant states that the SEIR should not rely on the 1998 SEIR analysis of Geology and Soils because the Project is different than the project described in the 1998 FSEIR, the 1998 FSEIR relies on outdated data and methodology to analyze impacts and conditions have changed such that the 1998 FSEIR does not describe the present conditions at the site.

Summary of Appeal Response K.2: As discussed in Response RTC-GEO-2 (FSEIR p. 13.20-17) and Impact GE-1 of the Initial Study (pp. 86 and 87), the proposed

project would be constructed in accordance with current San Francisco Building Code requirements, implementing the recommendations of a site-specific geotechnical investigation that would be conducted for the proposed project. This would ensure that geologic and seismic impacts of the project are appropriately addressed. While this approach is consistent with the conclusions of the 1998 Mission Bay FSEIR that geologic and seismic impacts would be less than significant with the then current building code, the approach does not rely on the data and methodology used in the 1998 Mission Bay FSEIR. Compliance with current building code requirements results in construction of a more seismically safe building than one that would have been constructed under previous building code versions.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
K.2	July 26 Soluri Meserve, pp. 13-20	O-MBA7S2-11 O-MBA7S2-12 O-MBA7S2-13 O-MBA7S2-18 O-MBA7S2-20	RTC GEO-1 RTC, p. 13.20-1	Approach to analysis
		O-MBA7S2-20	RTC GEO-6 RTC, p. 13.20-25	Mitigation for corrosive soils
		O-MBA7S2-14	RTC GEO-3 RTC, p. 13.20-19	Mitigation for liquefaction-related hazards
		O-MBA7S2-15	RTC GEO-4 RTC, p. 13.20-21	Foundation system design
		O-MBA7S2-16	RTC GEO-5 RTC, p. 13.20-23	Impacts of pile driving and dewatering
K.2	July 21 Karp, pp. 1-11 (Exhibit C to July 26 Soluri Meserve)	O-MBA7S2-60	RTC GEO-1 RTC, p. 13.20-1	Approach to analysis
K.2	July 20 Cline and Balasek, pp. 1-18 (Exhibit D to July 26 Soluri Meserve)	O-MBA7S2-68 O-MBA7S2-70 O-MBA7S2-72	RTC GEO-2 RTC, p. 13.20-15	1998 Mission Bay FSEIR analysis
		O-MBA7S2-68 O-MBA7S2-75 O-MBA7S2-78 O-MBA7S2-80 O-MBA7S2-88 O-MBA7S2-90	RTC GEO-3 RTC, p. 13.20-19	Mitigation for liquefaction-related hazards
		O-MBA7S2-76 O-MBA7S2-77 O-MBA7S2-79 O-MBA7S2-84 O-MBA7S2-86	RTC GEO-1 RTC, p. 13.20-1	Approach to analysis
		O-MBA7S2-81 O-MBA7S2-82	RTC GEO-5 RTC, p. 13.20-23	Impacts of pile driving and dewatering
K.2	Nov 2 Cline and Balasek, pp. 1-4 (Exhibit 2 to Nov 2 Soluri Meserve)	O-MBA16S6-12	LC GEO-2 Exh D, p. D-306	Reliance on building code requirements and emergency response
K.2	Nov 2 Soluri Meserve, pp. 9-11	O-MBA16S6-6	LC GEO-1 Exh D, p. D-304	Geology approach to analysis, tiering

K.3 Appeal Issue: Appellant states that the EIR defers development of mitigation measures necessary to ensure that Geology and Soils impacts are mitigated to less than significant levels.

Summary of Appeal Response K.3: The appellant conflates regulatory requirements with mitigation measures. Under CEQA, impacts related to seismic phenomena such as ground shaking and seismically-induced ground failure (including liquefaction, lateral spread, and seismically-induced settlement) would be significant if the project would expose people or structures to potential substantial adverse effects related to these phenomena. Compliance with current building code requirements that are enforceable through DBI's Site Permit process would ensure that people and structures would not be exposed to such adverse effects. Therefore, the requirements of the building code are not mitigation measures, rather they are enforceable and mandatory regulatory requirements that would ensure that significant adverse geologic and seismic impacts are avoided.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
K.3	July 26 Soluri Meserve, pp. 13-20	O-MBA7S2-11 O-MBA7S2-12 O-MBA7S2-13 O-MBA7S2-18 O-MBA7S2-20	RTC GEO-1 RTC, p. 13.20-1	Approach to analysis
		O-MBA7S2-20	RTC GEO-6 RTC, p. 13.20-25	Mitigation for corrosive soils
K.3	July 21 Karp, pp. 1-11 (Exhibit C to July 26 Soluri Meserve)	O-MBA7S2-60	RTC GEO-1 RTC, p. 13.20-1	Approach to analysis
K.3	July 20 Cline and Balasek, pp. 1-18 (Exhibit D to July 26 Soluri Meserve)	O-MBA7S2-68 O-MBA7S2-70 O-MBA7S2-72	RTC GEO-2 RTC, p. 13.20-15	1998 Mission Bay FSEIR analysis
K.3	July 20 Cline and Balasek, pp. 1-18 (Exhibit D to July 26 Soluri Meserve)	O-MBA7S2-68 O-MBA7S2-75 O-MBA7S2-78 O-MBA7S2-80 O-MBA7S2-88 O-MBA7S2-90	RTC GEO-3 RTC, p. 13.20-19	Mitigation for liquefaction-related hazards
K.3	July 20 Cline and Balasek, pp. 1-18 (Exhibit D to July 26 Soluri Meserve)	O-MBA7S2-76 O-MBA7S2-77 O-MBA7S2-79 O-MBA7S2-84 O-MBA7S2-86	RTC GEO-1 RTC, p. 13.20-1	Approach to analysis
K.3	July 20 Cline and Balasek, pp. 1-18 (Exhibit D to July 26 Soluri Meserve)	O-MBA7S2-81 O-MBA7S2-82	RTC GEO-5 RTC, p. 13.20-23	Impacts of pile driving and dewatering

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
K.3	Nov 2 Cline and Balasek, pp. 1-4 (Exhibit 2 to Nov 2 Soluri Meserve)	O-MBA16S6-12	LC GEO-2 Exh D, p. D-306	Reliance on building code requirements and emergency response
K.3	Nov 2 Soluri Meserve, pp. 9-11	O-MBA16S6-6	LC GEO-1 Exh D, p. D-304	Geology approach to analysis, tiering

K.4 Appeal Issue: Appellant states that Recirculation is required due to new information presented in the FSEIR and within the Record regarding Geology and Soils impacts.

Summary of Appeal Response K.4: The information provided in Section 13.20 of the Responses to Comments document provide clarification and legal precedence supporting the analysis used the analysis of geologic and seismic impacts discussed in Section E.14 of the Initial Study. The responses do not provide new information, and recirculation is not required.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
K.4	July 21 Karp, pp. 1-11 (Exhibit C to July 26 Soluri Meserve)[a]	O-MBA7S2-60	RTC GEO-1 RTC, p. 13.20-1	Approach to analysis
K.4	July 20 Cline and Balasek, pp. 1-18 (Exhibit D to July 26 Soluri Meserve)	O-MBA7S2-68 O-MBA7S2-70 O-MBA7S2-72	RTC GEO-2 RTC, p. 13.20-15	1998 Mission Bay FSEIR analysis
K.4	July 20 Cline and Balasek, pp. 1-18 (Exhibit D to July 26 Soluri Meserve)	O-MBA7S2-68 O-MBA7S2-75 O-MBA7S2-78 O-MBA7S2-80 O-MBA7S2-88 O-MBA7S2-90	RTC GEO-3 RTC, p. 13.20-19	Mitigation for liquefaction-related hazards
K.4	July 20 Cline and Balasek, pp. 1-18 (Exhibit D to July 26 Soluri Meserve)	O-MBA7S2-76 O-MBA7S2-77 O-MBA7S2-79 O-MBA7S2-84 O-MBA7S2-86	RTC GEO-1 RTC, p. 13.20-1	Approach to analysis
K.4	July 20 Cline and Balasek, pp. 1-18 (Exhibit D to July 26 Soluri Meserve)	O-MBA7S2-81 O-MBA7S2-82	RTC GEO-5 RTC, p. 13.20-23	Impacts of pile driving and dewatering

[a] In the appeal letter, the Appellant mistakenly references a July 22, 2015 letter from Lawrence Karp. However, the Appellant is actually referring to a Lawrence Karp letter dated July 21, 2015 (coded in this appeal response as O-MBA7S2). The correct date of the letter is presented in the table, above.

K.5 Appeal Issue: The FSEIR fails to adequately respond in good faith to comments about Geology and Soils analysis.

Summary of Appeal Response K.5: Section 13.20 of the Responses to Comments document includes extensive responses to each and every comment received on Section E.4 of the Initial Study, Geology and Soils, and provides legal precedence for the approach to analysis used in the Initial Study. Comments received since certification of the SEIR are addressed in Exhibit D of this document.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
K.5	Nov 2 Cline and Balasek, pp. 1-4 (Exhibit 2 to Nov 2 Soluri Meserve)	O-MBA16S6-12	LC GEO-2 Exh D, p. D-306	Reliance on building code requirements and emergency response

TOPIC L: HAZARDS AND HAZARDOUS MATERIALS

L.1 Appeal Issue: The Record contains substantial evidence supporting a fair argument that the Project will result in potentially significant Hazards and Hazardous Materials impacts or, alternatively, supplemental review is required under Public Resources Code section 21166.

Summary of Appeal Response L.1: As discussed in Responses RTC-HAZ-1, under CEQA, construction activities and locating new uses on a site that is included on a list of hazardous materials sites (such as the propose project site) could result in a significant impact if these actions create a significant hazard to the public or the environment. Implementation of the 1999 RMP prepared in accordance with the 1998 Mission Bay FSEIR, and associated implementation of Article 22A of the San Francisco Public Health Code, compliance with which is incorporated in the RMP, with oversight by the San Francisco Department of Public Health and the San Francisco Bay Regional Water Quality Control Board, ensures that construction and operation of the project would not result in significant impacts to the public or the environment. Implementation of the RMP is enforced through the Covenant and Environmental Restrictions recorded in the deed for the project site, as well as the deeds of all Mission Bay sites. Impact HAZ-2 of the Final SEIR appropriately concludes that impacts associated with exposure to hazardous materials in the soil and groundwater would be less than significant. Response RTC-HAZ-3 describes the results of subsequent investigations and planning that have been conducted in accordance with the 1999 RMP and Article 22A.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
L.1	July 26 Soluri Meserve, pp. 7-20	O-MBA7S2-6 O-MBA7S2-9 O-MBA7S2-10	RTC HAZ-1 RTC, p. 13.22-1	Reliance on 1998 Mission Bay FSEIR and 1999 RMP
		O-MBA7S2-7	RTC HAZ-2 RTC, p. 13.22-12	Contaminants addressed by cleanup order
		O-MBA7S2-8 O-MBA7S2-9	RTC HAZ-3 RTC, p. 13.22-15	Soil contamination and transport of hazardous wastes
		O-MBA7S2-10	RTC HAZ-4 RTC, p. 13.22-29	Reliance on regulatory standards for naturally-occurring asbestos
		O-MBA7S2-21	RTC HAZ-8 RTC, p. 13.22-35	Emergency evacuation
L.1	Nov 2 Soluri Meserve, pp. 11-14	O-MBA16S6-7	LC HAZ-2 Exh D, p. D-343	Naturally-occurring asbestos
		O-MBA16S6-8	LC HAZ-1 Exh D, p. D-336	Assessment of hazardous materials impacts
L.1	July 22 Cline, pp 1-15 (Exhibit B to July 26 Soluri Meserve)	O-MBA7S2-42 O-MBA7S2-44 O-MBA7S2-45 O-MBA7S2-46 O-MBA7S2-50 O-MBA7S2-51	RTC HAZ-1 RTC, p. 13.22-1	Reliance on 1998 FSEIR
L.1	July 22 Cline, pp 1-15 (Exhibit B to July 26 Soluri Meserve)	O-MBA7S2-47 O-MBA7S2-49 O-MBA7S2-52 O-MBA7S2-55 O-MBA7S2-57 O-MBA7S2-58 O-MBA7S2-59	RTC HAZ-3 RTC, p. 13.22-15	Site contamination
		O-MBA7S2-53 O-MBA7S2-54 O-MBA7S2-55	RTC HAZ-4 RTC, p. 13.22-29	Naturally occurring asbestos
		O-MBA7S2-43	RTC HAZ-5 RTC, p. 13.22-32	Reuse of excavated soil
		O-MBA7S2-48	RTC HAZ-6 RTC, p. 13.22-33	Disposal of treated wood
		O-MBA7S2-56	RTC HAZ-7 RTC, p. 13.22-34	Lead agency for school evaluations
L.1	Oct 20 Soluri Meserve	O-MBA15S5-1	LC HAZ-1 Exh D, p. D-336	Assessment of hazardous materials impacts – screening levels

L.2 **Appeal Issue:** Appellant states that the SEIR should not rely on the 1998 SEIR analysis of Hazards and Hazardous Materials because the Project is different than the project described in the 1998 FSEIR, the 1998 FSEIR relies on outdated data and methodology

to analyze impacts, and conditions have changed such that the 1998 FSEIR does not describe the present contamination at the site.

Summary of Appeal Response L.2: Implementation of the 1999 RMP prepared in accordance with the 1998 Mission Bay FSEIR, and associated implementation of Article 22A of the San Francisco Public Health Code, with oversight by the San Francisco Department of Public Health and the San Francisco Bay Regional Water Quality Control Board, ensures that construction and operation of the project would not result in significant impacts to the public or the environment. The RMP anticipates a wide variety of projects, and includes construction and operational measures that must be incorporated into every project to ensure that the public and environment are not adversely affected by hazardous materials in the soil and groundwater within Mission Bay. Impact HAZ-2 of the Initial Study appropriately concludes that impacts associated to exposure to hazardous materials in the soil and groundwater would be less than significant. The RTC document describes the results of subsequent investigations and planning that have been conducted in accordance with the 1999 RMP and Article 22A and include measures specific to the project's construction activities and design.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
L.2	July 26 Soluri Meserve, pp. 7-13	O-MBA7S2-6 O-MBA7S2-9 O-MBA7S2-10	RTC HAZ-1 RTC, p. 13.22-1	Reliance on 1998 Mission Bay FSEIR and 1999 RMP
		O-MBA7S2-7	RTC HAZ-2 RTC, p. 13.22-12	Contaminants addressed by cleanup order
		O-MBA7S2-8 O-MBA7S2-9	RTC HAZ-3 RTC, p. 13.22-15	Soil contamination and transport of hazardous wastes
		O-MBA7S2-10	RTC HAZ-4 RTC, p. 13.22-29	Reliance on regulatory standards for naturally-occurring asbestos
L.2	July 22 Cline, pp 1-15 (Exhibit B to July 26 Soluri Meserve)	O-MBA7S2-42 O-MBA7S2-44 O-MBA7S2-45 O-MBA7S2-46 O-MBA7S2-50 O-MBA7S2-51	RTC HAZ-1 RTC, p. 13.22-1	Reliance on 1998 FSEIR
		O-MBA7S2-47 O-MBA7S2-49 O-MBA7S2-52 O-MBA7S2-55 O-MBA7S2-57 O-MBA7S2-58 O-MBA7S2-59	RTC HAZ-3 RTC, p. 13.22-15	Site contamination and transport of hazardous waste
		O-MBA7S2-53 O-MBA7S2-54 O-MBA7S2-55	RTC HAZ-4 RTC, p. 13.22-29	Naturally occurring asbestos

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
L.2 (cont.)	July 22 Cline, pp 1-15 (Exhibit B to July 26 Soluri Meserve)	O-MBA7S2-43	RTC HAZ-5 RTC, p. 13.22-32	Reuse of excavated soil
		O-MBA7S2-48	RTC HAZ-6 RTC, p. 13.22-33	Disposal of treated wood
		O-MBA7S2-56	RTC HAZ-7 RTC, p. 13.22-34	Lead agency for school evaluations
L.2	Oct 20 Soluri Meserve	O-MBA15S5-1	LC HAZ-1 Exh D, p. D-336	Assessment of hazardous materials impacts – screening levels
L.2	Oct 20 Damian Applied Technology	O-MBA15S5-1	LC HAZ-1 Exh D, p. D-336	Assessment of hazardous materials impacts – screening levels

L.3 **Appeal Issue:** Appellant states that significant new information since the certification of the 1998 SEIR requires analysis of Hazards and Hazardous Materials impacts from risks of exposure.

Summary of Appeal Response L.3: OCII acknowledges that the environmental screening levels have been updated since preparation of the 1999 RMP for the Mission Bay Plan Area. However, the comment letter conflates this screening level information with the CEQA analysis of potentially significant hazards and hazardous materials impacts. None of the information presented by the commenter, including the updated environmental screening levels, affects the conclusions reached in the Final SEIR regarding hazards and hazardous materials impacts.

The public would not be exposed to hazardous materials in the soil during construction because the project sponsor would implement a dust monitoring plan in accordance with Articles 22A and 22B of the San Francisco Public Health Code and a stormwater pollution prevention plan in accordance with the Construction General Stormwater Permit issued by the State Water Resources Control Board. Implementation of these requirements would ensure that hazardous materials in the soil are not transported off-site via wind or stormwater runoff and would be protective of the public. Workers would be protected with implementation of the site-specific health and safety plan required by Article 22A as well as state and federal health and safety regulations.

Once the project is constructed, site occupants, commercial workers, and visitors, as well as adjacent property owners, visitors and residents, would not be exposed to chemicals in the soil or groundwater, therefore no health risk would occur. Site excavation would remove soil to a minimum depth of 12 feet as part of the site development, and clean engineered backfill would be used where needed. The

site would be occupied by buildings or paved, and none of the existing soil on the site would be exposed at grade. All landscaped areas on the site would be above structures, and clean soil would be brought in for all landscaped areas on the project site. Groundwater would not be used for any purposes.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
L.3	July 26 Soluri Meserve, pp. 7-13	O-MBA7S2-6 O-MBA7S2-9 O-MBA7S2-10	RTC HAZ-1 RTC, p. 13.22-1	Reliance on 1998 Mission Bay FSEIR and 1999 RMP
		O-MBA7S2-7	RTC HAZ-2 RTC, p. 13.22-12	Contaminants addressed by cleanup order
		O-MBA7S2-8 O-MBA7S2-9	RTC HAZ-3 RTC, p. 13.22-15	Soil contamination and transport of hazardous wastes
		O-MBA7S2-10	RTC HAZ-4 RTC, p. 13.22-29	Reliance on regulatory standards for naturally-occurring asbestos
L.3	Nov 2 Soluri Meserve, pp. 11-14	O-MBA16S6-7	LC HAZ-2 Exh D, p. D-343	Naturally-occurring asbestos
		O-MBA16S6-8	LC HAZ-1 Exh D, p. D-336	Assessment of hazardous materials impacts
L.3	July 22 Cline, pp 1-15 (Exhibit B to July 26 Soluri Meserve)	O-MBA7S2-42 O-MBA7S2-44 O-MBA7S2-45 O-MBA7S2-46 O-MBA7S2-50 O-MBA7S2-51	RTC HAZ-1 RTC, p. 13.22-1	Reliance on 1998 FSEIR
		O-MBA7S2-47 O-MBA7S2-49 O-MBA7S2-52 O-MBA7S2-55 O-MBA7S2-57 O-MBA7S2-58 O-MBA7S2-59	RTC HAZ-3 RTC, p. 13.22-15	Site contamination
		O-MBA7S2-53 O-MBA7S2-54 O-MBA7S2-55	RTC HAZ-4 RTC, p. 13.22-29	Naturally occurring asbestos
		O-MBA7S2-43	RTC HAZ-5 RTC, p. 13.22-32	Reuse of excavated soil
		O-MBA7S2-48	RTC HAZ-6 RTC, p. 13.22-33	Disposal of treated wood
		O-MBA7S2-56	RTC HAZ-7 RTC, p. 13.22-34	Lead agency for school evaluations
L.3	Oct 20 Soluri Meserve	O-MBA15S5-1	LC HAZ-1 Exh D, p. D-336	Assessment of hazardous materials impacts – screening levels
L.3	Oct 20 Damian Applied Technology	O-MBA15S5-1	LC HAZ-1 Exh D, p. D-336	Assessment of hazardous materials impacts – screening levels

L.4 Appeal Response: Appellant states that recirculation of the FSEIR was required due to new information regarding substantially more severe and/or significant impacts associated with the presence of asbestos on the Project site. (FSEIR, Vol. 5, p. 13-22 to 13-29.)

Summary of Appeal Response L.4: The Appellant inaccurately states that the SEIR did not acknowledge the presence of naturally occurring asbestos on-site and only prepared an Asbestos Dust Monitoring Plan in response to actions taken by the Bay Area Air Quality Management District (BAAQMD). Impacts associated with the potential presence of naturally-occurring asbestos in soil at the project site are addressed in the Final SEIR. This analysis acknowledges that the preliminary geotechnical investigation for the site identified cobble to boulder-sized pieces of serpentinite, a rock type known to contain naturally-occurring asbestos, in the artificial fill and concluded that impacts related to exposure to asbestos in the soil could be significant. Mitigation Measure M-HZ-1b requires the project sponsor to prepare an Asbestos Dust Monitoring Plan in accordance with the Asbestos Air Toxics Control Measure Implemented by the Bay Area Air Quality Management District. The project sponsor has subsequently prepared an Asbestos Dust Monitoring Plan in accordance with this mitigation measure.

The San Francisco Department of Public Health has contacted the BAAQMD regarding the soil sampling referred to in one of the appellant's comments and found that the soil sampled was stockpiled on Block 1, and not on the project site. The Mission Bay Development Company is conducting an infrastructure project on that site, and the RWQCB has required the developer to prepare an asbestos management plan to assure proper management of the soil. This work is not related to the proposed project and the events described do not alter the need for the project to comply with the Asbestos ATCM, as this is already being conducted by the project sponsor as part of implementation of Mitigation Measure M-HZ-1b.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
L.4	July 26 Soluri Meserve, p.13	O-MBA7S2-10	RTC HAZ-1 RTC, p. 13.22-1	Reliance on 1998 Mission Bay FSEIR and 1999 RMP
		O-MBA7S2-10	RTC HAZ-4 RTC, p. 13.22-29	Reliance on regulatory standards for naturally-occurring asbestos
L.4	July 22 Cline, pp. 4-6 (Exhibit B to July 26 Soluri Meserve)	O-MBA7S2-46 O-MBA7S2-50 O-MBA7S2-51	RTC HAZ-1 RTC, p. 13.22-1	Reliance on 1998 FSEIR
		O-MBA7S2-47 O-MBA7S2-49 O-MBA7S2-52 O-MBA7S2-55 O-MBA7S2-57	RTC HAZ-3 RTC, p. 13.22-15	Site contamination and transport of hazardous waste

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
L.4 (cont.)	July 22 Cline, pp. 4-6 (Exhibit B to July 26 Soluri Meserve)	O-MBA7S2-53 O-MBA7S2-54 O-MBA7S2-55	RTC HAZ-4 RTC, p. 13.22-29	Naturally occurring asbestos
		O-MBA7S2-48	RTC HAZ-6 RTC, p. 13.22-33	Disposal of treated wood
		O-MBA7S2-56	RTC HAZ-7 RTC, p. 13.22-34	Lead agency for school evaluations
L.4	Nov 2 Soluri Meserve, p.12; Exhibit 3, to Nov 2 Soluri Meserve, p. 3	O-MBA16S6-7	LC HAZ-2 Exh D, p. D-343	Naturally-occurring asbestos

L.5 Appeal Response: Appellant states that the Final SEIR fails to adequately respond in good faith to comments about the Hazards and Hazardous Materials analysis.

Summary of Appeal Response L.5: The RTC document includes extensive responses to each and every comment received on issues related hazards and hazardous materials, and provides legal precedence for the approach to analysis used in the Final SEIR.

TOPIC M: URBAN DECAY

M.1 Appeal Issue: The SEIR fails to adequately analyze the potentially significant impacts of urban decay in Oakland.

Summary of Appeal Response M.1: Urban decay is not an explicit CEQA topic identified in CEQA Guidelines Appendix G. Further, economic impacts are not required be analyzed in a CEQA document unless they have the reasonably foreseeable indirect effect of leading to physical changes in the environment, such as urban decay, which is not the case here, as explained in the RTC document. Thus, under CEQA, the SEIR is not required to include an analysis of urban decay. Nevertheless, the RTC document includes a detailed review and response of the concerns submitted by the appellant regarding urban decay.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
M.1	July 26, Soluri Meserve	O-MBA7S2-37 O-MBA7S2-39	RTC GEN-4 RTC p. 13.2-18	Urban Decay
M.1	July 13, Philip King	O-MBA7S2-91	RTC GEN-4 RTC p. 13.2-18	Urban Decay
M.1	Nov 2, Soluri Meserve, p. 14	O-MBA16S6-9	LC GEN-3 Exh D p. D-60	Urban Decay

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
M.1	Nov 2, Philip King	O-MBA16S6-14	LC GEN-3 Exh D p. D-60	Urban Decay

M.2 Appeal Issue: The FSEIR fails to provide a good faith response to comments on the issue of urban decay.

Summary of Appeal Response M.2: Even though the subject of urban decay is not required to be analyzed in the SEIR under CEQA, the RTC document includes a detailed review and response of the concerns submitted by the appellant regarding urban decay. The response is summarized in Response GEN-4 in Section 13.2.5 of the RTC document, and is supplemented by a report by ALH Urban & Regional Economics provided in Appendix UD. This represents a comprehensive response to the appellant's issues on urban decay.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
M.2	Nov 2, Soluri Meserve, p. 14	O-MBA16S6-9	LC GEN-3 Exh D p. D-60	Urban Decay
M.2	Nov 2, Philip King	O-MBA16S6-14	LC GEN-3 Exh D p. D-60	Urban Decay

M.3 Appeal Issue: The analysis of urban decay contained in the Final SEIR requires recirculation.

Summary of Appeal Response M.3: As described in Appeal Response M.1 above, under CEQA, the SEIR is not required to include an analysis of urban decay, and the discussion of urban decay in the Final SEIR is not cause for recirculation.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
M.3	Nov 2, Soluri Meserve, p. 14	O-MBA16S6-9	LC GEN-3 Exh D p. D-60	Urban Decay

TOPIC N: WIND

N.1 **Appeal Issue**: The SEIR fails analyze and disclose significant wind impacts to open space within the project site.

N.2 **Appeal Issue**: The SEIR fails to adequately respond in good faith to comments about the wind analyses

N.3 **Appeal Issue**: Recirculation of the FSEIR is required because the FSEIR disclosed a new significant wind impact.

Summary of Appeal Responses N.1, N.2 and N.3: Pursuant to Mission Bay FSEIR Mitigation Measure D.7 (and the South Design for Development *Wind Analysis* standards), wind tunnel testing and analysis were conducted for the proposed project in this FSEIR. Consistent with the determination made in the Mission Bay FSEIR, the use of City Planning Code Section 148's wind hazard standards are an appropriate criteria for the analysis of the proposed project. Pursuant to the significance threshold used in the FSEIR, the FSEIR appropriately analyzes project wind hazard effects at off-site public areas. The FSEIR conservatively determined that wind hazard impacts at off-site public areas were potentially significant, and identified that implementation of FSEIR Mitigation Measure M-WS-1 would effectively mitigate the project off-site wind hazard to a less than significant level. In addition, the FSEIR determined that under cumulative-plus-project conditions, wind hazard impacts at off-site public areas would be less than significant.

While the project includes privately-owned publically-accessible open space areas within the project site, potential wind hazard effects on on-site publically accessible open space are not considered a significant environmental impact on the environment, and therefore, mitigation is not required for these effects.

Consequently, all potential wind hazard effects are adequately disclosed in the FSEIR, and no new issues have been raised by the commenter that would trigger recirculation of the FSEIR.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
N.1	July 26 Soluri Meserve, pp. 29-30	O-MBA7S2-32	RTC WS-1 RTC, p. 13.15-1	Analysis of Wind Impacts on Open Space within Project Site
N.1	Nov 2 Soluri Meserve, pp 6-8	O-MBA16S6-4	LC WS-1 Exh D, p. D-263	Analysis of Wind Impacts on Open Space within Project Site
N.2	Nov 2 Soluri Meserve, pp 6-8	O-MBA16S6-4	LC WS-1 Exh D, p. D-263	Adequacy of Responses to Comments on Wind Analyses
N.3	Nov 2 Soluri Meserve, pp 6-8	O-MBA16S6-4	LC WS-1 Exh D, p. D-263	Recirculation because FSEIR disclosed a new significant wind impact

TOPIC O: RECREATION

O.1 **Appeal Issue**: A fair argument exists that the Project will accelerate substantial deterioration of Bayfront Park thereby requiring analysis in the SEIR.

O.2 **Appeal Issue**: Even if consistent with the 1998 Mission Bay FSEIR, the proposed project represents a major revision that will result in significantly more impact to deterioration of Bayfront Park than previously analyzed in 1998.

O.5 **Appeal Issue**: The FSEIR failed to adequately respond in good faith to comments about the Project's impacts to recreational facilities.

Summary of Appeal Responses O.1, O.2 and O.5: The FSEIR acknowledges that development of the proposed project would increase demand for recreational facilities. Such demand would be generally consistent with that described in the 1998 Mission Bay FSEIR for the entire Plan area and would be readily met by planned parks and open space areas developed as part of the Mission Bay Plan, as well as by existing facilities in the project vicinity. Given the availability of existing recreational facilities in the project vicinity and region and the ability of these facilities to accommodate large crowds combined with the inclusion of on-site publically accessible open space proposed by the project that would directly serve the project's demand for recreational facilities, the increased use of existing recreation facilities would not result in substantial physical deterioration of these resources, or otherwise result in physical degradation of existing recreational resources. The proposed project's impacts on recreational resources were determined to be less than significant, and no mitigation is required. Furthermore, the project would not result in any new or substantially more severe impacts than those previously identified in the 1998 Mission Bay FSEIR.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
O.1	July 26 Soluri Meserve, pp. 25-27	O-MBA7S2-30	RTC REC-1 RTC, p. 13.16-2	Bayfront Park
O.1	Nov 2 Soluri Meserve, pp. 8-9	O-MBA16S6-4	LC REC-1 Exh D, p. D-268	Bayfront Park
O.2	July 26 Soluri Meserve, pp. 25-27	O-MBA7S2-30	RTC REC-1 RTC, p. 13.16-2	Bayfront Park
O.2	Nov 2 Soluri Meserve, pp. 8-9	O-MBA16S6-4	LC REC-1 Exh D, p. D-268	Bayfront Park
O.5	Nov 2 Soluri Meserve, pp. 8-9	O-MBA16S6-4	LC REC-1 Exh D, p. D-268	Bayfront Park

O.3 **Appeal Issue**: The FSEIR fails as an informational document regarding impacts to recreation because it improperly excludes analysis of environmental impacts associated with development of Bayfront Park.

O.4 **Appeal Issue**: Even if construction of Bayfront Park was previously analyzed at a programmatic level in the 1998 SEIR, new information and changed circumstances results in a new and more severe significant impacts related to hazardous material exposure to residents of Bayfront Park than previously analyzed in 1998 and require analysis in a recirculated SEIR.

Summary of Appeal Responses O.3 and O.4: As discussed in the FSEIR, while the Bayfront Park public access improvements on P22 are triggered by development on Block 29-32 according the Mission Bay Plan, Bayfront Park is not part of the project and therefore does not need to be analyzed in the SEIR for the proposed project. Bayfront Park was planned as part of the Mission Bay Plan and analyzed in the 1998 Mission Bay FSEIR and will be implemented by the master developer, FOCIL-MB, LLC. Environmental review for the park has already been completed as part of the Mission Bay Plan and is already required to be constructed as a result of prior approval actions. Further, the project and Bayfront Park each have independent purposes, can be implemented independently, and have different project sponsors.

With respect to potential hazardous materials, implementation of the RMP and the legally required Article 22A of the San Francisco Health Code (as specified in the RMP) would ensure that the public would not be exposed to potential hazardous materials in the soil during construction and subsequent use of all sites within the Mission Bay Plan area, including Bayfront Park. With implementation of these requirements, Bayfront Park users would not be exposed to unacceptable levels of hazardous materials, and use of the park would not result in significant environmental impacts related to exposure to hazardous materials.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
O.3	July 26 Soluri Meserve, pp. 25-27	O-MBA7S2-30	RTC REC-1 RTC, p. 13.16-2 RTC HAZ-9 RTC, p. 13.22-37	Bayfront Park Bayfront Park
O.3	Nov 2 Soluri Meserve, pp. 8-9	O-MBA16S6-4	LC REC-1 Exh D, p. D-268	Bayfront Park
O.4	July 26 Soluri Meserve, pp. 25-27	O-MBA7S2-30	RTC HAZ-9 RTC, p. 13.22-37	Bayfront Park
O.4	Nov 2 Soluri Meserve, pp. 8-9	O-MBA16S6-4	LC REC-1 Exh D, p. D-268	Bayfront Park

TOPIC P: UTILITIES

P.1 **Appeal Response:** Appellant states that the FSEIR is not an adequate informational document regarding water supply infrastructure because it defers analysis of the impacts associated with constructing water supply infrastructure.

Summary of Appeal Response P.1: As discussed in Response RTC-UTIL-1 of the Responses to Comment document, water mains serving the project site have already been installed by the master developer under the Mission Bay Redevelopment Plan. Although OCII does not anticipate that water conveyance facility upgrades will be needed, the Initial Study discloses that, if required, "[t]he construction of new water mains and appurtenances would require excavation, trenching, soil movement, and other activities typical of construction of development projects in San Francisco, and similar to those activities analyzed in the Mission Bay FSEIR for the various infrastructure improvements." Therefore, the Initial Study and Draft SEIR conclude that impacts of any improvements to the water conveyance system for the proposed project have been adequately disclosed in the 1998 Mission Bay FSEIR.

The current drought is not a changed circumstance for purposes of the water supply assessment prepared for the project because the SFPUC's water supply planning that takes into account an 8.5-year design drought, consisting of the 1987-92 drought, the 1976-77 drought and another 18 months of hypothetical drought – a more conservative drought estimate than is on record since the SFPUC's current water system was constructed in the early 1900s.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
P.1	July 26 Soluri Meserve, pp. 20-23	O-MBA7S2-24	RTC UTIL-1 RTC, p. 13.17-1	Water supply conveyance system

P.2 **Appeal Issue:** Appellant states that the FSEIR may not rely on the 1998 SEIR regarding analysis of water supply infrastructure because new information and/or changed circumstances results in new and more severe significant impacts associated with constructing these facilities that were not previously disclosed.

Summary of Appeal Response P.2: As discussed in Response RTC-UTIL-1 of the Responses to Comment document, the entitled water demand for Blocks 29-32 under the Mission Bay Plan is 0.15 mgd. As discussed in Impact UT-1 of the Initial Study (p. 66), the total estimated water demand for the proposed project would be 0.1 mgd, based on compliance with current building code requirements, which require more water conservation measures than previous code versions. This estimated demand is 0.05 mgd less than the entitled demand under the Mission Bay Plan.

Water mains serving the project site have already been installed by the master developer under the Mission Bay Redevelopment Plan, and are sized to accommodate the entitled water demand along with estimated fire flow demands in accordance with the Mission Bay Infrastructure Plan. Although OCII does not anticipate that water conveyance facility upgrades will be needed, the Initial Study discloses that, if required, "[t]he construction of new water mains and appurtenances would require excavation, trenching, soil movement, and other activities typical of construction of development projects in San Francisco, and similar to those activities analyzed in the Mission Bay FSEIR for the various infrastructure improvements." Therefore, the Initial Study and Draft SEIR conclude that impacts of any improvements to the water conveyance system for the proposed project have been adequately disclosed in the 1998 Mission Bay FSEIR.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
P.2	July 26 Soluri Meserve, pp. 20-22	O-MBA7S2-24	RTC UTIL-1 RTC, p. 13.17-1	Water supply conveyance system

P.3 Appeal Issue: Appellant states that new information and/or changed circumstances prohibit the SEIR from relying on the Water Supply Assessment prepared for another project in 2013.

Summary of Appeal Response P.3: As discussed in Response RTC-UTIL-2 of the Responses to Comments document, the proposed project's water demand is less than the demand approved by the SFPUC in the Water Supply Assessment for the project as it was previously proposed at Piers 30-32 and Seawall Lot 330. The project's water demand is also less than the 0.15 mgd entitled demand for Blocks 29-32 estimated in the 1998 Mission Bay FSEIR.

The SFPUC has determined that an additional Water Supply Assessment is not necessary for the proposed project due to its relocation to Mission Bay because the following factors listed in Water Code Section 10910(h) that warrant preparation of another Water Supply Assessment do not exist:

- There are no changes to the project that result in a substantial increase in water demand.
- There has been no change in the circumstances or conditions which would substantially affect the ability of the SFPUC to provide a sufficient supply of water for the proposed project.
- There is no new information that might affect the conclusions of the previous Water Supply Assessment that sufficient water supplies are available.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
P.3	July 26 Soluri Meserve, pp. 20-22	O-MBA7S2-23 O-MBA7S2-25	RTC UTIL-2 RTC, p. 13.17-4	Water supply – water supply assessment

P.4 **Appeal Issue:** The FSEIR fails as an informational document with respect to its discussion of stormwater treatment facilities and the Project's impact.

Summary of Appeal Response P.4: The project site would be served by the Mission Bay South storm drain infrastructure, as constructed and operated by the master developer in accordance with the approved Mission Bay South Infrastructure Plan. The stormwater analysis completed for the proposed project, discussed in Impact C-UT-3 of the SEIR, p. 5.17-18, concluded that the capacity of the separated stormwater system as built is adequate to serve the project as well as other development projects that would be constructed at full build out of the Mission Bay South area. The project, either individually or cumulatively, would not require the construction of new stormwater drainage facilities or expansion of the existing facilities.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
P.4	July 26 Soluri Meserve, pp. 22-24	O-MBA7S2-26	RTC UTIL-7 RTC, p. 13.17-20	Stormwater system – impact analysis
P.4	July 26 Soluri Meserve, pp. 22-24	O-MBA7S2-27	RTC UTIL-8 RTC, p. 13.17-21	Sizing of stormwater system

P.5 **Appeal Issue:** Appellant states that the FSEIR fails as an informational document by not including a detailed statement of the project's energy demand in the DSEIR that was circulate for public review. The information contained in the FSEIR RTC constitutes new information that requires recirculation.

Summary of Appeal Response P.5: The discussion of energy impacts provided in the Initial Study (See Initial Study, pp. 122 to 126) complies with CEQA Guidelines Appendix F. The information in the RTC document provides a more detailed analysis to support the conclusions of the Initial Study and does not constitute significant new information requiring recirculation.

TOPIC Q: LAND USE

Q.1 **Appeal Issue**: The Draft SEIR fails to address and the RTC document fails to adequately respond to comments regarding the inconsistency of the Warriors Arena Project with the primary and secondary uses encompassed in and allowed by the Mission Bay South Redevelopment Plan. The OCII findings on land use consistencies are not supported by substantial evidence.

Summary of Appeal Response Q.1: As demonstrated in OCII's secondary use findings, a number of uses of the event center qualify as principal uses. Principal uses include office use, retail sales and services, restaurants, arts activities, art spaces, and outdoor activity areas. In addition to these principal uses, OCII's secondary use findings demonstrate that the event center qualifies as a secondary use under four separate secondary uses authorized within the "Commercial Industrial / Retail" land use district: nighttime entertainment, recreation building, public structure, and a use of a nonindustrial character. Furthermore, no appeal is available from OCII's approval of Resolution No. 70-2015 adopting CEQA findings, including adopting a mitigation monitoring and reporting program and a statement of overriding considerations. (Letter, T. Bohee to T. Lippe, at p. 2 (Nov. 20, 2015).) While no appeal is available from OCII's approval of Resolution Nos. 70-2015, if the Board — in response to the Certification Appeal — reverses OCII's certification of the SEIR, then "prior project approvals would be rescinded to allow CCII [OCII Commission] to, if and as necessary, adopt additional findings, revise the F[S]EIR, or amend the project approvals." (*Ibid*.)

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
Q.1	July 26 Brandt-Hawley Law Group, pp. 2-4	O-MBA6B1-5 O-MBA6B1-6	RTC LU-2 RTC, p. 13.8-9 RTC PD-1 RTC, p. 13.5-4	Land use plan consistency Mission Bay Redevelopment Plan, South Plan Area development controls
Q.1	Nov 2 Brandt-Hawley Law Group, pp 1-4	O-MBA19B3-1	LC PP-1 Exh D, p. D-121	Secondary Uses under the Mission Bay South Redevelopment Plan
Q.1	Nov 3 FSEIR Certification Hearing	PH2-Lippe-1 PH2-Lippe-5 PH2-Hawley-1	LC PP-1 Exh D, p. D-121	Secondary Uses under the Mission Bay South Redevelopment Plan

Q.2 **Appeal Issue**: The Draft SEIR fails to address and the RTC document fails to adequately respond to comments regarding the inconsistency of the Warriors Arena Project with land use policies established by the Mission Bay South Redevelopment Plan and the Design for Development.

Summary of Appeal Response Q.2: The Draft SEIR (as provided in the Initial Study) and the FSEIR Responses to Comment document demonstrate the project is consistent with the Mission Bay South Redevelopment Plan and the Design for Development. (See, e.g., RTC, pp. 13.5-4 – 13.5-10.) The final determination of consistency was made by OCII's Executive Director and the OCII Commission in adopting the secondary use findings and OCII's CEQA findings, respectively. While the SEIR includes a detailed discussion of consistency with the Plan, it should be noted that CEQA only requires an EIR to include a discussion of an applicable plan if a project is inconsistent with the plan; it does not require a discussion of reasons a "project is consistent with the relevant plans." (*City of Long Beach v. Los Angeles Unified School Dist.* (2009) 176 Cal.App.4th 889, 918-19; CEQA Guidelines, § 15125, subd. (d); see also *Pfeiffer v. City of Sunnyvale City Council* (2011) 200 Cal.App.4th 1552, 1566.)

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
Q.2	July 26 Brandt-Hawley Law Group, pp. 4	O-MBA6B1-7	RTC PP-1 RTC, p. 13.6-3	Design for Development for the Mission Bay South Project

Q.3 Appeal Issue: The Draft SEIR fails to address and the RTC document fails to adequately respond to comments regarding the inadequacy of the EIR's analysis of changing the land use planned for the Mission Bay South area by changing the planned community character as a biotechnology and medical hub with the Event Center.

Summary of Appeal Response Q.3: The Mission Bay South Redevelopment Plan does not envision buildout of the Plan Area solely as a biotechnology and medical hub; the Plan envisions Mission Bay South as a "vibrant urban community in Mission Bay South which incorporates a variety of uses including medical research, office, business services, retail, entertainment, hotel, light industrial, education, utility, housing, recreation and open space, and community facilities." (Plan, § 104(A).) The Final SEIR explained that the proposed event center would increase the intensity of the site's use and would thus alter the land use character of the project site from that analyzed in the 1998 Mission Bay FSEIR, and the presence of event center-associated spectators in the surrounding Mission Bay neighborhood would be noticeable compared to existing conditions. However, the Final SEIR also explained that the proposed project would not hinder operation of those existing uses such that adverse land use impacts may occur. The Final SEIR acknowledged other changes in land use conditions that have occurred since preparation of the 1998 Mission Bay FSEIR, but concluded that the operation of office, entertainment and retail uses at the project site would not conflict with the changed land use character. On the basis of these factors, the FSEIR determined the project would not have any new or

substantially more severe effects than those identified in the Mission Bay FSEIR relating to the existing character of the vicinity.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
Q.3	July 26 Brandt-Hawley Law Group, pp. 7	O-MBA6B1-10	RTC LU-1 RTC, p. 13.8-1	Land use character and compatibility

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TOPIC R: CULTURAL RESOURCES

R.1 **Appeal Issue**: The Draft SEIR fails to adequately address and the RTC document fails to adequately respond to comments regarding the inadequacy of the SEIR's project specific analysis and mitigation of cultural resources, and failure to provide an updated investigation of resources as part of the environmental setting.

Summary of Appeal Response R.1: The FSEIR sufficiently addressed potential impacts to archaeological resources by summarizing relevant analyses conducted as part of the program-level Mission Bay FEIR and 1998 Mission Bay FSEIR, addressing potential project-level impacts of the proposed project, and identifying feasible project-level mitigation measures, including certain new mitigation measures, to reduce potential impacts to less than significant. The FSEIR analysis updates to the analyses presented in the Mission Bay FEIR and 1998 Mission Bay FSEIR by incorporating knowledge gained through recent San Francisco investigations of deeply buried prehistoric archaeological resources in areas previously thought to have low potential for prehistoric archaeological resources.

In addition, subsequent to the publication of the Draft SEIR, new archaeological testing and monitoring of the project site was conducted in support of the project. The archaeological testing program confirmed the finding of no potential effect to legally-significant archaeological resources by the proposed project. As such, the proposed project would not result in any new or substantially more severe impacts on archaeological resources than were analyzed and disclosed in the 1998 Mission Bay FSEIR.

Appeal Code	Previous Comment/ Letter Cited	Comment Code	Response Code	Topic
R.1	July 26 Brandt-Hawley Law Group, pp. 11-14	O-MBA6B1-14	RTC CULT-1 RTC, p. 13.10-2	Archaeological Resources

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TOPIC S: CEQA FINDINGS AND STATEMENT OF OVERRIDING CONSIDERATIONS

S.1 **Appeal Issue**: The CEQA Findings adopted by the OCII are premature and unsupported. The SEIR cannot be relied upon as an informational document with respect to the analysis and public disclosure of impacts and mitigation measures regarding transportation under CEQA.

Summary of Appeal Response S.1: OCII disagrees with the Appellant. OCII has determined that the Final SEIR is adequate, accurate, and objective; the RTC document contains no significant revisions to the Draft SEIR; and the Final SEIR is in full compliance with CEQA and the CEQA Guidelines. For these reasons, the OCII Commission certified the Final SEIR (Resolution No. 69-2015). Furthermore, the OCII Commission has reviewed and considered the certified Final SEIR and has adopted the CEQA Findings for the proposed project, including the Mitigation Monitoring and Reporting Program, and a Statement of Overriding Considerations (Resolution 70-2015). Furthermore, no appeal is available from OCII's approval of Resolution No. 70-2015 adopting CEQA findings, including adopting a mitigation monitoring and reporting program and a statement of overriding considerations. (Letter, T. Bohee to T. Lippe, at p. 2 (Nov. 20, 2015).) While no appeal is available from OCII's approval of Resolution Nos. 70-2015, if the Board – in response to the Certification Appeal – reverses OCII's certification of the SEIR, then "prior project approvals would be rescinded to allow CCII [OCII Commission] to, if and as necessary, adopt additional findings, revise the F[S]EIR, or amend the project approvals." (*Ibid*.)

S.2 **Appeal Issue**: The Statement of Overriding Considerations is premature and unsupported because OCII's CEQA findings are premature and unsupported. Without a legally adequate description of the nature and extent of the project's environmental harm, OCII and the City cannot properly weigh whether the project's benefits outweigh that harm.

Summary of Appeal Response S.2: See response to Appeal Issue S.1.

office of
COMMUNITY INVESTMENT
and INFRASTRUCTURE

Exhibit B

Appeal Materials Submitted by Appellant

OCII CASE NO. ER 2014-919-97; PLANNING DEPARTMENT CASE NO. 2014.1441E – EVENT CENTER AND MIXED-USE DEVELOPMENT AT MISSION BAY BLOCKS 29-32

CERTIFIED ON NOVEMBER 3, 2015

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EXECUTIVE DIRECTOR

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November 13, 2015

RECEIVED

NOV 18 2015

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Ms Tiffany Bohee
Executive Director
Office of Community Investment and Infrastructure
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Re: Notice of Appeal and Appeal of Commission on Community Investment and Infrastructure Resolution 69-2015, certifying the Final Subsequent Environmental Impact Report for the Warriors Arena Project, and Resolution 70-2015, adopting CEQA Findings for the Warriors Arena Project, both approved on November 3, 2015.

Dear Ms Bohee:

This office represents the Mission Bay Alliance ("Alliance"), an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project").

The Mission Bay Alliance hereby appeals

1. Resolution 69-2015, approved by the Commission on Community Investment and Infrastructure on November 3, 2015, certifying the Final Subsequent Environmental Impact Report for the Warriors Arena Project, attached hereto as Exhibit 1.

2. Resolution 70-2015, approved by the Commission on Community Investment and Infrastructure on November 3, 2015, making CEQA Findings included in Resolution 70-2015, attached hereto as Exhibit 2.

This appeal is brought pursuant to Public Resources Code section 21151(c),[1] OCII Resolution 33-2015 (approved June 2, 2015), the Memorandum entitled "Appeal Filing to the Board of Supervisors In Its Capacity as Governing Body of the Successor Agency" (attached hereto as Exhibit

[1] "If a nonelected decisionmaking body of a local lead agency certifies an environmental impact report, approves a negative declaration or mitigated negative declaration, or determines that a project is not subject to this division, that certification, approval, or determination may be appealed to the agency's elected decisionmaking body, if any."

3), and San Francisco Ordinance 25-12 (File No. 120898).

The grounds for this appeal are set forth below. The MBA intends this appeal to include all of the grounds it submitted to OCII in its many written and oral comments on the SEIR and Project, including but not limited to the grounds specifically listed in this letter. (See also, July 27, 2015, letter from the Alliance to OCII at FSEIR, Vol. 6, p. Com-37.)

Regarding the written and oral comments where these grounds were raised to OCII, each topic includes an index of said documents, and where helpful to clarify where a ground was so raised, certain grounds are followed by more specific references to the documentary record.

A. PUBLIC COMMENT.

1. The OCII thwarted public comment on the SEIR.

The October 23, 2015, notice of publication of the Response to Comments informed the public they would have no further opportunity to comment on the FSEIR/RTC. But the OCII hearing agenda for November 3, 2015, published on October 29, 2015, suggested that public comment on the FSEIR/RTC would be heard at the hearing, and in fact, it was. The October 23, 2015, notice of publication is inconsistent with CEQA section 21177(a), which contemplates public comment on EIRs up to the end of the hearing at which the project is approved. Therefore, the October 23, 2015, notice of publication has frustrated the ability of the public to comment. The City and OCII should remedy this misstep by recirculating the FSEIR with full disclosure that the public may comment on the FSEIR/RTC.

- November 2, 2015, letter from Thomas Lippe to OCII and Planning Department re: Comments on Final Subsequent Environmental Impact Report for the Warriors Arena Project Re Air Quality, Transportation, Hydrology, Water Quality, Biological, and Noise Impacts ("Nov 2 Lippe FSEIR").

B. PROJECT DESCRIPTION.

1. The SEIR presents a shifting and inconsistent project description that thwarts informed decision-making and public participation about the project.

- July 26, 2015 letter from Soluri Meserve at FSEIR, Vol. 6, pp. Com-63-65;

- November 2, 2015 letter from Soluri Meserve, pp. 5-7

C. TIERING.

1. The SEIR attempts to rely on and tier from EIRs prepared in 1990 and 1998for Mission Bay

Redevelopment planning efforts, yet tiering is not permissible because the Project is different than the project described in the prior EIRs.

(a) Reliance on the 1990 and 1998 EIRs for analysis of the impact areas excluded from consideration in the SEIR was impermissible because new information and/or changes in circumstances rendered the prior analyses inapplicable to the currently proposed Project.

(b) The Record contains substantial evidence supporting a fair argument that the Project will result in potentially significant impacts associated with the resource areas excluded from consideration in the SEIR or, alternatively, supplemental review is required under Public Resources Code section 21166 for those same resource areas.

(c) The SEIR's approach to environmental review, including relying on environmental documents almost two decades old as well as numerous subsequently prepared reports and other documents prepared outside of the CEQA process fails to provide a cohesive, understandable document meeting CEQA's mandates for adequacy, completeness, and a good faith effort at full disclosure.

- June 30, 2015, oral comments by Osha Meserve at FSEIR, Vol. 6, p. PH-45;

- July 26, 2015, letter from the Brandt-Hawley Law Group, pp. 1-2;

- July 26, 2015, letter from the Mission Bay Alliance, by Thomas Lippe, Susan Brandt-Hawley, Patrick Soluri, and Osha Meserve, to OCII and Planning Department regarding EIR tiering, at FSEIR, Vol. 6, p. 33;

- June 30, 2015, oral comments by Osha Meserve at FSEIR, Vol. 6, p. PH-45;

- November 2, 2015, letter from Soluri Meserve, pp. 1-3.

D. AB900 AND ADMINISTRATIVE RECORD.

1. OCII has failed to comply with applicable requirements to compile and maintain a complete and adequately indexed Record, and also failed to timely make the Record made available online at the time of release of the DSEIR. Therefore, the Project may not rely on AB 900 litigation fast tracking.. (See Resolution 70-2015, CEQA Findings, pp. 14, 17.)

- July 9, 2015, letter from Soluri Meserve at FSEIR, Vol. 6, p. Com-30;

- July 26, 2015, letter from the Mission Bay Alliance, by Thomas Lippe, Susan Brandt-Hawley, Patrick Soluri, and Osha Meserve to OCII and Planning Department regarding litigation streamlining

under AB 900 at FSEIR, Vol.6, p. Com-35;

- November 2, 2015, letter from Soluri Meserve, p. 3.

E. ALTERNATIVES.

1. The Draft SEIR fails to adequately address and the Final SEIR fails to adequately respond to comments regarding the inadequacy of EIR analysis of the No Project alternative.

- July 26, 2015, DSEIR comment letter from Susan Brandt-Hawley, at FSEIR, Vol.6, p. COM-44, ALT-2.

2. The Draft SEIR fails to adequately address and the Final SEIR fails to adequately respond to comments regarding the failure to consider a potentially-feasible off-site alternative.

- July 26, 2015, DSEIR comment letter from Susan Brandt-Hawley, at FSEIR, Vol.6, p. Com-44-45, ALT-3.

3. The OCII findings regarding the feasibility of alternatives are not supported by substantial evidence, including the findings regarding the off-site alternative proposed by the Alliance near Pier 80.

- November 3, 2015, letter to OCII from Susan Brandt-Hawley.

- October 13, 2015, letter to OCII from Susan Brandt-Hawley.

F. THE SEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO AIR QUALITY IMPACTS.

1. The Alliance's Air Quality related grounds for appeal are set forth in detail in the following documents:

- July 26, 2015, letter from Thomas Lippe to OCII and Planning Department re Air Quality Impacts including all exhibits identified in and attached to said letter ("July 26 Lippe") at FSEIR, Vol.6, p. Com-86;

- July 19, 2015, letter from Greg Gilbert of Autumn Wind Associates ("July 19 Gilbert") at FSEIR, Vol.6, p. Com-96;

- July 20, 2015, letter from Paul Rosenfeld and Jessie Jaeger of SWAPE ("July 20 SWAPE") at FSEIR, Vol.6, p. Com-104;

- Nov 2 Lippe FSEIR;

- October 30, 2015, letter from Greg Gilbert of Autumn Wind Associates, submitted to OCII on November 3, 2015 ("October 30 Gilbert");

- November 2, 2015, letter from John Farrow ("Nov 2 Farrow FSEIR"), attached as Exhibit A to Lippe Nov 2 FSEIR,

- November 2, 2015, letter report from Paul Rosenfeld and Jessie Jaeger of SWAPE to Thomas Lippe, attached as Exhibit 1 to Nov 2 Farrow FSEIR ("Nov 2 SWAPE");

- "Health Risk Assessments for Proposed Land Use Projects," California Air Pollution Control Officers Association 2009, attached as Exhibit 2 to Nov 2 Farrow FSEIR.[2]

- CEQA Air Quality Handbook, A Guide for Assessing the Air Quality Impacts for Projects Subject to CEQA Review, San Luis Obispo Air Pollution Control District 2012, attached as Exhibit 3 to Nov 2 Farrow FSEIR.[3]

- Mission Bay Land Use Plan, November 2005, attached as Exhibit 4 to Nov 2 Farrow FSEIR.[4]

- "Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessment." Office of Environmental Health Hazard Assessment, February 2015, attached as Exhibit 5 to Nov 2 Farrow FSEIR.[5]

- Adoption of the Revised Air Toxics Hot Spots Program Technical Support Document for Cancer Potency Factors, Office of Environmental Health Hazard Assessment, June 1, 2009, attached as Exhibit 6 to Nov 2 Farrow FSEIR.[6]

- Adoption of the Revised Air Toxics Hot Spots Program Risk Assessment Guidelines: Revised Technical Support Document for Exposure Assessment and Stochastic Analysis, Office of

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[2]http://www.capcoa.org/wpcontent/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf.

[3]http://www.slocleanair.org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20Sept%202015%29.pdf.

[4]http://sfocii.org/Modules/ShowDocument.aspx?documentid=783.

[5]http://oehha.ca.gov/air/hot_spots/hotspots2015.html.

[6]http://www.oehha.ca.gov/air/hot_spots/tsd052909.html.

Environmental Health Hazard Assessment, August 27, 2012, attached as Exhibit 7 to Nov 2 Farrow FSEIR.[7]

- Technical Support Document for Exposure Assessment and Stochastic Analysis, Office of Environmental Health Hazard Assessment, August 2012, attached as Exhibit 8 to Nov 2 Farrow FSEIR.[8]

2. The City cannot use the SEIR's thresholds of significance for criteria air pollutants until it formally adopts them in a rule-making procedure. (July 26 Lippe, p. 3; July 19 Gilbert, p. 14.)

3. The SEIR's numerical construction and operational thresholds of significance for criteria pollutants (ozone precursors, PM10, PM2.5), toxics air contaminants, and health risk and its analysis of the significance of the Project's incremental and cumulative impacts from these pollutants for both construction and operation are invalid, based on legal errors and not supported by substantial evidence. (July 26 Lippe; July 19 Gilbert; July 20 SWAPE; Nov 2 Lippe FSEIR; October 30 Gilbert; Nov 2 Farrow FSEIR, Nov 2 SWAPE.)

(a) Air quality thresholds of significance for ozone precursors used in the SEIR are borrowed from another agency and not supported by substantial evidence. (July 26 Lippe, pp. 4-9; July 19 Gilbert, pp. 3-6; October 30 Gilbert, pp. 2-6.)

(b) Air quality thresholds of significance for ozone precursors used in the SEIR are based on inapplicable, outdated, non-scientific New Source Rule ("NSR) values. (July 26 Lippe, pp. 4-9; July 19 Gilbert, pp. 3-6; October 30 Gilbert, pp. 2-6.)

(c) The DSEIR's impact assessments for construction related criteria pollutants (ozone precursors, PM10, PM2.5) and TAC emissions are invalid. (July 26 Lippe, pp. 9-10; July 19 Gilbert, pp. 6-7);

(1) The SEIR underestimates the Project's construction related emissions by incorrectly using a default hauling trip length of 20-miles, provided by the California Emissions Estimator Model ("CalEEMod"), rather than actual trip length, to determine the on-road hauling emissions that would occur during construction. (July 26 Lippe, p. 10; July 20 SWAPE, 2-6.)

(d) The DSEIR's impact assessments for operational criteria pollutants (ozone

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[7]http://www.oehha.ca.gov/air/hot_spots/tsd082712.html.

[8]http://www.oehha.ca.gov/air/hot_spots/pdf/2012tsd/Chapter3_2012.pdf.

precursors, PM10, PM2.5) and TAC emissions are invalid. (July 26 Lippe, pp. 10-11; July 20 SWAPE, 2-6.)

(1) The SEIR fails to include vehicle emissions from Warriors game traffic in its analysis of operational emissions. (July 26 Lippe, p. 11; July 19 Gilbert, p. 10; October 30 Gilbert, pp. 6-10.)

The DSEIR's impact assessment for operational ozone precursor emissions is also misleading because it omits from its quantitative tally of criteria pollutants the emissions the Project will generate in San Francisco and the Mission Bay neighborhood from basketball game-associated "vehicle miles traveled" (DSEIR, p. 5-37.) The DSEIR's rationale for this startling omission is that moving the Warriors games from Oakland to San Francisco will reduce the same number of "vehicle miles traveled" in Oakland that the Project will generate in San Francisco and the Mission Bay neighborhood.

This rationale is based on the unstated, but incorrect, assumption that the environmental setting at Oracle Arena and the Mission Bay site are identical. These settings are very different, in many crucial respects. First and foremost, the Mission Bay neighborhood and the surrounding areas of San Francisco are populated by San Franciscans, not Oaklanders. The residents, citizens, and registered voters of San Francisco are entitled to know what the Project's air quality impacts will be *on them*, regardless of whether the residents, citizens, and registered voters of Oakland will experience an air quality benefit as a result of the move. (July 26 Lippe, pp. 10-11.)

(2) To the extent the SEIR's thresholds of significance are invalid, Mitigation Measure M-AQ-2b fails to reduce ozone precursor emissions to less-than-significant levels and SEIR does not consider the feasibility or effectiveness of more robust mitigation strategies that could reduce ozone precursor emissions further below the (invalid) thresholds. (See DSEIR, p. 5.4-39, Table 5.4-9, "Estimated Emissions Reduction Required".) (July 26 Lippe, p. 12.)

4. Mitigation Measure M-AQ-1 does not comply with CEQA's legal requirements.

(a) The SEIR attempts to mitigate the Project's criteria air pollutant emissions by limiting the offroad equipment used during construction to machinery equipped with, at a minimum, Tier 2 engines with 40 percent NOx verified diesel emission control strategies (VDECS), and at a maximum, Tier 4 or Tier 4 interim engines (Volume 2, p. 5.4-32). However, the SEIR does not demonstrate the feasibility of this proposed measure. The

Project will need to acquire approximately 195 pieces of equipment outfitted with Tier 2 and/or Tier 4 engines. Due to the limited supply of cleaner-burning off-road equipment, the implementation of this measure, in its entirety, is highly unrealistic. As a result, the proposed Project should not rely on this mitigation measure to reduce emissions; rather the Project should pursue additional, feasible mitigation measures other than Tier 2/Tier 4 construction equipment to reduce the Project's criteria air pollutant emissions. (July 26 Lippe, p. 9; July 20 SWAPE, 6-8; October 30 Gilbert, pp. 10-14.)

(b) M-AQ-1 includes a limit on idling time of two minutes, and provides exceptions to this limit as provided in state law (DSEIR, p. 5.4-36), but fails to describe what these exceptions are. The DSEIR must fully describe this measure in order for the public and City decision makers to assess its effectiveness. (July 26 Lippe, p. 10.)

(c) M-AQ-1 is unenforceable and places inappropriate reliance on project sponsor for interpretation and compliance determinations. (July 26 Lippe, p. 10; July 19 Gilbert, pp. 7-10; October 30 Gilbert, pp. 14-16.)

(d) The Response to Comment AQ-6a is Inadequate. (Nov 2 Lippe FSEIR, pp. 2-3; October 30 Gilbert, p. 11.)

(e) The Response to Comment AQ-6e is Inadequate. (Nov 2 Lippe FSEIR, pp. 3-5; October 30 Gilbert, pp. 14-16.)

5. Mitigation Measure M-AQ-2b does not comply with CEQA's legal requirements and the response to this comment is Inadequate. (Nov 2 Lippe FSEIR, pp. 5-6; October 30 Gilbert, pp. 17-19; 19-21.)

(a) The per ton charge for emission offsets is too low to achieve complete offset of the Project's emissions (Comment AQ-7). (July 26 Lippe, pp. 11-12; October 30 Gilbert, pp. 17-19.)

(b) Mobile-based emission offsets sources are too short lived to completely offset Project generated emissions. (July 26 Lippe, pp. 12-13; July 19 Gilbert 14-15; October 30 Gilbert, pp. 19-21.)

6. The SEIR's cancer and health risk assessment for toxic air contaminants is invalid, based on legal errors and not supported by substantial evidence.

(a) The City's reliance on the EPA's judgment of "acceptable" cancer risk is legally flawed for several reasons. First, the City relies on a simplistic misrepresentation of actual EPA policy. Second, even if EPA policy is what the City implies it is, the DSEIR errs as a

matter of CEQA law by using the EPA's judgment of "acceptable" cancer risk to determine the significance of the Project's impacts. (July 26 Lippe, pp. 13-18.)

(b) The SEIR does not assess the Project's individual excess cancer risk to the Bay Area Air Quality Management District's (BAAQMD) 10 in one million significance threshold. Rather, it determines the Project's significance by comparing the cumulative cancer risk (background risk plus Project risk) to BAAQMD's cumulative risk threshold of 100 in one million. (July 26 Lippe, pp. 13-18.)

(c) The DSEIR fails to utilize BAAQMD's cumulative PM2.5 threshold of 0.8 ìg/m3. (July 26 Lippe, pp. 18-19; July 20 SWAPE, pp. 10-11.)

(d) The FSEIR fails to provide a project-specific health risk assessment for the Project. The thresholds of significance and the analysis in the FSEIR provide only a cumulative impact analysis. Thus, the FSEIR fails to consider whether the Project's toxic air contaminant (TAC) emissions are, by themselves, a significant impact. Although the FSEIR fails to identify a threshold of significance for project-specific effects, Project-caused excess TAC cancers are more than four times the threshold used by most California air districts to determine the significance of an individual project's impacts. (Nov 2 Farrow FSEIR, pp. 1-3; July 20 SWAPE, pp, 8-10; Nov 2 SWAPE, pp. 2-4.)

(e) The SEIR's assessment of cumulative TACs is invalid because it fails to include all sources of related impacts. The FSEIR fails to include all foreseeable sources of TAC emissions in its cumulative impact analysis, as it omits foreseeable future construction and operation of developments approved in the vicinity of the Project. The health risk assessment should be revised to include TAC emissions from these sources, as they could potentially result in a significant cumulative impact. (Nov 2 Farrow FSEIR, p. 3; Nov 2 SWAPE, pp. 4-12.)

(f) Project health risks are underestimated using older standards. The FSEIR fails to incorporate updated child breathing rates, set forth by OEHHA, in its health risk assessment. Even though OEHHA published these higher breathing rates for children in 2012 and recommends that TAC analyses use these rates, and even though comments requested that the FSEIR provide an updated analysis using these breathing rates, the FSEIR failed to do so. (July 19 Gilbert, pp. 13-14; Nov 2 Farrow FSEIR, pp. 4-5; Nov 2 SWAPE, pp. 12-15.)

7. The SEIR's impact assessment for construction-related dust pollution is based on legal errors or is not supported by substantial evidence. (July 26 Lippe, pp. 1-3.)

8. Construction and operational mitigation options have not been thoroughly reviewed for diesel alternatives. (July 19 Gilbert, pp. 6-7; October 30 Gilbert, p. 16-17.)

9. Operational mitigation measure for electrical outlets is vague and unenforceable. (July 19 Gilbert, p. 10.)

10. Construction emissions from wastewater improvements have not been adequately Reviewed in the SEIR. (See July 24, 2015, letter from Thomas Lippe to OCII re Hydrology, Water Quality and Biological Impacts, pp. 1-4; July 19 Gilbert, pp. 2-3.)

11. Changes to the project since publication of the DSEIR require recirculation of a revised DSEIR due to new and more severe significant impacts. (Lippe Nov 2 FSEIR, pp. 6-7.)

12. New Information regarding Mitigation Measure M-AQ-2b since publication of the DSEIR require recirculation of a revised DSEIR. ((Lippe Nov 2 FSEIR, pp. 5-6; October 30 Gilbert, pp. 17-18; Oral testimony of Thomas N. Lippe at November 3, 2015, OCII hearing).

By letter dated November 2, 2015, to the OCII, the Bay Area Air Quality Management District announced that it would not participate in Mitigation Measure M-AQ-2b's offset plan because the City and Project Sponsor refuse to agree to BAAQMD's offset fees.

The City cannot find that "Impact AQ-4: Potential conflicts with BAAQMD's 2010 Clean Air Plan" is less than significant with mitigation because the City and Project Sponsor refuse to agree to BAAQMD's offset fees per Mitigation Measure M-AQ-2b. (See Exhibits 4 and 5.)

There is also no evidence that the "Option 2" offset within Mitigation Measure M-AQ-2b is feasible. There are too many unanswered questions regarding Option 2, including lack of assured verification of offsets to ensure their effectiveness, and lack of assurance that offset sources are available in the quantity required. BAAQMD's offset program at least answers some, if not all, of these questions.

The City cannot find that all feasible mitigation measures that would substantially reduce "Impact AQ-1: Impacts of Criteria Air Pollutants from Construction" have been adopted as required by CEQA section 21081, because there is no evidence that paying the offset fees demanded by BAAQMD is infeasible. Also, as discussed above, there is no evidence that the "Option 2" offset idea within Mitigation Measure M-AQ-2b is feasible; therefore, it is not an adequate substitute for BAAQMD's offset program. This also applies to Impact AQ-2 [Impacts of Criteria Air Pollutants from Project Operations]; and Impact C-AQ-1 [Project Contribution to Regional Air Quality Impacts].

G. THE SEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO TRANSPORTATION IMPACTS.

1. The Alliance's Transportation-related grounds for appeal are set forth in detail in the following documents:

- July 27, 2015, letter from Thomas Lippe to OCII and Planning Department re Transportation Impacts ("July 27 Lippe") at FSEIR, Vol. 6, p. Com-117, , including all exhibits listed on page 20 thereof, including:

- Exhibit 1 thereto, July 23, 2015, letter to Tom Lippe from traffic engineer Dan Smith ("July 23 Smith") at FSEIR, Vol. 6, p. Com-127; and

- Exhibit 2 thereto, July 21, 2015, letter to Tom Lippe from traffic engineer Larry Wymer ("July 21 Wymer") at FSEIR, Vol. 6, p. Com-141;

- Nov 2 Lippe FSEIR, including:

- As Exhibit F thereto, a November 2, 2015, letter from Dan Smith ("Nov 2 Smith FSEIR")

- As Exhibit G thereto, a November 2, 2015, letter from Larry Wymer ("Nov 2 Wymer FSEIR").

- November 10, 2015, letter from Dan Smith to Tom Lippe re Emergency Access, which is attached hereto as Exhibit 4 ("Nov 10 Smith FSEIR Access").

- November 10, 2015, letter from Dan Smith to Tom Lippe re Port Parking Facilities, which is attached hereto as Exhibit 5 ("Nov 10 Smith FSEIR Port").

- November 13, 2015, letter from Dan Smith to Tom Lippe re King Street Electrical Work, which is attached hereto as Exhibit 6 ("Nov 13 Smith FSEIR King St").

2. The SEIR fails to assess the Project's traffic impacts on the entire affected environment.

(a) The City's selections of intersections (and freeway ramps) studied in the DSEIR excludes intersections it knew or should have known would potentially be significantly impacted by the project.

- July 27 Lippe, p. 1; July 23 Smith, p. 8; July 21 Wymer, pp. 1-12; Nov 2 Smith FSEIR pp. 5-8; Nov 2 Wymer FSEIR.

3. The SEIR fails to disclose the severity of the Project's impacts on intersections and freeway ramps which the project will cause to deteriorate to Level of Service (LOS) F.

- July 27 Lippe, p. 3; July 23 Smith, p. 11; July 21 Wymer, p. 12-13; Nov 2 Smith FSEIR p. 16-18.

4. The SEIR fails to identify the significance and severity of the Project's impacts on intersections where the Project will use Parking Control Officers.

- July 27 Lippe, p. 4; July 23 Smith, p. 11; Nov 2 Smith FSEIR pp. 16-18.

5. The SEIR's analysis of the project's construction-related traffic congestion and delay impacts is legally flawed because it is based on invalid criteria, it fails to lawfully assess the Project's cumulative construction period impacts, and it improperly defers the development of mitigation measures to reduce the Project's construction-related traffic impacts to less than significant.

- July 27 Lippe, pp. 5-7; July 23 Smith, p. 15; Nov 2 Smith FSEIR p. 22.

6. The SEIR's Analysis of the Project's Operational Traffic and Transit Congestion and Delay Impacts Is Legally Flawed.

(a) The SEIR understates traffic and transit volumes in the PM peak period of 4:00 to 6:00 PM by using "time of arrival" at the Arena as a proxy measurement for "time of travel."

- July 27 Lippe, p. 7; July 23 Smith, p. 1; July 21 Wymer, p. 12-13; Nov 2 Smith FSEIR p. 13-16.

(b) The DSEIR only analyzes impacts of weeknight basketball games that start at 7:30 PM, not at other start times closer to the PM peak.

- July 23 Smith, p. 5; July 21 Wymer, pp. 12-13; Nov 2 Smith FSEIR pp. 3-5.

7. The SEIR's Analysis of the Project's Cumulative Impacts Does Not Comply With CEQA.

(a) The 5% threshold of significance for impacts at intersections and freeway ramps operating at LOS E or F violates CEQA.

- July 27 Lippe, p. 11.

(b) The year 2040 baseline for assessing the significance of the Project's cumulative impacts violates CEQA and the SEIR's excessively distant time frame and massive development assumptions masks significance of project's nearer term cumulative impacts.

- July 27 Lippe, p. 12; July 23 Smith, pp. 25-26; Nov 2 Smith FSEIR pp. 20-22.

(c) The SEIR's use of a "projection" based approach to the Project's cumulative impacts is misleading.

- July 27 Lippe, p. 13.

(d) The SEIR's cumulative analysis fails to consider and analyze the project in the context of the City's proposal to remove the northern portion of I-280 as far south as the Mariposa Street interchange.

- July 23 Smith, p. 13.

8. The SEIR's methodology for analyzing project impacts on the transit system is legally flawed. The SEIR's use of transit screenline and route capacities is misleading and unsupported, so the City's process for evaluating a project's impacts on public transit evades disclosure of significant impacts. The SEIR's use of a project specific threshold of significant impact of 100 percent of screenline capacity rather than the normal 85 percent of screenline capacity exacerbates overcrowding impacts on the regular user community of and is unsupported and unwarranted.

- July 27 Lippe, p. 14; July 23 Smith, pp. 5-8; Nov 2 Smith FSEIR p. 18-20.

9. The SEIR Unlawfully Defers the Development of Mitigation Measures.

- Mitigation Measure M-TR-2b: Additional Strategies to Reduce Transportation Impacts. (DSEIR, p. 1-15.)

- Mitigation Measure E.47: Transportation System Management Plan. (DSEIR, p. 1-17.)

- Mitigation Measure M-TR-5a: Additional Caltrain Service. (DSEIR, p. 1-18.)

- Mitigation Measure M-TR-5b: Additional North Bay Ferry and/or Bus Service. (DSEIR, p. 1-19.)

- Mitigation Measure M-TR-9a: Crane Safety Plan for Project Construction. (DSEIR, p. 1-20.)

- Mitigation Measure M-TR-9d: Event Center Exterior Lighting Plan. (DSEIR, p. 1-21.)

- Mitigation Measure M-TR-11b: Participation in the Ballpark/Mission Bay Transportation Coordinating Committee. (DSEIR, p. 1-22.)

- Mitigation Measure M-TR-11c: Additional Strategies to Reduce Transportation Impacts of Overlapping Events. (DSEIR, p. 1-23.)

- Mitigation Measure M-TR-13: Additional Muni Transit Service during Overlapping Events. (DSEIR, p. 1-24.)

- Mitigation Measure M-TR-14: Additional BART Service to the East Bay during Overlapping Events. (DSEIR, p. 1-24.)

- Mitigation Measure M-TR-18: Auto Mode Share Performance Standard and Monitoring. (DSEIR, p. 1-25.)

• July 27 Lippe, p. 16; July 23 Smith, pp. 17-25.

10. Mitigation measures are vague, insubstantive, unresponsive to the impact purportedly addressed or do not qualify as mitigation under ceqa.

- Improvement Measure I-TR-1

- Mitigation Measure M-TR-2a

- Mitigation Measure M-TR-2b

- Impact and Mitigation Measure TR-5a

- Impact and Mitigation Measure TR-5b

• July 23 Smith, pp. 17-25.

11. The SEIR impermissibly characterizes mitigation measures for the Project's transportation impacts as elements or components of the Project thereby failing to adequately analyze and disclose the Project's potentially significant impacts separate from the analysis of the feasibility and effectiveness of proposed mitigation measures.

• November 3, 2015, letter from Soluri Meserve to SFMTA, pp. 1-3;

• July 26, 2015, letter from Dan Smith of Smith Engineering & Management at FSEIR, Vol. 6, pp. Com-135-139;

• July 27 letter from Thomas Lippe at FSEIR, p. Com-126.

12. By characterizing mitigation measures for the Project's transportation impacts as elements or components of the Project, the SEIR fails to set forth enforceable mitigation.

• November 3, 2015, letter from Soluri Meserve to SFMTA, pp. 1-3;

• July 26, 2015, letter from Dan Smith of Smith Engineering & Management at FSEIR, Vol. 6, pp.

Com-135-139;

- July 27 letter from Thomas Lippe at FSEIR, p. Com-126.

13. The SEIR relies on the Project's contribution to a fair-share fee program to mitigate the Project's transportation impacts without adequately disclosing the required information about such mitigation.

- November 3, 2015, letter from Soluri Meserve to SFMTA, pp. 1-4;

- November 2, 2015, letter from Dan Smith of Smith Engineering & Management, pp. 2-3.

Urban Decay

14. The Transit Analysis understates impacts because it relies on stale transit baseline data.

- July 23 Smith, p. 9; Nov 2 Smith FSEIR pp. 9-13.

15. The Traffic Analysis understates impacts because it relies on stale traffic baseline data.

- July 23 Smith, p. 10; Nov 2 Smith FSEIR pp. 9-13.

16. The SEIR's discussion of transportation impacts is incomplete.

- July 27 Lippe, p. 18; Nov 2 Smith FSEIR p. 1-3;

17. Complex interrelated issues are not addressed in the SEIR

- July 23 Smith, p. 12.

18. There is no evidence the DSEIR considered the disruptive impacts of the at-grade rail crossing of 16th Street on intersection LOS at the intersections of 16th and 3rd and 16th and 7th Streets.

July 23 Smith, p. 14.

19. The Project's truck loading and truck staging provisions are inadequate.

- July 23 Smith, p. 14; Nov 2 Smith FSEIR p. 22.

20. The SEIR concludes, without adequate foundation, that the project would not have an adverse impact on emergency access to UCSF hospitals.

- July 23 Smith, p. 16; Nov 2 Smith FSEIR p. 22; Nov 10 Smith FSEIR Access.

21. New information since publication of the DSEIR require recirculation of a revised DSEIR because the omission of this information from the DSEIR rendered public comment meaningless.

Section 13.11.6 – Response TR-5 of the FSEIR/RTC responds to comments by BART (Comments A-BART-1, -4, -5, -7, - 8, and -9) and the Alliance (O-MBA10L4-19) supplying a station-level analysis of impacts on BART that was critically missing in the DSEIR. This station-level analysis provides completely new information, including Table 13.11-2, and conclusions that were previously missing. Consequently, the information should be available for review for the full 45 day review period in Recirculated Draft status under CEQA.

- Nov 2 Smith FSEIR p. 22.

22. Changes to the project since publication of the DSEIR require recirculation of a revised DSEIR due to new and more severe significant impacts. The new project variant will dig up King Street for six months and Third Street for fourteen months. (FSEIR, pp. 12-11, 12-25.) This will exacerbate construction phase impacts on traffic, either creating new significant impacts not previously identified in the SEIR.

- Nov 13 Smith FSEIR King St.

H. THE SEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO HYDROLOGY, WATER QUALITY, AND BIOLOGICAL IMPACTS.

1. The Alliance's Hydrology, Water Quality, and Biological Impacts related grounds for appeal are set forth in detail in the following documents:

- July 24, 2015, letter from Thomas Lippe to OCII and Planning Department re Impacts on Hydrology, Water Quality, and Biological Resources ("July 24 Lippe") at FSEIR, Vol. 6, p. Com-147, including:

- July 21, 2015, letter to Thomas Lippe from Matt Hageman ("July 21 Hageman") at FSEIR, Vol. 6, p. Com-155;

- July 21, 2015, letter to Thomas Lippe from Erik Ringelberg and Kurt Balasek ("July 21 Ringelberg") at FSEIR, Vol. 6, p. Com-159;

- July 22, 2015, letter report by geotechnical engineer Martin Cline and Kurt Balasek, regarding Hazardous Materials ("July 22 Cline "), at FSEIR, Vol. 6, p. Com-70 (attached as Exhibit B to July

26, 2015 Soluri Meserve letter to OCII re DSEIR at FSEIR, Vol. 6, p. Com-48.)

- Nov 2 Lippe FSEIR;

- As Exhibit H thereto, November 2, 2015, letter to Thomas Lippe from Matt Hageman ("Nov 2 Hageman").

- As Exhibit I thereto, a November 2, 2015, letter from Erik Ringelberg and Kurt Balasek of BSK Associates ("Nov 2 BSK")

- As Exhibit J thereto, a November 2, 2015, letter from Erik Ringelberg ("Nov 2 Ringelberg").

- As Exhibit K thereto, a July 16, 2015, BSK Technical Memorandum Regarding the Proposed Warrior Arena Wetland Features by Erik Ringelberg and Kevin Grove ("July 16 BSK Wetland").

- As Exhibit L thereto, an October 29, 2015, Draft Waters and Wetland Delineation Report Proposed Mission Bay Development, Blocks 29-32 San Francisco, California, by Erik Ringelberg and Kevin Grove of BSK Associates ("Oct 29 BSK Wetland").

2. The DSEIR is not sufficient as an informational document with respect to the project's wastewater treatment infrastructure impacts, and the Response to this comment (UTIL-3) is inadequate.

- July 26 Lippe, pp. 1-4; Nov 2 Lippe FSEIR, pp. 8-10;

3. The DSEIR is not sufficient as an informational document with respect to the Project's contaminated wastewater (i.e. combined sewage and stormwater) impacts on San Francisco Bay water quality or biological resources (including from inadequately treated sewage and toxic chemicals (e.g., PCB's and metals), and the FSEIR's Response to these comments (Hyd-3 - Hyd-6) are inadequate.

- July 26 Lippe, pp. 4-10; Nov 2 Lippe FSEIR, pp. 10-12; July 21 Hageman; Nov 2 Hageman; Nov. 2 BSK; July 22 Cline, pp. 1-15.

4. The DSEIR is not sufficient as an informational document with respect to project impacts on biological resources, including wetlands and wildlife.

(a) The SEIR's exclusion of the Project's impacts on biological resources is erroneous because there is substantial evidence supporting a fair argument the Project may have a significant effect by destroying the on-site wetland. And even if CEQA section 21166 applies, CEQA requires including this issue in the subsequent EIR because the presence of

the wetland is a change in circumstances since certification of the 1998 FSEIR that gives rise to the potential for new significant effects not previously identified.

(b) The SEIR's exclusion of the Project's impacts on biological resources is erroneous because the lead agency failed to prepare any CEQA document that adequately describes the Project's environmental setting to allow an assessment of the Project's impacts on biological resources.

(c) The SEIR's failure to analyze wetland resources on the Project site resulted in the failure to disclose the Project's need for a federal Clean Water Act section 404 fill permit, as well as a consistency determination under the Coastal Zone Management Act.

- July 26 Lippe, pp. 11-15; July 16 BSK Wetland; July 21 Ringelberg; Oct 29 BSK Wetland; Nov 2 Lippe FSEIR, pp. 10-15; Nov 2 BSK; Nov 2 Ringelberg; October 7, 2015, letter to OCII from Soluri Meserve regarding Clean Water Act 404 and CZMA Consistency.

5. The SEIR fails to include all feasible mitigation measures to lessen or mitigate impacts to state and/or federal jurisdictional wetland features.

- July 26 Lippe, pp. 11-15; July 16 BSK Wetland; July 21 Ringelberg; Oct 29 BSK Wetland; Nov 2 Lippe FSEIR, pp. 12-13; Nov 2 BSK; Nov 2 Ringelberg.

6. The SEIR fail to include all feasible mitigation to lessen or mitigate the significant and unavoidable cumulative impact associated with exceeding of the capacity of the Mariposa Pump Station.

- July 26 Lippe, pp. 1-10; Nov 2 Lippe FSEIR, pp. 8-12; Nov 2 BSK; Nov 2 Ringelberg.

7. The DSEIR is not sufficient as an informational document with respect to the Project's flooding risk and inundation impacts.

- July 26 Lippe, pp. 15-16.

I. THE SEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO NOISE IMPACTS.

1. The Alliance's Noise related grounds for appeal are set forth in detail in the following documents:

- July 25, 2015, letter from Thomas Lippe to OCII and Planning Department re Noise Impacts ("July 25 Lippe"), at FSEIR, Vol. 6, p. Com-109, including all the exhibits attached thereto,

including:

- July 24, 2015, letter to Thomas Lippe from acoustic engineer Frank Hubach ("July 24 Hubach") at FSEIR, Vol. 6, p. Com-113,

- Nov 2 Lippe FSEIR, including

- As Exhibit S thereto, November 2, 2015, letter to Thomas Lippe from acoustic engineer Frank Hubach ("Nov 2 Hubach")

2. The SEIR rigidly adheres to the regulatory scheme of the San Francisco Noise Ordinance in assessing the significance of Project generated noise, and this is true of both impact and non-non-impact equipment to be sued in construction and operational nosie sources such as crowds and traffic. This is an error of law, because it injects the question of what is "allowed" into the determination of "significance." The question of what is allowed is the final step in the CEQA process, and involves weighing considerations relating to the social and economic benefits of the Project.

Injecting consideration of what is "allowed" into the first step subverts the integrity of the entire analysis. For projects for which an EIR has been prepared, both the EIR and the mandatory findings required by CEQA section 21081, the analysis starts with whether an impact is significant.

A finding of significance triggers the obligation to identify and adopt feasible mitigation measures that are effective in substantially reducing the significant impact. Once all feasible and effective mitigation measures have been identified and adopted, if the impact remains significant, the agency may approve the project if it finds that social or economic considerations outweigh environmental harm. Each of these steps in the analysis is distinct.

The RTC's responses to comments conflate and confuse these steps, and thereby undermine the integrity of the analysis. This conflation of the distinct steps in the analysis explains why the FSEIR/RTC's insistence on using the San Francisco Police Code's regulatory requirements (i.e., the City's final resolution of what is allowed and what is not allowed) as thresholds of significance is inconsistent with CEQA. The Police Code's regulatory requirements reflect the City's effort to balance the protection of people from harmful noise against the need for social and economic activity. That balance does not necessarily reflect the point at which impacts become significant. Under CEQA, such balancing is also required, but not where significance is determined. In short, even where the lead agency believes an activity should be "allowed" because the social or economic considerations outweigh the environmental harm, the EIR must still disclose whether the impact is significant.

- July 25 Lippe; July 24 Hubach, Nov 2 Lippe FSEIR, pp. 1-2, 14-15; Nov 2 Hubach.

3. The SEIR uses "ambient plus increment" thresholds of significance for all noise impacts. This is a legal error because as described by Mr. Hubach in the context of operational noise impacts (Impact NO-5), the DSEIR uses a series of "ambient plus increment" thresholds. As discussed by Mr. Hubach, using "ambient plus increment" thresholds where existing noise levels are already high:

> disregards the fact the Project will make severe conditions worse. In addition, using these "ambient plus increment" thresholds for operational noise results in an unsustainable gradual increase in ambient noise. It is a formula for ever-increasing noise levels because each new project establishes a new, higher, baseline; then when the next project is approved, the incremental change will be added to the new baseline.

(July 24 Hubach, p. 5.)

By ignoring the severity of existing noise levels and only looking to the "de minimis" nature of the Project's incremental effect, the DSEIR's noise impact determinations violate CEQA. (See *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 120 ("*CBE*") ["[T]he relevant question"... is not how the effect of the project at issue compares to the preexisting cumulative effect, but whether "any additional amount" of effect should be considered significant in the context of the existing cumulative effect. [footnote omitted] In the end, the greater the existing environmental problems are, the lower the threshold should be for treating a project's contribution to cumulative impacts as significant. [footnote omitted]"].)[9] *Communities* and *Kings County* teach that the significance of a cumulative impact depends on the environmental setting in which it occurs, especially the severity of existing environmental harm.

- July 25 Lippe; July 24 Hubach, Nov 2 Lippe FSEIR, pp. 1-2, 14-15; Nov 2 Hubach.

4. The SEIR fails to use thresholds of significance base don human health and welfare (e.g., the thresholds stated in San Francisco Police Code section 2909(d) without the narrow regulatory constraints of that ordinance, or the World Health Organization (WHO) standards referenced in the Alliance's comment letter.

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[9] *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 720-21 ["They contend in assessing significance the EIR focuses upon the ratio between the project's impacts and the overall problem, contrary to the intent of CEQA.... We find the analysis used in the EIR and urged by GWF avoids analyzing the severity of the problem and allows the approval of projects which, when taken in isolation, appear insignificant, but when viewed together, appear startling. Under GWF's 'ratio' theory, the greater the overall problem, the less significance a project has in a cumulative impacts analysis. We conclude the standard for a cumulative impacts analysis is defined by the use of the term 'collectively significant' in Guidelines section 15355 and the analysis must assess the collective or combined effect of energy development"].)

• July 25 Lippe, pp. 4-7; July 24 Hubach, pp. 3-6, Nov 2 Lippe FSEIR, pp. 1-2, 14-15; Nov 2 Hubach.

J. THE SEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO GREENHOUSE GAS EMISSION IMPACTS.

1. The SEIR's conclusion that greenhouse gas ("GHG") emissions are less than significant is not supported by substantial evidence.

• June 30, 2015, oral comments by Osha Meserve and Susan Vaughn at FSEIR, Vol. 6, PH-44 - PH-45;

• July 26, 2015, letter from Soluri Meserve, pp. 2-6;

• July 27, 2015, letter from Susan Vaughn, Sierra Club, FSEIR, Vol. 6, COM-180 - COM 181;

• July 20, 2015, letter report by air quality professionals Patrick Sullivan, CPP, REPA, and John Henkelman, regarding Greenhouse Gas Emissions, pp. 1-34 (Exhibit A to July 26, 2015 Soluri Meserve letter);

• November 2, 2015, letter from Soluri Meserve, pp. 3-6;

• November 2, 2015, letter report by air quality professionals Patrick Sullivan, CPP, REPA, and John Henkelman, regarding Greenhouse Gas Emissions, pp. 1-4 (Exhibit 1 to November 2, 2015 Soluri Meserve letter).

2. Recirculation is required due to the FSEIR's change in approach to GHG analysis from the quantitative analysis described in the DSEIR that relied on the faulty GHG inventory prepared for AB 900 Leadership Development Project certification concluding there would be "no net emissions" to a "qualitative" analysis stating GHG emissions would be less than significant based on the Project's consistency with the local GHG reduction plan.

• November 2, 2015, letter from Soluri Meserve, pp. 3-6;

• November 2, 2015, letter report by air quality professionals Patrick Sullivan, CPP, REPA, and John Henkelman, regarding Greenhouse Gas Emissions, pp. 1-4 (Exhibit 1 to November 2, 2015 Soluri Meserve letter).

3. As quantitative methods of assessing Project-level GHG emissions are available, the EIR's lack of quantification of the impact was a failure to proceed in the manner provided by law.

• November 2, 2015, letter report by air quality professionals Patrick Sullivan, CPP, REPA, and John Henkelman, regarding Greenhouse Gas Emissions, pp. 1-4 (Exhibit 1 to November 2, 2015, Soluri Meserve letter);

• November 2, 2015, letter from Soluri Meserve, pp. 4-5.

4. The SEIR fails to require all feasible mitigation of the GHG emissions from the Project.

• July 26, 2015, letter from Soluri Meserve, pp. 4-6;

• November 2, 2015, letter from Soluri Meserve, pp. 3-6.

5. The SEIR impermissibly conflates conflating analysis of the Project's design features (Improvement Measures) and mitigation measures, and thus fails to consider whether other possible mitigation measures would be more effective

6. The FSEIR fails to adequately respond in good faith to comments about the GHG analysis, including but not limited to explaining why it was proper to exclude the office towers from the GHG emissions inventory.

• November 2, 2015, letter from Soluri Meserve, pp. 3-5.

K. THE SEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO GEOLOGY AND SOILS IMPACTS.

1. The Record contains substantial evidence supporting a fair argument that the Project will result in potentially significant Geology and Soils impacts or, alternatively, supplemental review is required under Public Resources Code section 21166.

• July 26, 2015, letter from Soluri Meserve, pp. 13-20;

• July 21, 2015, letter report by geotechnical engineer Lawrence Karp, CE, CEG, regarding Geology and Soils impacts, pp. 1-11 (Exhibit C to July 26, 2015 Soluri Meserve letter);

• July 20, 2015, letter report by engineering geologist Marin Cline, CEG, and hydrogeologist Kurt Balasek, PG, CHg, QSD, regarding Geology and Soils impacts, pp. 1-18 (Exhibit D to July 26, 2015, Soluri Meserve letter);

• November 2, 2015, letter report by engineering geologist Marin Cline, CEG, and hydrogeologist Kurt Balasek, PG, CHg, QSD, regarding Geology and Soils impacts, pp. 1-4 (Exhibit 2 to November 2, 2015 Soluri Meserve letter);

- November 2, 2015, letter from Soluri Meserve, pp. 9-11;

2. Reliance on the 1998 SEIR analysis of Geology and Soils was impermissible because the Project is different than the project described in the 1998 FSEIR, the 1998 FSEIR relies on outdated data and methodology to analyze impacts, and conditions have changed such that the 1998 FSEIR does not describe the present conditions at the site.

- July 26, 2015, letter from Soluri Meserve, pp. 13-20;

- July 21, 2015, letter report by geotechnical engineer Lawrence Karp, CE, CEG, regarding Geology and Soils impacts, pp. 1-11 (Exhibit C to July 26, 2015 Soluri Meserve letter);

- July 20, 2015, letter report by engineering geologist Marin Cline, CEG, and hydrogeologist Kurt Balasek, PG, CHg, QSD, regarding Geology and Soils impacts, pp. 1-18 (Exhibit D to July 26, 2015 Soluri Meserve letter);

- November 2, 2015, letter report by engineering geologist Marin Cline, CEG, and hydrogeologist Kurt Balasek, PG, CHg, QSD, regarding Geology and Soils impacts, pp. 1-4 (Exhibit 2 to November 2, 2015 Soluri Meserve letter);

- November 2, 2015, letter from Soluri Meserve, pp. 9-11

3. The EIR impermissibly defers development of mitigation measures necessary to ensure that Geology and Soils impacts are mitigated to less than significant levels.

- July 26, 2015, letter from Soluri Meserve, pp. 18-20;

- July 21, 2015, letter report by geotechnical engineer Lawrence Karp, CE, CEG, regarding Geology and Soils impacts, pp. 1-11 (Exhibit C to July 26, 2015 Soluri Meserve letter);

- July 20, 2015, letter report by engineering geologist Marin Cline, CEG, and hydrogeologist Kurt Balasek, PG, CHg, QSD, regarding Geology and Soils impacts, pp. 1-18 (Exhibit D to July 26, 2015, Soluri Meserve letter);

- November 2, 2015, letter report by engineering geologist Marin Cline, CEG, and hydrogeologist Kurt Balasek, PG, CHg, QSD, regarding Geology and Soils impacts, pp. 1-4 (Exhibit 2 to November 2, 2015 Soluri Meserve letter);

- November 2, 2015, letter from Soluri Meserve, pp. 9-11.

4. Recirculation is required due to new information presented in the FSEIR and within the

Record regarding Geology and Soils impacts.

- July 22, 2015, letter report by geotechnical engineer Lawrence Karp, CE, CEG, regarding Geology and Soils impacts;

- July 22, 2015, letter report by engineering geologist Marin Cline, CEG, and hydrogeologist Kurt Balasek, PG, CHg, QSD, regarding Geology and Soils impacts);

5. The FSEIR fails to adequately respond in good faith to comments about Geology and Soils analysis.

- November 2, 2015, letter report by engineering geologist Marin Cline, CEG, and hydrogeologist Kurt Balasek, PG, CHg, QSD, regarding Geology and Soils impacts, pp. 1-4 (Exhibit 2 to November 2, 2015 Soluri Meserve letter);

L. THE SEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO HAZARDS AND HAZARDOUS MATERIALS IMPACTS.

1. The Record contains substantial evidence supporting a fair argument that the Project will result in potentially significant Hazards and Hazardous Materials impacts or, alternatively, supplemental review is required under Public Resources Code section 21166.

- July 26, 2015, letter from Soluri Meserve, pp. 7-20;

- November 2, 2015, letter from Soluri Meserve, pp. 11-14;

- July 22, 2015, letter report by geotechnical engineer Martin Cline, GEG and Kurt Balasek, PG, CHg, QSD, regarding Hazardous Materials, pp. 1-15 (Exhibit B to July 26, 2015, Soluri Meserve letter);

- October 20, 2015, letter to the San Francisco Planning Department regarding Supplemental Comments on Environmental Review for Warriors Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 - Updated Soil and Screening Levels

2. Reliance on the 1998 SEIR analysis of Hazards and Hazardous Materials was impermissible because the Project is different than the project described in the 1998 FSEIR, the 1998 FSEIR relies on outdated data and methodology to analyze impacts, and conditions have changed such that the 1998 FSEIR does not describe the present contamination at the site.

- July 26, 2015, letter from Soluri Meserve, pp. 7-13;

- November 2, 2015, letter from Soluri Meserve, pp. 11-14;

- July 22, 2015, letter report authored by geotechnical engineer Martin Cline, GEG and Kurt Balasek, PG, CHg, QSD, regarding Hazardous Materials, pp. 1-15 (Exhibit B to July 26, 2015 Soluri Meserve letter);

- October 20, 2015, letter from Soluri Meserve to the San Francisco Planning Department regarding Supplemental Comments on Environmental Review - Updated Soil and Screening Levels;

- October 20, 2015, report by Damian applied Technology regarding Updated Soil and Groundwater Screening Levels for the Golden State Warriors Arena;

3. Significant new information since the certification of the 1998 SEIR requires analysis of Hazards and Hazardous Materials impacts from risks of exposure.

- July 26, 2015, letter from Soluri Meserve, pp. 7-13

- November 2, 2015, letter from Soluri Meserve, pp. 11-14;

- July 22, 2015, letter report authored by geotechnical engineer Martin Cline, GEG and Kurt Balasek, PG, CHg, QSD, regarding Hazardous Materials, pp. 1-15 (Exhibit B to July 26, 2015 Soluri Meserve letter);

- October 20, 2015, letter from Soluri Meserve to the San Francisco Planning Department regarding Supplemental Comments on Environmental Review - Updated Soil and Screening Levels;

- October 20, 2015, report by Damian applied Technology regarding Updated Soil and Groundwater Screening Levels for the Golden State Warriors Arena;

4. Recirculation of the FSEIR was required due to new information regarding substantially more severe and/or significant impacts associated with the presence of asbestos on the Project site. (FSEIR, Vol. 5, p. 13-22 to 13-29.)

- July 26, 2015, letter from Soluri Meserve, p. 13;

- July 22, 2015, letter report by geotechnical engineer Martin Cline, GEG and Kurt Balasek regarding Hazardous Materials, pp. 4-6 (Exhibit B to July 26, 2015 Soluri Meserve letter);

- November 2, 2015, letter from Soluri Meserve, p. 12, Exhibit 3, p. 3.

5. The FSEIR fails to adequately respond in good faith to comments about the Hazards and

Hazardous Materials analysis.

M. THE SEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO URBAN DECAY IMPACTS IN OAKLAND.

1. The SEIR fails to adequately analyze the potentially significant impact of urban decay in Oakland.

- July 26, 2015, letter from Soluri Meserve at FSEIR, Vol. 6, p. Com-65;
- July 13, 2015, memo from Philip King, Ph.D at FSEIR, Vol. 6, pp. Com-82-86;
- November 2, 2015, letter from Soluri Meserve, p. 14;
- November 2, 2015, memo from Philip King, Ph.D.

2. The FSEIR fails to provide a good faith response to comments on the issue of urban decay.

- November 2, 2015, letter from Soluri Meserve, p. 14;
- November 2, 2015, memo from Philip King, Ph.D.

3. The purported analysis of urban decay contained in the FSEIR requires recirculation.

- November 2, 2015, letter from Soluri Meserve, p. 14.

N. THE SEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO WIND AND SHADOW IMPACTS.

1. The FSEIR fails to adequately analyze and disclose significant wind impacts to open space within the Project site.

- July 26, 2015, letter from Soluri Meserve at FSEIR, Vol. 6, pp. Com-62-63;
- November 2, 2015, letter from Soluri Meserve, pp. 6-8.

2. The FSEIR fails to adequately respond in good faith to comments about the wind analysis.

- November 2, 2015, letter from Soluri Meserve, pp. 6-8.

3. Recirculation of the FSEIR is required because the FSEIR disclosed a new significant wind

impact.

- November 2, 2015, letter from Soluri Meserve, p. 8.

O. THE SEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO RECREATION IMPACTS.

1. A fair argument exists that the Project will accelerate substantial deterioration of Bayfront Park thereby requiring analysis in the SEIR.

- July 26, 2015, letter from Soluri Meserve at FSEIR, Vol. 6, pp. Com-60-61;
- November 2, 2015, letter from Soluri Meserve, pp. 8-9.

2. Even if consistent with the 1998 SEIR, the proposed Project represents a major revision that will result in a significantly more significant impact to deterioration of Bayfront Park than previously analyzed in 1998.

- July 26, 2015, letter from Soluri Meserve at FSEIR, Vol. 6, pp. Com-60-61;

- November 2, 2015, letter from Soluri Meserve, pp. 8-9.

3. The FSEIR fails as an informational document regarding impacts to recreation because it improperly excludes analysis of environmental impacts associated with development of Bayfront Park.

- July 26, 2015, letter from Soluri Meserve at FSEIR, Vol. 6, pp. Com-60-61;

- November 2, 2015, letter from Soluri Meserve, pp. 8-9.

4. Even if construction of Bayfront Park was previously analyzed at a programmatic level in the 1998 EIR, new information and changed circumstances results in a new and more severe significant impacts related to hazardous material exposure to residents of Bayfront Park than previously analyzed in 1998 and require analysis in a recirculated SEIR.

- July 26, 2015, letter from Soluri Meserve at FSEIR, Vol. 6, pp. Com-60-61;

- November 2, 2015, letter from Soluri Meserve, pp. 8-9.

- The FSEIR failed to adequately respond in good faith to comments about the Project's impacts to recreational facilities.

- November 2, 2015, letter from Soluri Meserve, pp. 8-9.

P. THE SEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO UTILITIES IMPACTS.

1. The FSEIR fails as an informational document regarding water supply infrastructure because it impermissibly defers analysis of the impacts associated with constructing water supply infrastructure.

- July 26, 2015, letter from Soluri Meserve at FSEIR, Vol. 6, pp. Com-58-59.

2. The FSEIR may not rely on the 1998 SEIR regarding analysis of water supply infrastructure because new information and/or changed circumstances results in new and more severe significant impacts associated with constructing these facilities that were not previously disclosed.

- July 26, 2015, letter from Soluri Meserve at FSEIR, Vol. 6, pp. Com-58-59.

3. New information and/or changed circumstances prohibit the SEIR from relying on the Water Supply Assessment prepared for another project in 2013.

- July 26, 2015, letter from Soluri Meserve at FSEIR, Vol. 6, pp. Com-58-59.

4. The FSEIR fails as an informational document with respect to its discussion of stormwater treatment facilities and the Project's impact.

- July 26, 2015, letter from Soluri Meserve at FSEIR, Vol. 6, pp. Com-59-60.

5. The FSEIR fails as an informational document by not including a detailed statement of the Project's energy demand in the DSEIR that was circulate for public review. The information contained in the FSEIR RTC constitutes new information that requires recirculation.

- July 26, 2015, letter from Soluri Meserve at FSEIR, Vol. 6, pp. Com-61-62.

Q. THE SEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO LAND USE IMPACTS.

1. The Draft SEIR fails to address and the Final SEIR fails to adequately respond to comments regarding the inconsistency of the Warriors Arena Project with the primary and secondary uses encompassed in and allowed by the Mission Bay South Redevelopment Plan. The OCII findings on land use consistencies are not supported by substantial evidence.

• July 26, 2015, DSEIR comment letter from Susan Brandt-Hawley, at FSEIR, Vol.6, p. Com-40-41, LU-2, PD-1.

• November 2, 2015, letter to OCII from Susan Brandt-Hawley re FSEIR/RTC.

• Testimony at November 3, 2015, OCII public hearing by Susan Brandt-Hawley.

2. The Draft SEIR fails to address and the Final SEIR fails to adequately respond to comments regarding the inconsistency of the Warriors Arena Project with land use policies established by the Mission Bay South Redevelopment Plan and the Design for Development.

• July 26, 2015, DSEIR comment letter from Susan Brandt-Hawley, at FSEIR, Vol.6, p. COM-41, PP-1.

3. The Draft SEIR fails to address and the Final SEIR fails to adequately respond to comments regarding the inadequacy of the EIR's analysis of changing the land use planned for the Mission Bay South area by changing the planned community character as a biotechnology and medical hub with the Event Center.

• July 26, 2015, DSEIR comment letter from Susan Brandt-Hawley, at FSEIR, Vol.6, p. COM-43, LU-1.

R. THE SEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO CULTURAL RESOURCE IMPACTS.

1. The Draft SEIR fails to adequately address and the Final SEIR fails to adequately respond to comments regarding the inadequacy of the EI"s project specific analysis and mitigation of cultural resources, and failure to provide an updated investigation of resources as part of the environmental setting.

• July 26, 2015, DSEIR comment letter from Susan Brandt-Hawley, at FSEIR, Vol.6, p. COM-45-46, CULT-1.

S. THE OCII'S CEQA FINDINGS AND STATEMENT OF OVERRIDING CONSIDERATIONS ARE PREMATURE AND UNSUPPORTED.

1. The CEQA Findings adopted by the OCII are premature and unsupported, as explained in the Alliance's comments on the SEIR. The SEIR is defective and cannot be relied upon as an informational document with respect to the analysis and public disclosure of impacts and mitigation measures regarding transportation under CEQA.

2. Similarly, the Statement of Overriding Considerations is also premature and unsupported, because the OCII's CEQA findings adopted by are premature and unsupported, and without a legally adequate description of the nature and extent of the Project's environmental harm, the OCCI and the City cannot properly weigh whether the Project's benefits outweigh that harm.

Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

List of Exhibits

Exhibit 1: Resolution 69-2015, approved by the Commission on Community Investment and Infrastructure on November 3, 2015, certifying the Final Subsequent Environmental Impact Report for the Warriors Arena Project.

Exhibit 2: Resolution 70-2015, approved by the Commission on Community Investment and Infrastructure on November 3, 2015, making CEQA Findings included in Resolution 70-2015.

Exhibit 3: Memorandum entitled "Appeal Filing to the Board of Supervisors In Its Capacity as Governing Body of the Successor Agency."

Exhibit 4: November 10, 2015, letter from Dan Smith to Tom Lippe re Emergency Access.

Exhibit 5: November 10, 2015, letter from Dan Smith to Tom Lippe re Port Parking Facilities.

Exhibit 6: November 13, 2015, letter from Dan Smith to Tom Lippe re King Street Electrical.

List of Exhibits to November 13, 2015 Letter from Thomas N. Lippe, Law Offices of Thomas N. Lippe, APC Re: Notice of Appeal and Appeal of OCII Resolutions 69-2015 and 70-2015 Re Warriors Arena Project

Exhibit 1: Resolution 69-2015. (Please see Exhibit C of the Appeal Response Packet for this resolution)

Exhibit 2: Resolution 70-2015. (This resolution is not appealable. This resolution is on file at OCII, and on OCII's website at http://sfocii.org/warriors-draft)

Exhibit 3: Appeal Filing to the Board of Supervisors In Its Capacity as Governing Body of the Successor Agency. (This document is on the San Francisco Board of Supervisors' website at http://www.sfbos.org/)

Exhibit 4: November 10, 2015 Smith Engineering & Management Letter re Emergency Access. (This letter is included in Exhibit E of this Appeal Response Packet as an attachment to Comment Letter O-MBA27S9)

Exhibit 5: November 10, 2015 Smith Engineering & Management Letter re Port Parking Facilities. (This letter is included in Exhibit E of this Appeal Response Packet as an attachment to Comment Letter O-MBA27S9)

Exhibit 5: November 10, 2015 Smith Engineering & Management Letter re Port Parking Facilities. (This letter is included in Exhibit E of this Appeal Response Packet as Exhibit 6 to Comment Letter O-MBA29L2)

office of
COMMUNITY INVESTMENT
and INFRASTRUCTURE

Exhibit C

OCII Resolution No. 69-2015 Certifying the Final Subsequent Environmental Impact Report for the Golden State Warriors Event Center and Mixed-Use Development on Blocks 29-32 in Mission Bay South

OCII CASE NO. ER 2014-919-97; PLANNING DEPARTMENT CASE NO. 2014.1441E – EVENT CENTER AND MIXED-USE DEVELOPMENT AT MISSION BAY BLOCKS 29-32

CERTIFIED ON NOVEMBER 3, 2015

Edwin M. Lee
MAYOR

Tiffany Bohee
EXECUTIVE DIRECTOR

Mara Rosales
CHAIR

Miguel Bustos
Marily Mondejar
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COMMISSION ON COMMUNITY INVESTMENT AND INFRASTRUCTURE

RESOLUTION NO. 69-2015

Adopted November 3, 2015

CERTIFYING THE FINAL SUBSEQUENT ENVIRONMENTAL IMPACT REPORT FOR THE GOLDEN STATE WARRIORS EVENT CENTER AND MIXED-USE DEVELOPMENT ON BLOCKS 29-32 IN MISSION BAY SOUTH UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT ("CEQA") AND THE CEQA GUIDELINES; MISSION BAY SOUTH REDEVELOPMENT PROJECT AREA

WHEREAS, The Commission on Community Investment and Infrastructure, ("Commission"), the successor agency to the San Francisco Redevelopment Agency ("Successor Agency"), takes the following certification action in compliance with the California Environmental Quality Act ("CEQA"), the California Public Resources Code Sections 21000 et seq., and the CEQA Guidelines, 14 Cal. Code Reg. Sections 15000 et seq. ("CEQA Guidelines") and acting in its capacity as lead agency under CEQA Section 21067; and,

WHEREAS, On September 17, 1998, the Commission of the former Redevelopment Agency of the City and County of San Francisco ("Redevelopment Commission") by Resolution No. 182-98, and the San Francisco Planning Commission, by Resolution No. 14696, together acting as co-lead agencies for conducting environmental review for the Redevelopment Plans for the Mission Bay North Redevelopment Project Area and the Mission Bay South Redevelopment Project Area (the "Plans"), the Mission Bay North Owner Participation Agreement ("North OPA") and the Mission Bay South Owner Participation Agreement ("South OPA"), and other permits, approvals and related and collateral actions (the "Mission Bay Project"), certified the Final Subsequent Environmental Impact Report ("Mission Bay FSEIR") (State Clearinghouse Number 97092068), as a program EIR for Mission Bay North and South pursuant to CEQA and CEQA Guidelines Sections 15168 (Program EIR) and 15180 (Redevelopment Plan EIR). The Mission Bay FSEIR document provided programmatic environmental review of the overall Mission Bay Redevelopment Plan (consisting of the approximately 300-acre Mission Bay North and South Redevelopment Plan Areas); and,

WHEREAS, On the same day, the Redevelopment Commission adopted Resolution No. 183-98, which adopted environmental findings, including a mitigation monitoring and reporting program ("MMRP")and a statement of overriding considerations, in connection with the approval of the Plans and other Mission Bay Project approvals, and adopted Resolution No. 190-98, approving the Redevelopment Plan for the Mission Bay South Redevelopment Project Area ("Plan") and Resolution No. 193-98 authorizing execution of the South OPA and related documents between the Redevelopment Agency and the Mission Bay Master Developer (originally Catellus Development Corporation and now FOCIL-MB, LLC, the successor to Catellus Development Corporation); and,

WHEREAS, On October 19, 1998, the Board of Supervisors adopted Motion No. 98-132 affirming certification of the Mission Bay FSEIR by the Planning Commission and the Redevelopment Agency, and Resolution No. 854-98 adopting environmental findings, including an MMRP and a statement of overriding considerations, for the Mission Bay Project. On November 2, 1998, the San Francisco Board of Supervisors ("Board of Supervisors"), by Ordinance No. 335-98, adopted the Plans; and,

WHEREAS, On February 1, 2012, state law dissolved the Former Redevelopment Agency and required the transfer of certain of its assets and obligations to the Successor Agency, and on June 27, 2012, state law clarified that successor agencies are separate public entities, Cal. Health & Safety Code §34170 et seq. ("Redevelopment Dissolution Law"); and,

WHEREAS, Redevelopment Dissolution Law required creation of an oversight board to the successor agency and provided that with approval from its oversight board and the State Department of Finance ("DOF"), a successor agency may continue to implement "enforceable obligations" such as existing contracts, bonds and leases, that were executed prior to the suspension of redevelopment agencies' activities. On January 24, 2014, DOF finally and conclusively determined that the Mission Bay North and South Owner Participation Agreements and Mission Bay Tax Increment Allocation Pledge Agreements are enforceable obligations pursuant to Health and Safety Code Section 34177.5(i); and,

WHEREAS, On October 2, 2012, the Board of Supervisors of the City, acting as the governing body of the Successor Agency, adopted Ordinance No. 215-12 (the "Implementing Ordinance"), which Implementing Ordinance was signed by the Mayor on October 4, 2012, and which, among other matters: (a) acknowledged and confirmed that the Successor Agency is a separate legal entity from the City, and (b) established this Commission and the Office of Community Investment and Infrastructure ("OCII") and delegated to the Commission the authority to (i) act in place of the Redevelopment Agency Commission to, among other matters, implement, modify, enforce and complete the Redevelopment Agency's enforceable obligations, (ii) approve all contracts and actions related to the assets transferred to or retained by the Successor Agency, including, without limitation, the authority to exercise land use, development, and design approval, consistent with applicable enforceable obligations, and (iii) take any action that the Redevelopment Dissolution Law requires or authorizes on behalf of the Successor Agency and any other action that this Commission deems appropriate, consistent with the Redevelopment Dissolution Law, to comply with such obligations; and,

WHEREAS, The Board of Supervisors' delegation to this Commission includes the authority to act as the lead agency that administers environmental review for private projects in Mission Bay North and South Redevelopment Plan Areas in compliance with the requirements of CEQA and the CEQA Guidelines, including CEQA Section 21067; and,

WHEREAS, The proposed project is the Golden State Warriors Event Center and Mixed-Use Development at Mission Bay South Blocks 29-32, with the MUNI UCSF/Mission Bay Station Variant and the Third Street Plaza variant, and related actions ("Event Center Project" or "Project"), as described in Chapter 3 of the Final Subsequent Environmental Impact Report ("FSEIR"). The Project Sponsor is GSW Arena LLC ("GSW"), an affiliate of the Golden State Warriors, LLC, which owns and operates the Golden State Warriors National Basketball Association team. GSW proposes to construct a multi-purpose event center and a variety of mixed uses, including office, retail, open space, and structured parking on an approximately 11-acre site on Bocks 29-32. The Project site is bounded by South Street on the north, Third Street on the west, 16th Street on the south, and by the future planned realigned Terry A. Francois Boulevard on the east; and

WHEREAS, In compliance with CEQA and the CEQA Guidelines, OCII determined that the Project required preparation of a Subsequent Environmental Impact Report and OCII provided public notice of that determination to governmental agencies and organizations and persons interested in the proposed project on November 19, 2014, initiating a 30-day public scoping period, which ended on December 19, 2014 and included a public scoping meeting on December 9, 2014.

WHEREAS, On June 5, 2015, OCII published and circulated the Draft Subsequent Environmental Impact Report (hereinafter "GSW DSEIR") to local, state, and federal agencies and to interested organizations and individuals. In addition, electronic copies of the GSW DSEIR were made available for public review on the OCII website and paper copies of the GSW DSEIR were made available for public review at OCII (1 South Van Ness Avenue, 5th Floor), the San Francisco Planning Department (1660 Mission Street, 1st Floor, Planning Information Counter), the San Francisco Main Library (100 Larkin Street) and San Francisco Library, Mission Bay Branch (960 4th Street).

WHEREAS, Notices of availability of the GSW DSEIR and of the date and time of the public hearing were posted near the project site and published in a newspaper of general circulation in San Francisco on June 5, 2015.

WHEREAS, On October 23, 2015, OCII published the Final Subsequent Environmental Impact Report ("FSEIR") for the Event Center Project consisting of the GSW DSEIR, the comments received during the review period, any additional information that became available after the publication of the GSW DSEIR, and the Responses to Comments document, all as required by law, copies of which are available through the Secretary of the Commission and at www.gsweventcenter.com, and are incorporated herein by reference; and,

WHEREAS, The administrative record that contains the GSW DSEIR, the FSEIR and all documents related to, or relied on in the preparation thereof has been prepared by OCII in accordance with the Jobs and Economic Improvement through Environmental Leadership Act (AB 900). Governor Jerry Brown certified the proposed project as an environmental leadership development project under this Act on April 30, 2015, and on May 27, 2015, the Joint Legislative Budget

Committee concurred with this certification. Therefore, this project is eligible for streamlined judicial review. Project EIR files have been made available for review by the Commission and the public. These files are available for public review at OCII at 1 South Van Ness Avenue, 5th Floor, can be found at www.gsweventcenter.com and are part of the record before the Commission; now therefore be it,

RESOLVED, The Commission hereby certifies the Final Environmental Impact Report identified as OCII Case No. ER-2014-919-97 (also identified as Planning Department Case No. 2014.1441E and State Clearinghouse No. 2014112045), Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 (hereinafter "Project"), based upon the following findings:

1. The Commission has reviewed and considered the FSEIR and hereby does find that the contents of said report and the procedures through which the FSEIR was prepared, publicized, and reviewed comply with the provisions of CEQA and the CEQA Guidelines.

2. The Commission hereby does find that the FSEIR concerning Case No. ER-2014-919-97, Event Center and Mixed-Use Development at Mission Bay Blocks 29-32, reflects its independent judgment and analysis, is adequate, accurate and objective, and that the Comments and Responses document contains no significant revisions to the GSW DSEIR, and hereby does certify the completion of said FSEIR in compliance with CEQA and the CEQA Guidelines.

3. The Commission, in certifying the completion of said FSEIR, hereby does find that the Project:

A. Will have a significant and unavoidable project-specific effect on the environment in the following areas:

1) On days without a SF Giants game at AT&T Park:

a) Increased traffic congestion and traffic impacts at seven intersections that would operate at LOS E or LOS F.

b) Increased traffic congestion and traffic impacts at one freeway ramp location that would operate at LOS E or LOS F.

c) A substantial increase in transit demand that could not be accommodated by regional transit capacity that would result in a significant impact to North Bay and South Bay regional transit service (Caltrain, Golden Gate Transit and Water Emergency Transportation Authority (WETA)).

2) On days with overlapping evening events at the project site and at

AT&T Park:

a) Increased traffic and traffic impacts at ten additional intersections that would operate at LOS E or LOS F.

b) Increased traffic and traffic impacts at three freeway ramp locations that would operate at LOS E or LOS F.

c) A substantial increase in transit demand that could not be accommodated by regional transit capacity would result in a significant impact to East Bay, North Bay and South Bay regional transit service (Bay Area Rapid Transit, Caltrain, Golden Gate transit and WETA).

3) Without implementation of the Muni Special Event Transit Service Plan:

a) Increased traffic congestion and traffic impacts at nine intersections that would operate at LOS E or LOS F.

b) Increased traffic congestion and traffic impacts at three freeway ramp locations that would operate at LOS E or LOS F.

c) Transit service operation impacts on the Muni T Third light rail line and the 22 Fillmore bus route.

d) Capacity utilization standard exceedances for Caltrain, Golden Gate Transit and WETA.

4) Increased ambient noise levels due to increased vehicular traffic along local roadways in the project vicinity and to crowd noise associated with events at the event center.

5) Construction-related emissions of criteria air pollutants (reactive organic gases and nitrogen oxides) that would exceed applicable significance thresholds.

6) Long-term operational emissions of criteria air pollutants (ROG and NOx) that would exceed applicable significance thresholds in connection with project operations, from sources including new vehicle trips, maintenance and operation of standby diesel generators, boilers and area sources such as landscape equipment and use of consumer products.

B. Will result in unavoidable cumulatively considerable contributions to the following significant cumulative effects on the environment:

1) During peak hours, cumulative increased traffic congestion and

traffic impacts at 16 intersections that would operate at LOS E or LOS F.

2) Cumulative increased traffic congestion and traffic impacts at three freeway ramp locations that would operate at LOS E or LOS F.

3) Cumulative capacity utilization exceedances for BART, Caltrain, Golden Gate Transit and WETA.

4) Increased cumulative roadway traffic noise in the project vicinity.

5) Increased cumulative construction-related and operational emissions of criteria air pollutants that would exceed applicable significance thresholds.

6) Cumulative wastewater flows that could exceed the capacity of the Mariposa Pump Station and associated force mains and conveyance piping, and construction impacts resulting from future construction of improvements to the Mariposa Pump Station and associated facilities to expand wastewater treatment capacity.

4. The Commission has reviewed and considered the information contained in the FSEIR prior to approving the Project.

I hereby certify that the foregoing resolution was adopted by the Commission at its meeting of November 3, 2015.

Commission Secretary

office of
COMMUNITY INVESTMENT
and INFRASTRUCTURE

Exhibit D

OCII Responses to Late Comments

OCII CASE NO. ER 2014-919-97; PLANNING DEPARTMENT CASE NO. 2014.1441E – EVENT CENTER AND MIXED-USE DEVELOPMENT AT MISSION BAY BLOCKS 29-32

CERTIFIED ON NOVEMBER 3, 2015

BACKGROUND

GSW Arena LLC (GSW), an affiliate of Golden State Warriors, LLC, which owns and operates the Golden State Warriors National Basketball Association (NBA) team, proposes to construct a multi-purpose event center and a variety of mixed uses, including office, retail, open space and structured parking on an approximately 11-acre site (Blocks 29-32) within the Mission Bay South Redevelopment Plan Area of San Francisco. The project site is bounded by South Street on the north, Third Street on the west, 16th Street on the south, and by the future planned realigned Terry A. François Boulevard on the east. The proposed event center would host the Golden State Warriors basketball team during the NBA season, as well as provide a year-round venue for a variety of other uses, including concerts, family shows, other sporting events, cultural events, conferences and conventions.

The San Francisco Office of Community Investment and Infrastructure (OCII), as lead agency responsible for administering the environmental review for private projects in the Mission Bay North and South Redevelopment Plan Area of San Francisco, published a Draft SEIR on the project on June 5, 2015, and the 52-day public review period ended on July 27, 2015. OCII prepared a Responses to Comments (RTC) document that provided written responses to all comment received during the public review period as well as to several late comment letters received after the close of the public review period. OCII published the RTC document on October 23, 2015.

CEQA does not require published responses to any comments received after the close of the public comment period, which ended on July 27, 2015. However, OCII received numerous additional comment letters or emails on the SEIR too late to be responded to in the RTC document, including public testimony at the OCII public hearing on November 3, 2015 (referred to as "Late Comments"). Some of these late comments provide supplemental comments on the Draft SEIR, while some, received after publication of the RTC document, provide comments on the RTC document and Final SEIR. OCII staff presented written responses to the OCII Commission for five of these additional comment letters at the certification hearing on November 3, 2015, and also present oral responses to several of the late comments at the same hearing.

This Exhibit D presents the comments and provides written responses for all of these late comments. It lists all of the substantive issues raised in these late comments and provides written responses to those late comments, using the same format as the RTC document (i.e.,

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MAYOR

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Mara Rosales
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comments and responses are organized by topic). Exhibit D includes a verbatim copy of the substantive late comments, with similar comments on the same topic grouped together, followed by a comprehensive response on that topic. Exhibit E contains copies of the additional comment letters and copies of oral comments on the adequacy of the Final SEIR excerpted from the OCII public hearing transcript, with coding in the margin that corresponds to the responses in this exhibit. Due to the volume of late comments and because all substantive comments are reproduced verbatim in Exhibit D, Exhibit E is provided on CD.

This Exhibit D is organized as follows:

- Section 1. List of Persons Submitting Late Comments
- Section 2. Responses to Late Comments on General Topics
- Section 3. Responses to Late Comments on the Environmental Review Process
- Section 4. Responses to Late Comments on the AB 900 Process
- Section 5. Responses to Late Comments on the Project Description
- Section 6. Responses to Late Comments on Plans and Policies
- Section 7. Responses to Late Comments on Archaeological Resources
- Section 8. Responses to Late Comments on Transportation
- Section 9. Responses to Late Comments on Noise
- Section 10. Responses to Late Comments on Air Quality
- Section 11: Responses to Late Comments on Greenhouse Gases Emissions
- Section 12. Responses to Late Comments on Wind
- Section 13. Responses to Late Comments on Recreation
- Section 14. Responses to Late Comments on Utilities
- Section 15. Responses to Late Comments on Biological Resources
- Section 16. Responses to Late Comments on Geology
- Section 17. Responses to Late Comments on Hydrology and Water Quality
- Section 18. Responses to Late Comments on Hazardous Materials
- Section 19. Responses to Late Comments on Alternatives

SECTION 1: LIST OF PERSONS SUBMITTING LATE COMMENTS

Table 1 lists the persons or entities who submitted late comment letters/emails or presented public testimony at the certification hearing critiquing the SEIR. The table also identifies a general summary of the primary issues raised in the late comments and all attachments and exhibits submitted by the commenters. In some cases, the attachments are duplicates of previously submitted comments or contain general information that does not specifically address the SEIR or the project; no specific response is provided for those attachments.

TABLE 1
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
State Agency				
A-Caltrans2	Patricia Maurice, District Branch Chief, Local Development-Intergovernmental Review, State of California Department of Transportation	Letter	11/02/2015	Transportation
A-UCSF2	Lori Yamauchi, Associate Vice-Chancellor, UCSF Campus Planning,	Letter	11/03/2015	Transportation; Exterior Lighting Plan; Utilities and Service Systems (wastewater treatment capacity); MOU regarding gatehouse
Regional/Local Agency				
A-BAAQMD2	Jean Roggencamp, Deputy Air Pollution Control Officer, Bay Area Air Quality Management District	Letter	11/02/2015	Air Quality
A-MTC	Ken Kirkey, Director, Planning, Metropolitan Transportation Commission	Letter	10/30/2015	Consistency with Plan Bay Area; Transportation
Non-Governmental Organizations				
O-MBA14B2	Susan Brandt-Hawley, Brandt-Hawley Law Group, on behalf of Mission Bay Alliance, submitted to OCII • w/ Attachment of links to various newspaper articles, and UCSF letter	Letter -	10/13/2015	Alternatives (Pier 80)
O-MBA15S5	Osha R. Meserve, Soluri Meserve, on behalf of Mission Bay Alliance, submitted to OCII • w/ Attachment from Damian Applied Toxicology, LLC (10/20/2015)	Letter	10/20/2015	Hazards and Hazardous Materials
O-MBA16S6	Patrick M. Soluri, Soluri Meserve, on behalf of Mission Bay Alliance, submitted to OCII	Letter	11/02/2015	Tiering; AB 900; Greenhouse Gases; Wind and Shadow; Recreation; Geology and Soils; Hydrology and Water Quality; Hazards and Hazardous Materials; Urban Decay; Transportation Mitigation/Funding
	• Exhibit 1: SCS Engineers	-	11/02/2015	Greenhouse Gases; AB 900
	• Exhibit 2: BSK Associates	-	11/02/2015	Geology and Soils; Hydrology and Water Quality
	• Exhibit 3: Soluri Meserve letter to DTSC	-	10/23/2015	Hazards and Hazardous Materials
	– Exhibit A: BSK Associates	-	07/22/2015	Hazards and Hazardous Materials *[This is same 07/22/15 BSK Associates letter included in O-MBA7S2 Exhibit in the RTC Document]*

TABLE 1 (Continued)
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
Non-Governmental Organizations (cont.)				
O-MBA16S6 (cont.)	– Exhibit B: Damian Applied Toxicology, LLC *[same as attachment in O-MBA15S5, above]*	-	10/20/2015	Hazards and Hazardous Materials; *[Exhibit B: 10/20/15 Damian Applied Toxicology, LLC letter is the same as attachment in O-MBA15S5]*
	• Exhibit 4: Philip King, Ph.D.	-	11/02/2015	Urban Decay
	• Exhibit 5: SFMTA spreadsheet: Capital and Operating Cost Estimates for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32	-	10/13/2015	Transportation Mitigation/Funding
	• Exhibit 6: Marin Economic Consulting	-	11/02/2015	Transportation Mitigation/Funding
O-MBA17L5	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to OCII	Letter	11/02/2015	Secondary Use Findings; Lack of Fair Trial; and Sunshine Ordinance
O-MBA18L6	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to OCII	Letter	11/02/2015	Violation of Variance Requirement
O-MBA19B3	Susan Brandt-Hawley, Brandt-Hawley Law Group, on behalf of Mission Bay Alliance, submitted to OCII • With Attachment of 2005 Resolution of MOU between Redevelopment Agency and UCSF	Letter	11/02/2015	Consistency with Secondary Use Classification
O-MBA20L7	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to OCII	Letter	11/03/2015	General; CEQA Process (Noticing); Air Quality/Health Risk; Utilities and Service Systems; Transportation, Hydrology and Water Quality; Biological Resources; and Noise
	• Exhibit A: MR Wolfe and Associates, PC, Attorneys at Law (Comments on Health Risk)	-	11/02/2015	Health Risks
	– Exhibit 1: SWAPE		11/02/2015	Health Risk
	– Exhibit 2: CAPCOA Guidance Document	-	07/2009	Health Risk
	– Exhibit 3: San Luis Obispo Air Pollution Control District Air Quality Handbook	-	04/2012	Health Risks
	– Exhibit 4: Mission Bay Land Use Plan	-	11/2005	--

TABLE 1 (Continued)
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
Non-Governmental Organizations (cont.)				
O-MBA20L7 (cont.)	• Exhibit B: – Exhibit 5: Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines	-	02/2015	Health Risks
	– Exhibit 6: Office of Environmental Health Hazard Assessment website page on Air Toxicology and Epidemiology (Adoption of the Revised Air Toxics Hot Spots Program Technical Support Document for Cancer Potency Factors	-	Accessed 11/02/2015	Health Risks
	– Exhibit 7: Office of Environmental Health Hazard Assessment website page on Air Toxicology and Epidemiology (Notice of Adoption of Air Toxics Hot Spots Program Risk Assessment Guidelines))	-	Accessed 11/02/2015	Health Risks
	– Exhibit 8: Office of Environmental Health Hazard Assessment, excerpt from Technical Support Document for Exposure Assessment and Stochastic Analysis)	-	08/2012	Health Risks
	• Exhibit C: Autumn Wind and Associates, Inc.: Comments Regarding Air Quality Impact Analysis and Mitigation (Comments on Air Quality)	-	10/30/2015	Air Quality
	• Exhibit D: Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, Public Records Act/ Sunshine Ordinance Request	-	08/13/15	Sunshine Ordinance
	• Exhibit E: Email from Thomas Lippe to Christine Lamorena, San Francisco Planning Department, and Sally Oerth, Deputy Director, OCII	-	09/30/15	Sunshine Ordinance
	• Exhibit F: Smith Engineering and Management	-	11/02/15	Transportation
	• Exhibit G: Larry Wymer and Associates Traffic Engineering	-	11/2/2015	Transportation
	• Exhibit H: SWAPE	-	11/01/2015	Hydrology and Water Quality (potential PCBs in Stormwater)
	• Exhibit I: BSK Associates	-	11/02/2015	Hydrology and Water Quality (HYD-3 and HYD-4); and Utilities and Service Systems (UTIL-5, and UTIL-6)
	• Exhibit J: BSK Associates	-	11/02/15	Biological Resources

TABLE 1 (Continued)
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
Non-Governmental Organizations (cont.)				
O-MBA20L7 (cont.)	• Exhibit K: BSK Associates	-	07/16/15	Biological Resources (Assessment of project site's water and wetland conditions)
	• Exhibit L: BSK Associates, Draft Waters and Wetlands Delineation Report	-	10/29/15	Biological Resources (Draft Waters and Wetlands Delineation Report)
	• Exhibit M: – Summary of Recent City of San Francisco NPDES Permit Violations – Regional Water Quality Board Reports	-	Various dates	Hydrology and Water Quality
	• Exhibit N: State Executive Order W-59-93	-	08/23/1993	Biological Resources
	• Exhibit O: State Water Resources Control Board, Effect of SWANCC v. United States on the 401 Certification Program)	-	01/25/2001	Biological Resources
	• Exhibit P: State Water Resources Control Board, Guidance for Regulation of Discharges to "Isolated" Waters	-	01/25/2004	Biological Resources
	• Exhibit Q: State Water Resources Control Board, Water Quality Order No. 2004-004-DWQ	-	05/04/2004	Biological Resources
	• Exhibit R: State Water Resources Control Board, Resolution No. 2008-0026	-	04/15/2008	Biological Resources
	• Exhibit S: Frank Hubach Associates (FHA)	-	11/02/2015	Noise
O-MBA21L8	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to OCII	Email	11/03/2015	Adequacy of Time to Review and Comment on FSEIR/RTC; Violations of NPDES permits
O-MBA22B4	Susan Brandt-Hawley, Brandt-Hawley Law Group, on behalf of Mission Bay Alliance, submitted to OCII	Letter	11/03/2015	Process; Land Use, Alternatives; Cultural Resources
O-MBA23S7	Patrick M. Soluri, Soluri Meserve, on behalf of Mission Bay Alliance, submitted to SFMTA	Letter	11/03/2015	Project Description Assumptions vs. Mitigation Measures
	• Exhibit 1: Marin Economic Consulting (11/02/15) [*same as Exhibit 6 in Letter O-MBA16S6*]	-	11/02/2015	*[Exhibit 1: 11/12/15 Marin Economic Consulting letter is same as Exhibit 6 in Letter O-MBA16S6]*

TABLE 1 (Continued)
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
Non-Governmental Organizations (cont.)				
O-MBA24L9	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to Planning Commission	Letter	11/05/2015	Compliance with D for D; Consistency with Redevelopment Plan; Office space allocation; General Plan consistency; CEQA Findings for General/BAAQMD/ Alternative Site
	• Exhibit 1: Brandt Hawley Law Group Letter [*same as Letter O-MBA19B3*]	-	11/02/2015	*[Exhibit 1: 11/02/15 Brandt Hawley Law Group letter is same as Letter O-MBA19B3]*
	• Exhibit 2: Law Offices of Thomas N. Lippe, APC Letter [*same as Letter O-MBA18L6*]	-	11/02/2015	*[Exhibit 2: 11/02/15 Law Offices of Thomas N. Lippe, APC letter is same as Letter O-MBA18L6]*
	• Exhibit 3: Office Development Annual Limitation ("Annual Limit") Program	-	undated	
	• Exhibit 4: BAAQMD Letter [*same as Letter A-BAAQMD2*]	-	11/02/2015	*[Exhibit 4: 11//2/15 BAAQMD letter is same as Letter A-BAAQMD2]*
	• Exhibit 5: Letter to OCII Executive Director regarding 11/2/15 BAAQMD Letter	-	11/02/2015	Air Quality
O-MBA25L10	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to San Francisco DPW	Letter	11/06/2015	Request for notice of hearing on Subdivision Application; Compliance with CEQA, Mission Bay Redevelopment Plan, SF General Plan and Proposition M
	• Exhibit 1: Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance	-	11/05/2015	*[Exhibit 1: 11/05/15 Law Offices of Thomas N. Lippe, APC letter is same as Letter O-MBA24L9]*
	• Exhibit 1: Brandt Hawley Law Group Letter [*same as Letter O-MBA19B3*]	-	11/02/2015	*[Exhibit 1: 11/02/15 Brandt Hawley Law Group letter is same as Letter O-MBA19B3]*
	• Exhibit 2: Law Offices of Thomas N. Lippe, APC Letter [*same as Letter O-MBA18L6*]	-	11/02/2015	*[Exhibit 2: 11/02/15 Law Offices of Thomas N. Lippe, APC letter is same as Letter O-MBA18L6]*
	• Exhibit 3: Office Development Annual Limitation ("Annual Limit") Program	-	undated	*[Exhibit 3 is same as Exhibit 3 in as Letter O-MBA24L9]*
	• Exhibit 4: BAAQMD Letter [*same as Letter A-BAAQMD2*]	-	11/02/2015	*[Exhibit 4: 11//2/15 BAAQMD letter is same as Letter A-BAAQMD2]*
	• Exhibit 5: Letter to OCII Executive Director regarding 11/2/15 BAAQMD Letter	-	11/02/2015	*[Exhibit 5 is same as Exhibit 5 in as Letter O-MBA24L9]*

TABLE 1 (Continued)
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
Non-Governmental Organizations (cont.)				
O-MBA26S8	Osha R. Meserve, Soluri Meserve, on behalf of Mission Bay Alliance, submitted to BOS Budget and Finance Committee	Letter	11/09/2015	Project Description Assumptions vs. Mitigation Measures
O-MBA27S9	Patrick M. Soluri, Soluri Meserve, on behalf of Mission Bay Alliance, submitted to Entertainment Commission	Letter	11/10/2015	Consistency with Redevelopment Plan; CEQA compliance; CEQA Findings; Project Description Assumptions vs. Mitigation Measures; Adequacy of Traffic Analysis
	• Attachment: Smith Engineering and Management	-	11/10/15	Transportation (Emergency Vehicle Access)
	• Attachment: Smith Engineering and Management	-	11/10/15	Transportation (Parking)
	• Attachment: Soluri Meserve [*same as Letter O-MBA26S8*]		11/09/15	*[This attachment is same as Letter O-MBA26S8]*
	• Attachment: Larry Wymer and Associates Traffic Engineering [*same as Exhibit G in Letter O-MBA20L7]*	-	11/2/2015	*[This attachment is same as Exhibit G in Letter O-MBA20L7]*
	• Attachment: Smith Engineering and Management [*same as Exhibit F in Letter O-MBA20L7]*	-	11/02/2015	*[This attachment is same as Exhibit F in Letter O-MBA20L7]*
	• Attachment: : Law Offices of Thomas N. Lippe, APC Letter [*same as Letter O-MBA10L4*]	-	07/27/2015	*[This attachment is same as Letter O-MBA10L4]]*
O-MBA28L11	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to the San Francisco Board of Supervisors Budget and Finance Committee	-	11/09/15	Compliance with CEQA; CEQA Findings; Compliance with General Plan and Proposition M; Air Quality; Alternatives
	• Exhibit 1: Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to Planning Commission	Letter	11/05/2015	*[Exhibit 1: 11/05/15 Law Offices of Thomas N. Lippe, APC letter is same as Letter O-MBA24L9]*
	• Exhibit 1: Brandt Hawley Law Group Letter [*same as Letter O-MBA19B3*]	-	11/02/2015	*[Exhibit 1: 11/02/15 Brandt Hawley Law Group letter is same as Letter O-MBA19B3]*
	• Exhibit 2: Law Offices of Thomas N. Lippe, APC Letter [*same as Letter O-MBA18L6*]	-	11/02/2015	*[Exhibit 2: 11/02/15 Law Offices of Thomas N. Lippe, APC letter is same as Letter O-MBA18L6]*
	• Exhibit 3: Office Development Annual Limitation ("Annual Limit") Program	-	undated	*[Exhibit 3 is same as Exhibit 3 in as Letter O-MBA24L9]*
	• Exhibit 4: BAAQMD Letter [*same as Letter A-BAAQMD2*]	-	11/02/2015	*[Exhibit 4: 11//2/15 BAAQMD letter is same as Letter A-BAAQMD2]*

TABLE 1 (Continued)
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
Non-Governmental Organizations (cont.)				
O-MBA28L11 (cont.)	• Exhibit 5: Letter to OCII Executive Director regarding 11/2/15 BAAQMD Letter	-	11/02/2015	*[Exhibit 5 is same as Exhibit 5 in as Letter O-MBA24L9]*
O-MBA29L12	• Exhibit 6: Smith Engineering and Management *[Exhibit to 11/13/15 Appeal Letter from Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to OCII]*	Letter	11/13/2015	Transportation *[Exhibit to 11/13/15 Appeal Letter from Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance]*
Individuals				
I-Templeton	John William Templeton	Email with Attachment	11/02/2015	Environmental Justice
Individuals Commenting on the SEIR at the November 3, 2015 OCII Commission Hearing[1]				
PH2-Lippe	Thomas Lippe	Transcript	11/03/2015	Land Use; Plans and Policies, Hydrology and Water Quality; Air Quality
PH2-Hawley	Susan Brandt Hawley	Transcript	11/03/2015	Land Use; Plans and Policies
PH2-Templeton	John William Templeton	Transcript	11/03/2015	Environmental Justice

[1] Includes only persons critiquing the SEIR.

SECTION 2: RESPONSES TO LATE COMMENTS ON GENERAL TOPICS

The comments and corresponding responses in this section address topics that do not relate to any specific section of the SEIR or to the environmental review process, although many of these topics are discussed in RTC document Section 13.2. These topics relate to other aspects of the proposed project that are outside the purview of the California Environmental Quality Act (CEQA). These include topics related to:

- Issue GEN-1: Fiscal Feasibility
- Issue GEN-2: Environmental Justice
- Issue GEN-3: Urban Decay
- Issue GEN-4: Fair Trial

Issues Raised by Late Commenters on Fiscal Feasibility

This response addresses all or part of the following comments, which are quoted below:

O-MBA16S6-15

Executive Summary

In order for the Golden State Warriors (GSW) to move to San Francisco, the City must make significant infrastructure investments in transit and commit to providing over $6 million in support each year that the new arena operates. Although estimates of the costs to the City and estimates of City revenues exist, a cash flow analysis of this project has not been produced. Nor has the project been subject to a comparison with plausible alternatives. With a project of this magnitude and with the significant external costs imposed on San Francisco, it is deserving of such an analysis.

This report provides both a cash flow analysis of the arena development and a comparison with a plausible alternative. It also provides a discussion of some of the assumed revenues associated with the project. In particular, the assumptions regarding hotel/motel tax revenues and parking taxes are optimistic. The reality could be millions of dollars less than expected.

Although the cash flow analysis suggests that the project will turn a surplus of revenue in the fourth year of arena operations, a comparison with an alternative development suggests that from a financial perspective the City could do much better. If a biotech facility were constructed in place of the arena, it is possible that City revenues over the course of 22 years (two years of construction and 20 years of operation) could be more than $39.9 million higher in net present discounted value terms, or $1.8 million per year over 22 years. This comparison is with a conservative investment. With a more aggressive development option, the net present discounted value of revenues could be as much as $150 million higher, or nearly $7 million per year.

It is worth noting that the effective subsidy provided by the City of San Francisco to provide transit infrastructure and traffic mediation amounts to roughly $150 million over the same 22 years, again in present discounted value terms. Were this subsidy not necessary, the Warriors development project would have a revenue impact to the City comparable to that of the more aggressive development option. Unfortunately, the Warriors development project requires the extensive subsidy while a biotechnology center would not. The biotechnology center, whether using conservative or aggressive assumptions, provides greater net revenues to the City of San Francisco than does the development including the Arena, by between $1.8 and $7 million per year.

These figures can be thought of as the amount that San Franciscans are paying to bring the Warriors to town. It is the amount of revenues that the City would forgo with the GSW project, relative to a

plausible alternative. This is not to say that the project is a bad idea, but merely to point out what is being given up in order to accommodate the Warriors' move.

Key Findings

1. A cash flow analysis of the arena through the first twenty years of operation suggests net revenues for San Francisco of $96 million. This is net of City expenses of approximately$150 million during this time for transit and traffic mitigation.
2. A cash flow analysis of the arena through the first twenty years of operation suggests net revenues for San Francisco of $96 million. This is net of City expenses of approximately$150 million during this time for transit and traffic mitigation.
3. Although the Arena generates significant revenues for San Francisco, the City's costs will exceed its revenues from the development for at least the first three years of Arena operation, putting the taxpayers on the hook for the difference.
4. There are elements of the estimates of City revenues that are filled with uncertainty. In particular, the hotel/motel and parking revenues are highly speculative. This uncertainty may imply a broader burden for City taxpayers.
5. If hotel/motel revenues are overstated by half, which is possible, that would reduce City revenues by $13.2 million in the first 20 years of Arena operation.
6. If an alternative development, one suited to biotechnology, were pursued, the City's net revenues would be nearly $40 million higher and possibly as much as $150 million higher over 22 years, or $7 million per year.
7. An alternative development would have considerably larger economic impacts for the rest of the San Francisco Economy than would an arena, and would generate significantly more jobs, more than 2,000 on-site. Oracle Arena currently generates just 494 jobs.
8. An alternative development would generate as much as $1 billion in direct economic activity on-site and perhaps as much as an additional $1 billion in ancillary benefits to the broader San Francisco economy.
9. Forgoing the biotechnology development and pursuing the Arena reduces net revenues to the City of San Francisco by $2 to $7 million per year.

1: Introduction

In 2017, the Golden State Warriors are expected to begin playing in San Francisco. Although this is an exciting development for the City of San Francisco, the economics of the Warriors presence in the City are unclear. There are likely to be significant revenue benefits for the City, but welcoming the Warriors will also involve significant infrastructure investments and ongoing expenses for the City and County of San Francisco. The net effects of these revenues and costs have not been adequately addressed.[1]

It is not clear whether San Francisco is importing a lucrative asset or a financial burden; that is, it is not clear whether the revenues associated with the Warriors play in San Francisco exceed the considerable upfront investments that the City must make. It is also an open question as to what exactly the City might be giving up in order to host the Warriors. The 12-acre parcel on which the arena is to be built is a valuable piece of real estate. In 2010, Salesforce paid $278 million for a 14-acre site that includes the property in question. The property, located as it is across the street from UCSF and near a variety of biotech companies, seems a likely candidate for a biotech friendly building.[2] Were this to happen, it would yield significant benefits for the City. Whether or not these financial benefits exceed those associated with the Warriors is the subject of this report.

The report proceeds to review the costs and benefits associated with the Warriors, as they have been made public. This is followed by an estimate of the likely benefits of a biotech development

occupying the same space. The benefits of the GSW plan are then examined from a perspective of robustness, whether or not they are likely to come to pass.

This report provides a cash flow analysis of the GSW project and compares that analysis with an alternative development that includes a biotechnology-oriented commercial structure in place of the arena. The GSW project is cash flow positive, but not until at least the fourth year of operations. Relative to the alternative development, even after 20 years of operating, the GSW project falls short in terms of net government revenues by approximately $39.9 million, or $1.8 million per year over 22 years. Alternative developments, with more aggressive assumptions, though still plausible, suggest that City revenues could increase by as much as $151.6 million after 22 years, or$6.9 million per year, without the need for heavy subsidization on the part of the City in the early years. From a purely financial perspective, the GSW project is a significant drain on City revenues relative to what alternative developments might yield.[3]

2: Benefits and Costs of Hosting the Warriors

– Benefits/Revenues

As with any economic activity, there are certainly financial benefits for the City of San Francisco associated with hosting the Warriors. A report has been produced for the City of San Francisco that provides a fiscal analysis of the GSW project.4 These benefits are derived from one-time revenues from the purchase of the land and arena construction and ongoing benefits associated with the events that the stadium hosts. The ongoing benefits also include revenues from commercial and retail activity built into the project, as well as parking revenues both on-site and off-site and off-site hotel and motel taxes. Table 1 provides a summary of an estimate of those benefits. Annually, stadium, retail, and office operations associated with the development are estimated to provide just over $14.1 million in revenues to the City of San Francisco.

Table 1. Summary of San Francisco Revenues from Ongoing Stadium Operations (Thousands of 2014 dollars)

Annual Project-Generated Revenues	General Fund Revenues	Dedicated and Restricted Accounts	All Accounts
Revenues From on-Site Businesses	$9,626 (84%)	$1,883 (73%)	$11,509 (82%)
Revenues From off-Site Hotels and Parking	$1,887 (16%)	$714 (27%)	$2,601 (18%)
Total Annual Project-Generated Revenues	$11,513 (100%)	$2,597 (100%)	$14,110 (100%)

Source: EPS and Keyser Marston Associates

Of these $14.1 million in revenues, $11.5 million are associated with the arena and on-site businesses. Although the majority of these revenues accrue to the general fund ($9.6 million), nearly $2 million goes directly to dedicated and restricted accounts. At the same time, nearly $2.6 million are estimated to be from off-site sources, $714 thousand of which are destined for dedicated and restricted accounts.

Table 2 provides estimates of detailed categories of revenues associated with ongoing economic activity once the development is completed. The largest categories of revenue include the stadium admission tax ($4.3 million), gross receipts taxes ($2.5 million) property taxes ($2.5 million, including both general fund and MTA revenues), hotel/motel or transient occupancy taxes ($1.7 million), and parking taxes ($2.4 million). These five categories account for the vast majority of revenues associated with the development.

Table 2. Details of San Francisco Revenues from Ongoing Stadium Operations (2014 dollars)

Item	Amount
Annual General Revenue	
Property Tax (General Fund)	$912,000
Property Tax in Lieu of VLF	$868,000
Sales Tax	$521,000
Hotel/Motel Tax (General Fund)	$1,667,000
Parking Tax	$482,000
Stadium Admission Tax	$4,336,000
Gross Receipts Tax	
On-site	$2,431,000
Off-site	$42,000
Utility User Tax	$254,000
Subtotal	$11,513,000
Annual Other Dedicated and Restricted Revenue	
Special Fund Property Taxes (Children's, Library, and Open Space)	$148,000
Public Safety Sales Tax	$260,000
San Francisco County Transportation Authority Sales Tax	$260,000
MTA Parking Tax	$1,929,000
Subtotal	$2,597,000
Total Ongoing Revenues	$14,110,000

Source: EPS, 9/25/15, Table 1

As mentioned, there will also be one-time revenues associated with the construction of the arena and the accompanying office and retail space (Table 3). These benefits amount to just over $27.6 million, the vast majority of which is associated with the TIDF, or Transportation Impact Development Fee.[5] Another significant source of one-time revenue comes in the form of a Property Transfer Tax, $4.2 million. Sales taxes and gross receipts taxes collected during construction add another $5.4 million.

Table 3. Summary of One-Time Revenues from Stadium Construction (2014 dollars)

Item	Difference
City Fees (per gross building sq. ft.)	
Child Care	$662,000
Transit Impact Development Fee	$17,436,000
Other One-Time Revenues	
Sales Taxes During Construction	$2,355,000
Gross Receipts Tax During Construction	$2,953,000
Property Transfer Tax from Initial Land Sale	$4,200,000
Total One-Time Revenues	$27,605,000

Source: EPS, 9/25/15, Table 2. Revised by Marin Economic Consulting to reflect changes in Table A-6 of the EPS report.

– Costs

As with the benefits, there are also one-time and ongoing costs. The one-time costs are primarily those associated with enhancing transportation infrastructure and amount to $55.3 million.[6] These costs include Transit Investments (the purchase of light rail vehicles), the installation of crossovers, the construction of a new center boarding platform, power augments to idling event trains, traffic/signals engineering investments, and a Mariposa Street restriping study.

These expenses are spread out over a four-year period, with the vast majority of expenses occurring in the 2016-17 MTA fiscal year. A major expenditure on light rail vehicles is slated to take place in the 2017-18 FY, when the Event Center begins operating. The costs to MTA are heavily loaded in the early years of the project, before ongoing revenues have begun. Estimated one-time revenues will be available during this time to cover expenses, but they will fall short of the total by approximately $30.2 million.[7] This difference will be covered by contributions from San Francisco's General Fund, whether all at once or through the financing of these expenditures that are net of revenues.

Table 4 provides the details of the City's estimates of ongoing expenses related to the operation of the Event Center. As of early October, estimated annual net ongoing costs associated with operations at the Event Center amount to $6.2 million.[8] The vast majority, $5.1 million, are associated transit costs. It is worth noting that this estimate has decreased by $0.4 million between May and October of this year. Other expenses are reported as they were presented in May, including nearly$1 million in additional policing, and $200 thousand in expenses incurred by DPW.

Table 4. Ongoing Costs of the Arena (millions of 2014 dollars)

Agency	May 18 Estimates	October 6 Revisions
SFMTA	$5.5	$5.1
SFPD	$0.9	
DPW	$0.2	
Total	$6.6	$6.2

Source: Golden State Warriors Arena: Event Management OCII Commission Presentation, May 18, 2015, and MTA, October 6, 2015.

– Net Benefits

The project comes with considerable costs and benefits. Both upfront net costs and ongoing net revenues are considerable. It is our view that the original EPS report was incomplete in not considering the implications of the project over time. It failed to provide a comparison of overall costs and benefits associated with the GSW project. The reviewer, Keyser Marston Associates, appeared to agree with the EPS approach, saying that a "cash flow approach is appropriate to evaluate a multi-phase project, which does not apply to this project." We respectfully disagree. There are two stages to this project: first, the one-time infrastructure investments and revenue implications of construction and parcel purchase, and second, the ongoing costs and revenues. The project's benefits to the City come inherently in two stages. If both stages yielded a net benefit, the need for a cash flow approach would not be nearly as acute. As the first stage is significantly negative, the overall net benefits must be evaluated over time in order to properly evaluate the project.

This has not been publicly done. Here, we consider a 20-year period following the construction of the Event Center. Given that many of these revenues accrue many years in the future, it is necessary to discount them to today's dollars. The bottom line is the present discounted value of the net stream of revenues to the City of San Francisco.

Assumptions crucial to the present value discount calculation:

1. Discount Rate: 4.0%
2. Rate of inflation: 2.5% (2% for property taxes, as per Proposition 13)

Table 5 provides an estimate of the present discounted value of net revenues to the City of San Francisco, using estimates from the EPS report of September 25, 2015 and from documents from the City of San Francisco. Once the facility has been operating for 20 years, net revenues are ex-pected to be on the order of $95.7 million, or approximately $4.3 million per year over a 22-year period including two years of construction and 20 years of operation. This estimate includes the upfront expenses incurred by the City as well as the ongoing expenses associated with event traffic mitigation.

Table 5. Net Benefits of GSW Event Center Project over 22 years (Millions of Present Discounted 2014 dollars)

	Benefits	Costs	Net Benefits
One-Time	$27.6	$55.3	−$27.7
Ongoing	$221.4	$98.0	$123.4
Total	$249.1	$153.3	$95.7

Source: Calculations by Marin Economic Consulting.

The project pencils out as estimated. This calculus, however, begs two important questions:

1. This is a 12-acre plot of land in the middle of a biotechnology hub. Are there better uses for this land from a revenue perspective?
2. Estimating the costs associated with event management is a more certain endeavor than estimating the benefits. How certain is it that the benefits will materialize?

For a project of this magnitude, it is vitally important to evaluate the potential for plausible alternatives to provide more benefits than the project in question. It is also important to consider robustness tests for the revenues in question. Neither of these issues has been publicly addressed. This report will present plausible revenues associated with an alternative development, a space designed with biotech in mind, and will discuss weak points in the revenue estimates presented above.

3: On the Economics of Biotech as an Alternative

When evaluating the benefits of an economic endeavor, an exploration of alternatives is vital to understanding the full implications of an investment. Suppose that instead of building a 750,000-square-foot arena, the amount of commercial space on the property were doubled. In this section, we consider such an investment. In this exercise, we follow as closely as possible the assumptions contained in the EPS estimate of revenues associated with the GSW project.

Important assumptions associated with this analysis include:

1. Instead of a 750,000-square-foot arena, a commercial facility is constructed that provides 522,000 square feet of space. This constitutes an exact doubling of the commercial space in the GSW plan. This alternative development is otherwise comparable to the Warriors plan, including the original commercial, retail, and parking structures.
2. The space is designed with biotechnology in mind, which brings with it significant laboratory space. As such, it has a relatively high amount of space per worker associated with it: 250 square feet per employee.[9]
3. The transaction price for the land is unchanged at $172.5 million.[10]
4. It is assumed that just two-thirds of the biotech revenues generated onsite are subject to gross receipts taxation in San Francisco.[11]
5. It is also assumed that a commercial facility would have ancillary benefits in terms of indirect and induced economic activity in San Francisco. Consistent with the EPS report, it is assumed that 90% of the ancillary output generated is subject to the Gross Receipts Tax.[12]

With the addition of these assumptions, an exercise analogous to that undertaken by EPS is performed for the new development. The new development includes the same retail revenues and costs, the same parking revenues, and essentially double the revenues associated with commercial development. Doubling the office space and maintaining other assets leads to an assessed value of at least $605.5 million. This is considerably less than the project's assessed value with an arena.

Support for the notion that this construction is feasible comes not only from the 750,000-square-foot arena that the buildings will be replacing, but also from a similar planned development. UCSF was planning to build 500,000 square feet on four acres of blocks 33-34, right next to the site.[13] A new

building of the size being considered is clearly feasible on the space currently to be occupied by the arena.

Table 5 presents a comparison of the one-time revenues and expenditures associated with the Event Center versus doubling the commercial space on the 12-acre property. While the Event Center brings with it a need for considerable infrastructure to accommodate the development, it is not clear that a doubling of the commercial space does. Accordingly, the Event Center brings with it a net upfront cost of $37.5 million, relative to a commercial facility in place of the Center.

Table 5. Summary of One-Time Revenues from Development
(Thousands of 2014 Dollars)

Category	Biotech	GSW Arena	Difference
Property Transfer Tax	4,200	4,200	0
City Fees - TIDF	10,902	17,436	-6,534
- Child Care	1,263	662	601
Construction			
- Sales Taxes	1,617	2,354	-737
- Gross Receipts Taxes	2,028	2,953	-925
Total	20,010	27,605	-7,595
One-Time Expenses Associated with Development			
Infrastructure Improvements	10,901	55,308	-44,407
Net One-Time Revenues Associated with Development			
Immediate Net Revenue Impact	9,108	-28,410	37,518

Source: EPS Report (9/25/15) and calculations by Marin Economic Consulting.

Although capital expenditures related to the Event Center are significantly higher than the revenues brought in through the TIDF, such is not expected to be the case for additional commercial space. The TIDF was put in place with developments such as this alternative in mind. Therefore, the tran-sit costs associated with the development are better approximated using the TIDF taxation formula. The TIDF collected from the hypothetical alternative development (including the commercial, retail and parking in the GSW project) will serve as our estimate of related transit costs, $10,901.

In the analysis above, the sales price for the property on which the event center and accompany-ing commercial and retail structures will be built is the same as in the EPS report: $172,546,000. Property transfer tax would result regardless of the purchaser and the end use, but conceivably at a higher price. Salesforce originally paid $278 million dollars for 14 acres (including the space in question) in 2010. The current sales price is $172.5 million for 12 acres (actual is $150 million). The plot of land in question represents the majority of the plot originally purchased by Salesforce, and is the largest single contiguous piece. Property values have also increased substantially since the original purchase by Salesforce.[14] It seems likely then that the value of the land would have increased significantly over the last five years as San Francisco is currently starved for commer-cial real estate. In the end, the price that the Warriors have paid for the land is surprisingly low. It represents the bulk of a property that was valued at $278 million in 2010 and market values have only increased in the intervening years. Therefore, the actual market value of the land may well be higher than the price the Warriors have been offered and have paid, with correspondingly higher transfer taxes resulting from some alternative development.

Table 6 provides an analysis of the annual City revenues and expenses that can be attributed to each of the projects.[15] The first column is for the alternative development which targets the biotechnol-ogy industry. The second column reflects estimates regarding the current Golden State Warriors project, and the final column presents the difference in expected revenue between the two.

Table 6. Summary of Annual Revenues and Expenses (in Thousands of 2014 Dollars)

Category	Biotech	GSW Arena	Difference
Annual Direct General Revenue			
Property Tax (General Fund)	$603	$912	-$309
Property Tax in Lieu of VLF	$570	$868	-$298
Sales Tax	$253	$521	-$268
Hotel/Motel Tax (General Fund)	$0	$1,667	-$1,667
Parking Tax	$243	$482	-$239
Stadium Admission Tax	$0	$4,336	-$4,336
Gross Receipts Tax			
On-site	$4,078	$2,431	$1,647
Off-site	$0	$42	-$42
Utility User Tax	$249	$254	-$5
Subtotal	$5,996	$11,513	-$5,517
Annual Other Dedicated and Restricted Direct Revenue			
Special Fund Property Taxes (Children's, Library, and Open Space)	$98	$148	-$50
Public Safety Sales Tax	$127	$260	-$133
San Francisco County Transportation Authority Sales Tax	$127	$260	-$133
MTA Parking Tax	$971	$1,929	-$958
Subtotal	$1,322	$2,597	-$1,275
Total Revenues	$7,318	$14,110	-$6,792
Annual Development-Related Expenses			
SFMTA	$0	$5,100	-$5,100
SFPD	$0	$900	-$900
DPW	$0	$200	-$200
Total Expenses	$0	$6,200	-$6,200
Net Annual Revenues	$7,318	$7,910	–$592
Ancillary Benefits Associated with Each Project			
Gross Receipts Tax	$754	$0	$754
Total Annual Net Revenue Expectation	$8,071	$7,910	$162

Source: EPS Report and calculations by Marin Economic Consulting.

In most categories, the annual revenues are greater for the Event Center than for a development with additional commercial space. The exception is in the Gross Receipts Taxes, where a biotech firm occupies the additional commercial space. Taken as a whole, annual revenues from a purely commercial development are $6.8 million less than for the project under consideration. Once the expenses related to the activities at the Event Center are taken into consideration, annual net revenues are nearly identical. However, expanding the commercial element of the development has considerable ancillary benefits. Most economic functions both make purchases from the broader economy and also compensate workers, who then in turn make purchases from the broader economy. The gross receipts taxes associated with output in the San Francisco economy that is related to activities in the additional commercial space are estimated to be $754,000 per year.[16] Once these benefits have been considered, the commercial development results in $162,000 more in revenues annually than would the arena (last line of Table 6). From a net revenue perspective, a commercial development dominates the Event Center.

As discussed above, merely calculating the one-time costs and an estimate of the ongoing revenue is insufficient. Were it sufficient, a commercial project focused on biotech would clearly dominate the current project. Table 7 provides an evaluation of the 22-year net benefits of an alternative development with space devoted to biotechnology comparable to the evaluation for the current project.

Table 7. Net Benefits of Alternative Developments after 22 Years
(Millions of Present Discounted 2014 Dollars)

	Biotechnology		Net Benefits		
	Benefits	Costs	Biotech	GSW	Difference
One-Time	$20.0	$10.9	$9.1	–$27.7	$36.8
Ongoing	$126.5	$0.0	$126.5	$123.4	$3.1
Total	$146.5	$10.9	$135.6	$95.7	**$39.9**

Source: Calculations by Marin Economic Consulting

According to these calculations, an alternative development would provide an extra $39.9 million in revenues for the City of San Francisco (as in Table 7). Net present discounted revenues for the project with an Event Center are $95.7 million, while a project with commercial space devoted to attracting biotechnology firms has a discounted value of net revenues expected to be $135.6 million, a difference of $39.9 million dollars, or an additional $1.8 million each year on average over the 22 years.

From a cash flow perspective, there is a deep hole early on with the Event Center. The first three columns of Table 8 present annual present discounted flows of revenues into San Francisco City coffers. The final three columns provide a cash flow, or cumulative contribution to City coffers. Several things are immediately apparent from the table:

1. The Event Center puts an enormous hole in the City's budget in the first year (row 1, column 4).
2. Substituting a commercial development is cash flow positive in the first year (row 3, column 5).
3. It will take four years of operation of the Event Center to dig the City out of the hole (column 6).
4. Although the gap in annual discounted net revenue closes over time, it remains significant even in year 20 (last row, column 4).
5. In year 20 of Event Center operations, there remains a surplus of revenue in the amount of$39.9 million for the biotechnology development (last row, last column), which continues to grow in subsequent years.

A final issue that differentiates a biotechnology-centric development over an arena is one of economic impact. It is clear from the economics literature that sports stadiums and arenas provide little economic boost to the local economy. At the same time, it is clear that these facilities are responsible for generating some local economic activity. The failure to add to a region's economy is because they tend to displace other entertainment purchases from the broader economy rather than to stimulate new spending. An individual may go to a basketball game instead of to a play, opera, symphony, or rock concert. These facilities are therefore not additive to the economy.

Nonetheless, it has been estimated that economic activity associated with Oracle Arena accounts for $44.9 million in economic Activity and 494 jobs in Alameda County.[17] It seems likely that the impact of the new arena will be of a similar magnitude.

By comparison, a 522,000 square foot biotechnology facility, with a ratio of space to employee of 250 to 1 can accommodate more than 2,000 employees. That represents four times more employment for biotechnology than for the Arena. It is also consistent with an estimate of economic output on the order of $1 billion, an order of magnitude higher than for the Arena. Accordingly, the biotechnology development can serve as a much more significant engine of economic growth for the region than can the new event center. Ancillary (indirect and induced) economic benefits for the City of San Francisco are estimated to similarly be in excess of $1 billion. The gross receipts tax implications for the City of San Francisco are conservatively estimated to be $754,000 per year.[18]

Table 8. Stream of Net Revenues over Time
(Thousands of 2014 Discounted Dollars)

	Annual			Cumulative		
Year	Biotech	GSW	Difference	Biotech	GSW	Difference
One-Time Net Revenues:						
2016	$9,108	-$27,704	$36,812	$9,108	-$27,704	$36,812
Start of Ongoing Revenues:						
2017	$7,600	$7,440	$160	$16,708	-$20,264	$36,972
2018	$7,450	$7,290	$160	$24,158	-$12,974	$37,132
2019	$7,302	$7,142	$160	$31,460	-$5,831	$37,292
2020	$7,157	$6,998	$159	$38,618	$1,167	$37,451
2021	$7,016	$6,857	$159	$45,633	$8,024	$37,609
2022	$6,877	$6,718	$158	$52,510	$14,742	$37,768
2023	$6,740	$6,583	$157	$59,250	$21,325	$37,925
2024	$6,607	$6,450	$157	$65,857	$27,775	$38,082
2025	$6,476	$6,320	$156	$72,333	$34,095	$38,238
2026	$6,348	$6,192	$155	$78,681	$40,288	$38,393
2027	$6,222	$6,068	$154	$84,903	$46,355	$38,547
2028	$6,099	$5,945	$154	$91,001	$52,300	$38,701
2029	$5,978	$5,825	$153	$96,979	$58,126	$38,854
2030	$5,860	$5,708	$152	$102,839	$63,834	$39,006
2031	$5,744	$5,593	$151	$108,583	$69,427	$39,157
2032	$5,630	$5,480	$150	$114,213	$74,907	$39,307
2033	$5,519	$5,370	$149	$119,732	$80,277	$39,456
2034	$5,410	$5,262	$148	$125,142	$85,538	$39,603
2035	$5,303	$5,156	$147	$130,444	$90,694	$39,750
Year 20 of Event Center operation:						
2036	$5,198	$5,052	$146	$135,642	$95,746	$39,896

Source: Marin Economic Consulting

4: Questioning the Benefits and Costs of the GSW Project

There are few guarantees with economic endeavors. Assuming that the conditions that exist today will exist tomorrow, the day after that, or 20 years from now is of dubious merit. Conditions change. The level of success of a basketball team ebbs and flows (though hopefully not for the Warriors), the economy grows and shrinks, modes of transportation change, and the availability of hotel rooms may decline as demand grows but supply does not.

This certainly holds true for the construction of an arena. While it is quite likely that the Warriors will play at the arena for the foreseeable future and experience a high level of success for some time, it is not certain that the estimated revenues will materialize. As a case in point, the EPS study assumes a sales price for the land of $172,546,000. It has just been announced that the sales price was $150,000,000. That represents a reduction in sales price of 13%, with a corresponding reduction in revenues that are tied to the sales price: transfer taxes and ongoing property taxes. Although the long-term implications of a decline in ongoing property taxes is likely small, the transfer tax is reduced from $4.2 million to $3.65 million, a reduction in one-time revenues of $549,000. Granted, this is just one percent of the one-time transit costs associated with the project, but it is more than half a million dollars no longer available for other city needs.

Two categories of revenue are particularly suspect: hotels and parking. With regard to hotels, it is not immediately clear that moving the venue from Oakland to San Francisco will necessarily lead to a significant increase in demand for hotel rooms in San Francisco. With regard to parking, the demand for parking ebbs and flows with the economy. It is also likely that demand for parking will decline

significantly in the coming years. Estimates included in the EPS report are therefore likely biased upward and those revenues will not fully materialize.

– Hotel/Motel Occupancy Tax

There are primarily two concerns related to forecasts of increased demand for hotel rooms in San Francisco resulting from the construction of the Event Center. First, San Francisco hotel occupancy rates for much of the year are very high, implying little excess capacity to be filled by basket-ball fans. During times of high demand for hotel rooms in San Francisco, many of those staying overnight for an event at the arena may choose to stay outside of the City. Alternatively, the demand resulting from arena events may well divert others to hotel rooms outside of the City. Second, it is also likely that many overnight visitors for the Warriors games currently stay in San Francisco, despite attending a game played in Oakland. Despite the change of venue to San Francisco, it is not clear that this shift will result in a significant net increase in demand for San Francisco hotel rooms.

The EPS estimates of revenues associated with the GSW project indicate an increase in hotel room occupancy. However, San Francisco is generally regarded as having a significant shortage of hotel rooms and to be operating near full capacity. Indeed, occupancy rates for San Francisco are high by any standard. San Francisco ranks third nationally in occupancy rates; New York is ranked #1.

The EPS report assumes that 10% of Event Center attendees are potential overnight visitors but that only half of them will constitute new demand for hotel rooms in San Francisco. This assumption represents an increase in demand for hotel rooms of approximately 50,000. However, it is likely that many current overnight visitors to Oracle Arena stay in San Francisco. It is entirely possible that a new arena will have a much smaller net impact on the demand for hotel rooms in San Francisco. This puts some $1.7 million in expected additional revenues in question. If half of this demand does not materialize, or is displacement of other demand for hotel rooms in the City, this could reduce overall revenues by half, or by $800,000 to $900,000 in each year of operation, amounting to more than $13 million in present discounted terms over 20 years of arena operation.

– Parking

Going forward, the use of personal vehicles and hence the demand for parking, as well as transit services, is going to be subject to significant disruption. In particular, ride-sharing services continue to grow, especially in San Francisco. With the use of these vehicles, the demand for parking at an event site will likely decline. There is also growing evidence that autonomous vehicles will be available in the near future. Several automobile and tech companies have announced a target date of 2020 for making these cars, or cars with this capacity, available to the general public. The growth of ride-sharing and the development of autonomous vehicles will likely reduce the demand for parking, particularly the demand related to attending events. The advent of autonomous cars being used in car-sharing will significantly increase the rate at which parking demand declines. Current estimates are that the Event Center will result in the demand for parking spaces on the order of 422,000 per year. Some of this demand for parking is likely to evaporate over time.

There could also be a significant decline in the demand for public transportation resulting from increased car-sharing. This has several implications. First, planned investments in infrastructure designed to expand transit availability to serve events may be rendered to some extent obsolete as people move away from transit and toward the use of autonomous vehicles, whether shared or privately owned. This represents a move away from transit toward private vehicles. Despite the projected decline in parking demand, this represents increased need for traffic mitigation of some sort. There will likely be an increase in vehicular traffic to and from the Event Center that could have implications for the arena's neighbors.

With the advent of autonomous vehicles and greater use of ride-sharing services, it is possible that demand for parking could decline significantly over the coming years. If we assume that it declines at a rate of 1% each year, that would reduce revenues associated with parking by $3.8 million over the 20-year time horizon. It will also reduce parking demand for a biotechnology development, but by less, just $1.9 million over 20 years. Should parking demand decline more quickly (5%/year), revenues could decline by as much as $15 million

– Net Benefits

The point of this discussion is that estimated revenues are suspect, while estimated costs are much more likely accurate. Fixed investments, in particular, are known and not subject to market whims. However in this case, there are unknowns lurking in the cost estimates. It is likely that the revenue implications are biased high, resulting in uncertainty over their future stream with more downside risk than upside. It is already the case that actual one-time revenues have turned out to be less than anticipated (such as the transfer tax, which was lower by $549,000) and that the City has revised its estimates of one-time costs upward (by nearly $16 million) and its estimates of ongoing expenses upward (by $1.4 million in each year). Clearly, there is great uncertainty in almost all of these estimates.

5: Some Sensitivity Analysis

In each case, the revenue estimates relating to the GSW project and the revenue estimates relating to a biotechnology center are uncertain. It is therefore worthwhile to experiment with basic assumptions to better understand the implications for City revenues. Table 9 offers some evidence for the implications of particular assumptions. We provide four separate alternatives that relax in different ways the assumptions inherent in the baseline analysis. The top line of the table presents the baseline results of the analysis, the estimates of present discounted net revenues accruing to the City (corresponding to the last row in Table 7). In the case of the biotechnology development net present discounted revenues are $135.6 million whereas they are just $95.7 million for the GSW project, a difference of $39.9 million.

Table 9. Summary of Net Present Discounted Value Associated with Alternatives (22 Years, 2015-2036) Comparing the Multi-Purpose Venue with a Biotechnology Center (Millions)

Item	Biotech	GSW	Difference Over 22 Years	Difference Per Year
Baseline	$135.6	$95.7	$39.9	$1.8
Alternative 1	$135.6	$82.6	$53.1	$2.4
- Hotel/Motel Revenues are overstated by 50% in EPS report		*OverBaseline* :	$13.2	
Alternative 2	$147.0	$95.7	$51.2	$2.3
- Area to employee ratio for Biotech of 200/1		*OverBaseline* :	$11.3	
Alternative 3	$154.5	$95.7	$58.7	$2.7
- Add 200,000 sq ft to New Commercial Space (722,000 total)		*OverBaseline* :	$18.0	
Alternative 4 (Extreme)	$234.2	$82.6	$151.6	$6.9
- Area to employee ratio for Biotech of 150/1		*OverBaseline* :	$111.7	
- 100% of Biotech revenues are subject to GRT				
- Hotel/Motel Revenues are overstated by 50%				
- Add 200,000 sq ft to New Commercial Space (722,000 total)				

Source: Marin Economic Consulting

The first alternative scenario assumes that one-half of the demand for hotel rooms in San Francisco fails to materialize with the GSW project. This results in a reduction of approximately $13.2 million in net present discounted revenues. The revenues associated with the biotechnology development are unchanged because there are no transient occupancy tax revenues assumed to occur.

The second alternative assumes a greater density of employment in the new commercial facility, leaving the existing commercial plans constant. If there are 200 square feet per employee, rather than 250, revenues associated with the new facility increase by more than $11.3 million relative to the baseline. This increase in revenue stems largely from an increase in the output produced by the building's occupants, resulting in increased gross receipts tax revenues. It also increases the occupants interactions with the broader San Francisco economy, having a positive impact on ancillary benefits. Further reducing the space per employee will have correspondingly larger increases in revenues.

A third alternative assumes a larger facility is constructed, with 722,000 square feet of space rather than 522,000 square feet of space. This increases the number of employees working in the space by nearly 40%, holding the assumption that 250 square feet per employee is required. With greater space comes increased employment and increased output and increased demand for the output of the rest of the San Francisco economy. Accordingly, revenues are estimated to increase by nearly$18.0 million with an expanded space. Under this scenario, the net discounted value of City rev-enues increases by $58.7 million relative to the GSW project. Even larger spaces would have a correspondingly larger impact on City revenues.

Finally, an extreme alternative is offered. Alternative 4 allows for a 150 to 1 ratio of square feet to employees, assumes that all of the revenues accruing to the biotech occupants are subject to the GRT, reduces by one-half assumed hotel/motel TOT revenues associated with the Event Center, and involves a building with 722,000 square feet. Under this alternative, City revenues increase by$111.7 million relative to the baseline, with biotechnology revenues exceeding GSW revenues by nearly $151.6 million over 22 years and $6.9 million per year.

These alternatives are not put forward to suggest that there is $151.6 million being left on the table (though there may be), but rather to illustrate the range of differences that underlying assumptions can make. At the same time, even the extreme alternative is plausible.

6: Re-Evaluating the Net Benefits of Hosting the Warriors

There are two fundamental points made in this report:

1. Estimates of costs and revenues are highly speculative, and the evidence suggests that there is more downside risk to the GSW project than upside.
2. There is significant revenue that is forgone by the City in order to bring the Warriors to town.

Both of these points raise significant questions about the Warriors arena project from a financial perspective. First, how comfortable are taxpayers in their understanding of the implications of this development? Second, is this the right development?

The respective answers are "not very" and "quite possibly no." There is uncertainty in the information available and replacing the Event Center in the project with additional commercial space has the potential to increase City revenues significantly.

Another way of thinking about the differences in revenues between the GSW project and a biotechnology development is that these differences reflect the price the City is paying in order to bring the Warriors to town. There are certainly other more tangible costs, but these costs are also real.

The above analysis indicates that even with relatively conservative assumptions, in particular those surrounding employment in the new development and the size of the new development, a biotechnology center would increase City revenues significantly relative to the Event Center. Under the baseline scenario, the difference is $39.9 million over 22 years. Under the most extreme, yet plausible, scenario presented, an additional $151.6 million could be raised over the 22-year period. This analysis presents a range of increases of between $1.8 and $6.9 million per year. It should be noted that the extreme alternative does not include the possibility of a larger facility. Were it to do so, the forgone annual revenues would be significantly higher. This suggests that the City of San Fran-cisco is likely paying more than $1.8 million and possibly upwards of $7 million per year in forgone revenues in each of the next 22 years to accommodate the Warriors.

Every economic development represents a choice. That choice is between the proposed development and plausible alternatives. The City has chosen to pursue a basketball team without exploring or disclosing the relative merits of the project compared with plausible alternatives. This report is not designed to condemn the choice, but rather to better inform the debate on the implications of this choice.

APPENDIX: Details of Annual Revenue Calculations for Biotech in Comparison with the Warriors Project

This appendix provides tables illustrating key differences in the assumptions and results between the analysis presented in the EPS report of 9/25/15 and the biotechnology project discussed in the text. The tables very closely mirror those in the EPS report and reproduce assumptions and results from that report. Some tables are not applicable to the biotechnology project and are omitted. In particular, Tables A-9 through A-11 are omitted. It should also be noted that these tables have not been updated to reflect the actual purchase price paid by the Warriors. It does, however, include updates to the City's estimates of one-time and ongoing costs.

Table A-1. San Francisco Revenue Summary (Thousands of 2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	GSW	Biotech	Difference
Annual General Revenue			
Property Tax (General Fund)	$912	$603	-$309
Property Tax in Lieu of VLF	$868	$570	-$298
Sales Tax	$521	$253	-$268
Hotel/Motel Tax (General Fund)	$1,667	$0	-$1,667
Parking Tax	$482	$243	-$239
Stadium Admission Tax	$4,336	$0	-$4,336
Gross Receipts Tax			
On-site	$2,431	$4,078	$1,647
Off-site	$42	$0	-$42
Utility User Tax	$254	$249	-$5
Subtotal	$11,513	$5,996	-$5,517
Annual Other Dedicated and Restricted Revenue			
Special Fund Property Taxes (Children's, Library, and Open Space)	$148	$98	-$50
Public Safety Sales Tax	$260	$127	-$133
San Francisco County Transportation Authority Sales Tax	$260	$127	-$133
MTA Parking Tax	$1,929	$971	-$958
Subtotal	$2,597	$1,322	-$1,275
TOTAL REVENUES	$14,110	$7,318	-$6,792

Source: EPS and Marin Economic Consulting

Table A-2. San Francisco City One-Time Fee Revenue Summary (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	GSW	Biotech	Difference
New Gross Building Area (sq.ft.)		1,156,500	
City Fees (per gross building sq.ft.)			
Child Care	$661,870	$1,263,240	$601,370
Transit Impact Development Fee	$17,435,765	$10,901,655	−$6,534,110
Total Development Impact Fee	$18,097,635	$12,164,895	−$5,932,740
Other In-Lieu Impact Fees			
Other One-Time Revenues			
Sales Taxes During Construction	$2,354,634	$1,617,159	−$737,475
Gross Receipts Tax During Construction	$2,953,050	$2,027,835	−$925,215
Property Transfer Tax from Initial Land Sale	$4,200,000	$4,200,000	$0

Source: EPS and Marin Economic Consulting

Note: The gross building area for the biotechnology development includes four commercial buildings with 1,044,000 square feet and retail of 112,500 square feet.

Table A-3. San Francisco Property Tax Estimates (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Biotech	Difference
Secured Assessed Value				
Multi-Purpose Venue		$550,000,000	$0	$550,000,000
Other Development				
Event Management/Team Operations Space		$14,500,000	$0	$14,500,000
Retail		$41,343,750	$41,343,750	$0
Office		$302,760,000	$605,520,000	−$302,760,000
Parking		$33,250,000	$33,250,000	$0
Subtotal		$941,853,750	$680,113,750	$261,740,000
New Taxable Value				
Gross Secured Possessory Interest/Property Tax	1.0% of new AV	$9,418,538	$6,801,138	$2,617,400
Unsecured Tax from the Warriors		$183,333	$0	$183,333
Unsecured Tax from Other Uses		$391,854	$0	$391,854
Subtotal		$9,993,725	$6,801,138	$3,192,587
(less) Existing Taxes		−$1,795,169	−$1,795,169	$0
Total		$8,198,556	$5,005,969	$3,192,587
Property Tax				
Tier 1 Property Tax Pass Through	20.00%	$1,639,711	$1,001,194	$638,517
Tier 2 Property Tax Pass Through	16.8%	$1,377,357	$841,003	$536,355
Tier 1 and 2 Property Tax Pass Throughs	36.80%	$3,017,068	$1,842,196	$1,174,872
Net New General Fund Share (after ERAF)	55.59% property tax tier 1 pass through	$911,515	$556,564	$354,952
Special Funds	9.00% property tax tier 1 pass through	$147,574	$90,107	$57,467
SF Unified School District	7.70% property tax pass through	$232,314	$141,849	$90,465
Affordable Housing Set Aside		$1,639,711	$1,001,194	$638,517

Source: EPS and Marin Economic Consulting

Table A-4. Property Tax in Lieu of VLF Estimates (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	GSW	Biotech	Difference
Citywide Total Assessed Value (millions $)	$172,489	$172,489	
Total Assessed Value of Project (millions of $)	$941.85	$680.11	$261.74
(less) Existing Value	−$179.52	−$179.52	
Net Increase in Project Assessed Value (millions $)	$762.34	$500.59	$261.75
Growth in Citywide AV due to Project	0.442%	0.290%	
Total Property Tax in Lieu of Vehicle License Fee (VLF) (FY2014-15)	$196,480,000	$196,480,000	
New Propety Tax in Lieu of VLF	$868,372	$570,220	$298,152

Source: EPS and Marin Economic Consulting

Table A-5. Property Transfer Tax (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Biotech
One-Time Transfer Tax			
Estimated Land Sale		$172,546,000	$172,546,000
One-Time Transfer Tax	$24.34 per $1,000 value	$4,199,770	$4,199,770

Source: EPS and Marin Economic Consulting
Note: The actual transaction price for the property is $150 million.

Table A-6. Sales Tax Estimate (thousands of 2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Biotech	Difference
Taxable Sales from Multi-Purpose Venue				
Warriors Game Concessions and Merchandise	$21.60 per attendee	$15,768		
Other Event Concessions	$11.00 per attendee	$12,859		
Total		$28,627		
Sales Tax to General Fund	1.0% of taxable sales	$286		
(less) Existing Sales Shift		−$18		
Net New Sales Tax		$267		
Taxable Sales From Commercial Space				
Retail	$450 per sq ft	$50,625	$50,625	$0
Sales Tax to San Francisco	1.0% of taxable sales	$506	$506	$0
(less) Shift From Existing Sales		−$253	−$253	$0
Net New Sales Tax		$253	$253	$0
Annual Sales Tax after Shift of Existing Sales				
Sales Tax to the City General Fund	1.00%	$521	$253	−$268
Public Safety Sales Tax	0.50% of taxable sales	$260	$126	−$133
San Francisco County Transportation Authority	0.50% of taxable sales	$260	$127	−$134
SF Public Financing Authority (Schools)	0.25% of taxable sales	$130	$63	−$67
One-Time Sales Taxes on Construction Materials and Supplies				
New Taxable Value		$941,854	$680,114	−$261,740
Supply/Materials Portion of Development Value	50.00%	$470,927	$340,057	−$130,870
San Francisco Capture of Taxable Sales	50.00%	$235,463	$170,028	−$65,435
Sales Tax to San Francisco	1.0% of taxable sales	$2,355	$1,700	−$654

Source: EPS and Marin Economic Consulting

Table A-7. Transient Occupancy Tax Estimates Estimate (2014 dollars)
The implications of over-estimating hotel and motel occupancy.

Item	Assumptions	GSW	50% of GSW	Difference
Overnight Attendees in San Francisco for Multi-Purpose Venue Events				
Events per Year		205	205	0
Total Turnstile Attendance		1,899,000	1,899,000	0
Potential Overnight Visitors		189,900	189,900	0
Net New Overnight Visitors	50% (25%)	94,950	47,475	−47,475
Hotel Room Demand	1.90 people per room	49,974	24,987	−24,987
Off-Site Hotel/Motel Room Proceeds	$238 per-room night	$11,907,203	$5,946,868	−$5,960,335
Total Hotel/Motel Tax Revenue	14% of room revenue	$1,667,012	$832,562	−$834,450

Source: EPS and Marin Economic Consulting

Table A-8. Parking Tax Estimates (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Assumptions	50% of GSW	Difference
Total Spaces On-Site		950		950	
Parking Revenues On-Site					
Total	$25 per day	$8,668,750	$20 per day	$6,935,000	
(less) Vacancy	30%	−$2,600,625	30%	−$2,080,500	
Total		$6,068,125		$4,854,500	
Spaces Off-Site					
Annual Demand (spaces)		$178,791			$0
Total Parking Revenue	$20 per day	$3,575,821			$0
San Francisco Parking Tax	25% of annual revenue	$2,410,987	25% of annual revenue	$1,213,625	−$1,197,362
Parking Tax Allocation to Gen'l Fund/Special Projects	20% of tax proceeds	$482,197	20% of tax proceeds	$242,725	−$239,472
Parking Tax Allocation to Municipal Transportation Fund	80% of tax proceeds	$1,928,789	80% of tax proceeds	$970,900	−$957,889

Source: EPS and Marin Economic Consulting

Table A-12. Parking Tax Estimates (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Biotech	Difference
Arena Utility Cost		$1,490,000	$0	−$1,490,000
Other Uses				
Retail	$2.87 per sq.ft.	$322,875	$322,875	$0
Office (Including Event Management and Team Operations)	$2.87 per sq.ft.	$1,569,890	$2,996,280	$1,426,390
Total Annual Commercial Utility Cost		$3,382,765	$3,319,155	−$63,610
Utility User Tax	7.5% of commercial utility cost	$253,707	$248,937	−$4,771

Source: EPS and Marin Economic Consulting

Footnotes:

1 Accepting the team also results in a significant revenue hole for the City of Oakland in that most events that currently take place at Oracle Arena are projected to move to the new arena.

2 Its neighbors would include UCSF, Celgene Corporation, National Multiple Sclerosis Society, venBio, Nurix, Clovis Oncology, FibroGen, and Illumina, among others.

3 The methodology used in this report is comparable to the methods and assumptions used by EPS in producing its fiscal impact analysis of the GSW arena. The Appendix provides a set of tables that indicate where common assumptions are used.

4 Economic Planning Systems, San Francisco Multi-Purpose Venue Project - Fiscal Impact Analysis: Revenues, 9/25/15. (EPS)

5 http://www.sf-planning.org/ftp/files/legislative_changes/new_code_summaries/120523_TIDF_Transportation_Impact_Development_Fee_Update.pdf Medical and Health Services, and Re-tail/Entertainment economic activity categories was increased to $13.30 per square foot, except that the rate for museums, a subcategory of CIE, are $11.05 per square foot, a reduction from the current amount. The rate for the Management, Information and Professional Services (MIPS) and Visitor Services economic activity categories was increased to $12.64 per square foot, and the rate for the Production/Distribution/Repair (PDR) category was reduced to$6.80 per square foot.

6 One-time costs are from SFMTA, **Capital and Operating Cost Estimates for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32**, 10/6/2015. Estimates are in 2014 dollars.

7 This figure is the difference between $57.8 million, the total estimated capital uses estimate (not just that allocated to the project), and the total one-time revenues from Table 3.

8 bid. The word "net" is included because the City has estimated revenues from fares and parking from riders going to events at the arena. These revenues amount to approximately $1.8 million, split roughly evenly between the two sources.

[9] This is an extremely conservative assumption. Some estimates suggest that a ratio of 150 to 11 is possible. This would considerably increase employment and hence output at the site, increasing the resulting income to both City residents and City coffers.
[10] The actual transaction price has been announced as $150 million. San Francisco Times, **Warriors buy Mission Bay arena site from Salesforce**, 10/13/2015. In this analysis, the transaction price is kept at $172.5 million to maintain comparability with the original EPS study. The change in sales price does have an effect on revenue estimates, but the effect is the same for both the Warriors plan and for the alternative, so it does not affect comparisons between the two.
[11] There are several avenues through which revenues may be exempt from gross receipts taxes in San Francisco. This analysis is extremely conservative in assuming that this is more likely the case for biotechnology firms (perhaps because of significant revenues accruing through pass-through companies) than for firms in other industries.
[12] Estimates of these benefits are derived from the 2013 San Francisco County model of IMPLAN. It should be noted that the EPS report does not provide estimates of the ancillary effects of the commercial aspect of the current project. This report similarly omits those benefits for the existing commercial development, but does include them for the commercial property that could be built in place of the stadium. These ancillary benefits are also reduced by one-half to provide a conservative estimate of the development's contribution to net revenues.
[13] **UCSF, Salesforce in talks for S.F. Mission Bay land deal**, SFGate, March 15, 2014.
[14] **Salesforce.com Is Said to Plan Sale of San Francisco Land**, Bloomberg Business, March 11, 2014.
[15] This alternative is chosen because it will allow the use of most of the EPS parameters and assumptions in producing annual revenues for the alternative project. See the Appendix for a comparison of calculations between this project and the EPS report.
[16] This is half of what is implied by IMPLAN in order to maintain the conservative nature of these estimates.
[17] Memo to Patrick Soluri, Attorney at Law, from Philip King, Ph.D., regarding Urban Decay Analysis of Proposed Relocation of Golden State Warriors from Oakland to San Francisco, page 9.
[18] These estimates are from the 2013 San Francisco County model of IMPLAN and have been scaled to 2014 dollars. The actual estimates of ancillary output generated were divided by two in order to keep the estimates conservative. The actual revenues could be significantly greater.

(*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-15]*)

Response to Late Comment GEN-1: Fiscal Feasibility

Exhibit 6 of a 104-page comment letter received by OCII on Nov 4, 2015 from the Soluri Meserve law firm (Comment O-MBA16S6-15) included an opinion critiquing the fiscal feasibility findings that the City's outside expert Economic & Planning Systems, Inc prepared, Keyser Marston Associates approved through a peer review, and with which the Controller's office concurred. It also argues that biotechnology would be a better use fiscally for the City. The economic benefits of the project in comparison to other hypothetical uses of the site, is not a significant environmental issue require a response under CEQA. (See CEQA Guidelines, § 15088(c).) The merits and opportunity cost of the proposed project are for the decisionmakers to evaluate. Nevertheless, for the reasons set forth below, OCII disagrees with the commenter. Further, as described in this response, the proposed project is a net financial benefit to the City and provides a means to invest in and improve the City's transit infrastructure. Regardless, the appellant's opinions concerning the fiscal feasibility analysis conducted for the project does not concern the physical environmental effects of the project, and is not germane to the adequacy and accuracy of the SEIR. Therefore, this is not a valid ground for an appeal of the SEIR.

1. In calculating induced demand, the Soluri Meserve consultant, Mr. Haveman, compares 2,000 added biotech employees to the approximately 500 permanent staff of the Warriors. He excludes from his analysis the estimated 372 retail employees and up to 1,000 event center staff that would serve concessions, event management, janitorial and other functions up to 225 times per year, thus the number of employees at the project site is comparable to a biotech use.

2. He assumes no independent utility of any of the upfront transportation investments (4 LRVs, crossover tracks, signals, signage). The transportation investments would benefit all users of the transit system in the neighborhood, other users of the area transit system, and the SFMTA and would serve the arena and neighborhood without cannibalizing service elsewhere in the City.

3. Mr. Haveman's assertion that the City would receive greater net gain from a biotech center than an event center assumes ongoing transit costs associated with a biotech center would be zero. Given the estimated 2,000 employees that a biotech center would add, this is a false premise. In the analysis, savings from zeroing out ongoing transit costs are partially offset by the loss of stadium admissions tax proceeds as well as reductions in every category of taxes collected other than gross receipts. In fact, an April 20, 2015 comparison by EPS of the proposed project to the previously proposed salesforce.com project which is nearly identical in scope to Mr. Haveman's proposed biotech campus (1,026,000 square feet of office and 30,000 square feet of retail employing 3,942 FTEs) would have generated only $6,753,000. This is $7,357,000 less than the $14,110,000 estimated to be generated by the proposed project on an annual basis (See Attachment A to this Exhibit D).

4. The report questions the capacity of the City's hotel market to accommodate additional event attendees without simply displacing other overnight visitors and whether event attendees were already staying in the City when the events were held at Oracle Arena in Oakland. This analysis does not account for the interplay of hotel room prices. Since FY 2010-2011 the City's hotel room occupancy rate has increased modestly from an average of 81.1 to 86.4 percent in FY 2014-2015. Over the same period, average daily rates for hotel rooms have increased by more than 50 percent. The City's hotel market is constrained, but the City's experience is that limits on capacity have caused room rates to increase (and corresponding hotel tax revenues) as capacity is filled. In addition, there are numerous hotel projects currently planned or being built, including the Block 1 site on Third Street and Channel Street in Mission Bay North.

5. The report assumes that $10,901,000, the amount of estimated TIDF [Transit Impact Development Fee] collected from the hypothetical alternative development (including the commercial, retail and parking in the GSW project) serves as an accurate estimate of all transit costs for a biotech alternative to the event center, whereas the event center transit cost assumptions substantially exceed the event center TIDF revenue. The justification given — that the TIDF was designed for an office development and not an event center is untrue — as the rates are based on a study of the comparative burdens placed on transit by different uses, including office uses and entertainment uses. (SF Planning Code Section 411.1 Findings). Further, the TIDF is a development impact fee and conservatively sets rates below actual costs; further, by law TIDF proceeds can only go to infrastructure and capital improvements, not operation and maintenance. Thus, costs to the transit system of a biotech use with 2,000 employees will be more than the amount of the TIDF collected.

6. The reported sales price excludes the purchase price of 132 parking spaces in the 450 South Street garage, which closed separately for about $5 million, explaining some of the difference between the assumed $172 million purchase price and the $155 million it closed for.

7. The proposed project is estimated to generate $14.1 million per year in 2014 dollars, revenues to the City and County above and beyond tax increment dedicated to OCII for Mission Bay infrastructure and affordable housing. Of this, the City estimates it needs $6.1M in annual operating costs to run extra transit, traffic enforcement, public safety and street sweeping services and an estimated $2.7 million in annual debt service payments to purchase four new light rail vehicles, expand the adjacent T-Third platform, install crossover tracks, update the nearby T-Third substation and install changeable message signs, intersection signals and closed circuit security cameras. The Mayor and ten members of the Board of Supervisors have sponsored a resolution authorizing the expenditure of additional $0.9 million per year to ensure that arena events that overlap with SF Giants home games do not cause undue traffic congestion. Even if one were to conservatively assume that none of this capital or operating investment benefitted the neighborhood or the citywide network, this still leaves $4.5 million per year for other City uses; $2.6 million of this accrues by law to the Children's, Library and Open Space funds, the County Transportation Authority, the Public Safety sales tax and the SFMTA with the remaining $1.9 million accruing to the City General Fund. The revenue generated by the proposed project compares favorably to every other NBA arena in America and once accounting for the City services a biotech alternative would generate, particularly given its addition of 2,000 employees during the busiest times of day in the a.m. and p.m. peak commute, the project compares favorably to a completely office development.

Issues Raised by Late Commenters on Environmental Justice

This response addresses all or part of the following comments, which are quoted below:

I-Templeton-1 PH2-Templeton-1

After seeing the despicable comments by Planning Commissioner Michael Antonini last week, I was compelled to examine through critical race theory why the statement fails to comply with state and federal law and advisory opinions to address the profound environmental justice issues from the cumulative effects of decades of pollution centered on southeast San Francisco. The precedent for compliance was established firmly in the case of BART's Oakland Airport Connector.

Antonini wrote, as reported:

"Their effect has bought many new residents to San Francisco and helped to provide vitality to many of our neighborhoods that were heretofore economically depressed, unsafe, dirty areas of San Francisco to which few would travel to shop, dine and -much less-live... The population of the neighborhoods have changed dramatically."

*Airbnb is better than... brothels?

"It's better to have short term renters sharing homes with owners, even in RH1 and RH2 neighborhoods, than to have multiple families living in a single family home or for such homes to be used for illegal criminal activities, often pretending to be message [sic] establishments."

For a decade, I engaged with the Excelsior and Bayview Hunters Point communities during the highly successful Branch Library Improvement Program as a board member of the Friends of the San Francisco Public Library, testifying before the Library Commission for the $1 million to build the Bayview Linda Brooks Burton Branch Library instead of just a remodeling. I found those people in the forgotten parts of

the City to be hard-working, determined to raise their families and hopeful that they would share in the blessings that San Francisco has to offer. I also spent a lot of nights coming from evening meetings, particularly on Third Street, waiting for the T-Line in the cold, dark of night for as much as an hour.

Now that we have the Bayview Linda Brooks Burton Branch Library open for public programs as a magnet for the neighborhood, it troubles me that potential visitors would not be able to attend because their access would be blocked by the substantial and unmitigated impacts from placing such a gargantuan arena at the choke point of the $2.2 billion investment of federal, state and local bond and property tax funds to build the T-Line, purportedly to finally link southeast to the rest of the City.

Unfortunately, Mr. Antonini's words are reflected in this EIR, because it assumes that the families of southeast San Francisco are much less valuable than the well-heeled luxury box purchasers who would enrich the owners of the Arena. Sports teams have morphed into a shell for real estate speculation. However, the desire to make windfall profits collides with the mandates of California's pioneering law in environmental justice, continually affirmed by the legislature since 1999 and most recently in advisory opinions by Atty. Gen. Kamala Harris.

It flies in the face of sustainable planning policy to move a large venue from a site which has access from an airport, Amtrak, BART, ACTransit and hundreds of acres of parking to rely on a single stop on the T-Line, which has failed to meet its promised service goals for the past eight years. The only conceivable reason is Antonini's assertion that certain types of people are more desirable. In the past year, two NBA franchises have changed hands because owners made similar admissions.

When the USF Dons had the opportunity in 1951 to play in the Cotton Bowl, only if they left their black players behind, the university and the players turned their back on the bowl, leading to their being labeled "the greatest college football team of all time." It is now time for our City officials to assert the primacy of justice over profit and reject this Arena.

T’eedUP: Technical Fouls Make GSW Arena Bad for Environmental Justice Nov. 1, 2015

EXECUTIVE SUMMARY

A critical race theory analysis of the proposed Golden State Warriors Event Center in Mission Bay indicates that the Subsequent Environmental Impact Report falls short of the standards on the California Environmental Protection Act and the Executive Order 12898 because:

1. It does not address the cumulative effects of a Superfund site, proximity to a highway with more than 200,000 vehicles per day, two power plants and an open air waste water treatment plant and decades of governmental disinvestment on the largest concentration of affordable family housing in the nation’s most expensive city for housing.
2. It breaks promises made to African-Americans throughout the city and Bayview-Hunters Point specifically about the T-Line being the artery to enhance access to the city’ s economy.
3. It values wealth and race in land use decision-making to the financial, health and civic detriment of African-American, Latino and Chinese citizens.
4. It does not supply the stated objective of the General Plan to provide middle class jobs to a community which has 43 percent of the city median income.
    a. This project would block for more than 200 days per year the primary artery from Bayview-Hunters Point during peak hours.
    b. MUNI has a history of missing construction deadlines. The T-Line was 18 months late. The Central Subway was planned to open in 2009.
    c. This project would endanger children forced to use the Muni system to attend public schools and foster truancy or inability to participate in afterschool events.
    d. Utilization of the 22-Fillmore would impact African-American and Latino transit riders.
6. The Subsequent Environmental Impact Statement fails to include any consideration of Environmental Justice nor does it include an Equity Analysis.

7. Expert opinion indicates that it would be easier for most San Franciscans and other citizens throughout the Bay Area to reach the current location (a 15 minute BART trip) than to reach the new facility.
8. The Event Center will raise housing prices, increase real estate speculation, short-term leasing activity and displace minority home owners already having faced the most severe predatory lending activity in the country.
9. A much more effective use of the land would be the development of research and development geared to addressing health disparities, particularly in honor of the late Dr. B. Nathaniel Burbridge.

T'eedUP

Profound Environmental Justice
Issues with the Golden State
Warriors Event Center EIR

- The T-Line currently is on time less than half of its scheduled runs; compared to the predecessor 15 bus line, it carries 20 percent more passengers, but operates 60 percent slower.
- GSW Event Center worsens the race and poverty related stress factors for the highest concentration of affordable housing in the City.
- The City and County of San Francisco has denied southeast San Francisco needed investment for 60 years, according to a 2004 civil grand jury report.
- The Draft Subsequent EIR contradicts the General Plan and the 1998 EIR for the Third Street Light Rail by ignoring the negative impact on Bayview-Hunters Point.
- The 30-Stockton line serving Chinatown is a proxy for the expected demand along the Central Subway. It also fails to achieve on-time operation half of the time. The proposed arena is right at the choking point where the current T-Line and additional Central Subway riders would intersect.
- A critical race theory analysis of the proposal indicates a long history of sports owners using African-American communities to gain public benefits but giving little in return in the Bay Area
- Open air waste treatment in Bayview Hunters Point would lift the smells from 18,000 event center patrons using the toilet into the homes of Bayview-Hunters Point residents, undoing gains in air pollution from closure of power plants.

T'eedUP

Technical Fouls Make Proposed Warriors Arena
Bad for Environmental Justice

*By John William Templeton**

DEFINING ENVIRONMENTAL JUSTICE

Attorney General Kamala D. Harris defines environmental justice as "…the fair treatment of people of all races, cultures and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies," in an advisory for local and regional governments.[1]

The U.S. Department of Transportation requires that its grantees:

"avoid, minimize or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations;

"ensure the full and fair participation by all potentially affected communities in the transportation decision-making process;

"prevent the denial of, reduction in or significant delay in the receipt of benefits by minority and low-income populations.."[2]

***Templeton is co-founder of National Black Business Month and architect of Our10Plan, the African-American economic fairness plan. Given a lifetime achievement award in February 2015 by the S.F. Public Utilities Commission Celebrating Black Achievement program, he served six years on the board of the Friends of the San Francisco Public Library and was active in the Excelsior and Bayview branch campaigns. Author of context statements on African-American history in San Francisco and San Jose, he is creator of the California African-American Freedom Trail. He has presented on environmental justice to Region 9 of the Environmental Protection Agency, the National Park Service, California Historical Resources Commission and U.S. Army Corps of Engineers, Sacramento district. Conservator of the 20,000 image Clarence Gatson Collection and the Wesley Johnson Collection, he convenes the annual Preserving California Black Heritage conference.**

In a 2012 regional videoconference[3] to Region 9 of the Environmental Protection Agency, this writer described southeastern San Francisco as a bellwether for the practice of environmental justice. Community members began addressing a variety of health and environmental factors in the 1940s, soon after World War II, and became famous in 1968 for sitting in at the office of the Secretary of the new Department of Housing and Urban Development until it received $50 million as one for the first two Model Cities initiatives.[4]

CRITICAL RACE THEORY AND ENVIRONMENTAL JUSTICE

Critical race theory emerged as a scholarly field from the recognition that embedded practices in society lead to disparate outcomes. Foster[5] wrote:

> "Consider the problem of environmental racism, understood as the disproportionate distribution of environmentally harmful substances (such as lead) and land uses (such as hazardous waste facilities) in communities of color. As with most adverse racially disparate outcomes across a spectrum of social contexts and goods, there is no clear perpetrator or encompassing theory of causation that explains these outcomes. Indeed, as I have argued, these outcomes are best understood as yet another manifestation of the racism and discrimination that exists throughout our social structure-in housing discrimination, political disenfranchisement, and lack of access to health care and other social amenities."

Decisions for public infrastructure, in this analysis, can have long-lasting generational impacts such as the decision by the New Deal-era Federal Housing Agency to insist on racial covenants as a condition for federal mortgage insurance[6]. It took a 1946 Supreme Court decision to overturn the rule, but the effects for residential segregation have endured for more than 70 years.[7]

When the Bay Area attracted major league sports franchises in the 1950s and 1960s, it located all the facilities in African-American neighborhoods of San Francisco or Oakland.[8] Through the 1990s, all the major league teams played in Bayview Hunters Point or East Oakland, with combined football/baseball stadiums and basketball arenas attracting more than 150 events per year.

In the same year that Willie Mays arrived from New York with the San Francisco Giants, Roy Clay Sr. arrived in the Bay Area as a computer programmer on the most advanced such device in the world, at the Lawrence Radiation Lab in Livermore.[9] His contributions to programming and technology led to his naming as a Silicon Valley Engineering Hall of Fame member in 2002.

Also in 1957, the Santa Clara County Board of Supervisors, in a racially-motivated decision, chose not to join the Bay Area Rapid Transit District (BART), choosing instead to spend its transportation resources on highway construction.[10]

That decision would increase pollution to the north along US. 101 and I-280, built through the same neighborhoods as Candlestick Park and make lucrative defense contractor jobs relatively inaccessible to thousands of African-Americans who had worked in defense industries in the East Bay and southeastern San Francisco since World War II.

In 2015, the ramifications which those decisions set in motion have created a community severely impacted by a variety of air and ground pollutants without the employment base to maintain middle class communities.

A critical race theory analysis of environmental justice must address the long-standing inequities that go beyond the project in question. Although the project sponsors are ignorant of these inequities and may claim no role in causing them, they are the beneficiaries of these decisions and should be held accountable for not worsening already dire circumstances.

The question San Francisco decision-makers should ask is "*Why take the risk of increasing pollution to the most severely impacted community in the city and worsening transit access in order to move a sports arena away from another low-income, minority community?*"

In another decision of regional, long-lasting importance, the City and County of San Francisco now encourages, if not requires, its homeless or poverty-stricken African-American residents to use housing choice vouchers outside the city as far away as Fresno and Bakersfield, moving them even further away from opportunity.[11]

The consequences of its land use decisions must also take the same regional approach. A critical race theory approach is called upon to examine why the Subsequent Environmental Impact Report ("EIR") completely ignored the Bayview-Hunters Point General Plan, the Environmental Impact Report for the Third Street Light Rail and a long history of environmental racism towards the residents of southeastern San Francisco.

For example, the Subsequent EIR acknowledges:

> "significant and unavoidable impacts in the areas of transportation and circulation (traffic impacts at multiple intersections and freeway ramps, and transit demand on regional transit providers exceeding capacity), noise (substantial permanent increase in roadway noise and crowd noise affecting sensitive receptors); air quality (construction and operational emissions or ozone precursors exceeding thresholds) wind, (substantial increase in wind hazard hours at off site public areas and utilities (construction of new or upgrader wastewater facilities and determination by the San Francisco Public Utilities Commission that it currently has inadequate capacity to serve the project's wastewater demand."

For the City and County of San Francisco to accept such outcomes is an act of environmental racism comparable to the restrictive covenants of the New Deal federal housing agency and the Santa Clara County supervisors who rejected BART (only to welcome it in 2015 at a much higher cost).

Ironically, the Santa Clara County employers who turned their back on workers from the East Bay and San Francisco have now gained approval to have their private shuttle buses stop at public transit stops, blocking the regular MUNI lines for a minimal fee without seeking any remediation for the impact on the 60 percent of MUNI riders who are minorities.

For the second time in 50 years, a county government is using transit infrastructure to promote employment segregation. As Goldman writes:

> "Lower-income people should not bear the brunt of the negative externalities of economic development. "[12]

The disparity in the response to the concerns of the affluent and powerful neighbors of Mission Bay speaks volumes in contrast to the complete avoidance of the environmental injustice to be heaped on the long-suffering residents of Bayview-Hunters Point.

See these comments by Planning Commissioner Michael Antonini:[13]

> *Tech and Airbnb have saved San Francisco.
>
> "Their effect has bought many new residents to San Francisco and helped to provide vitality to many of our neighborhoods that were heretofore economically depressed, unsafe, dirty areas of San Francisco to which few would travel to shop, dine and -much less-live... The population of the neighborhoods have changed dramatically."
>
> *Airbnb is better than... brothels?

> "It's better to have short term renters sharing homes with owners, even in RH1 and RH2 neighborhoods, than to have multiple families living in a single family home or for such homes to be used for illegal criminal activities, often pretending to be message [sic] establishments."

Critical race theory highlights the importance of narratives to balance numerical processes which focus on the minutiae of individual projects without understanding how they affect people in the real world.

Talking to people in their own environment produces insights not available from outside “experts” with no cultural competency and different from what can be gathered through the typical public hearing format, with time limits on comments.

A process which says that notice was given in the legally proscribed way without any specific outreach into a community which has 43 percent of the median income of the city in general does not take into account financial and transportation pressures which can preclude participation in meetings, and the community’s lack of resources to analyze massive amounts of data.

San Francisco’s activists were legendary as relatively uneducated persons to take the time to study land use documents during the 1940s through the 1990s as the likes of Geraldine Johnson, Dr. Hannibal Williams and Mary Helen Rogers became more expert that the city officials they tormented.

A generation of health practitioners and scholars such as Dr. Arthur Coleman, a joint J.D./M.D. and Dr. Carlton B. Goodlett, an M.D. and Ph.D and dentists like Drs. Dan Collins and Zuretti Goosby also gave the community the capability to speak authoritatively to the powerful.

Just recently, residents near Candlestick stopped the plan to implode the stadium to prevent dust pollution.[14]

Fortunately, the activists group POWER has created an excellent narrative summary of the impact of race, poverty and transportation in San Francisco. Alicia Garza, the catalyst behind the Black Lives Matter movement, was co-director of POWER.

The new generation of activists also includes the web site Color of Change, founded by Van Jones.

With such visible activists and the history of public involvement, it is quite inconceivable that an Environmental Impact Statement affecting Bayview-Hunters Point and secondarily, the Mission, Chinatown and the Western Addition would omit the issue of environmental justice.

However, the Candlestick implosion idea was handled in the same backdoor fashion until the community found out about it.

Additionally, this writer has conducted more than 400 oral history interviews of African-Americans in San Francisco since 2003 and catalogued the artifact collections of Dr. Carlton B. Goodlett, former publisher of the San Francisco Sun Reporter; Clarence Gatson, photo editor of the Sun Reporter and Wesley Johnson Sr., and Dr. Wesley Johnson III, owners of nightclubs and pharmacies from the 1940s through the 1970s.

For the past nine years, the community has been encouraged to tell their stories through the Preserving California Black Heritage conference each September. The 2015 conference led to coverage by CNN, KGO and KPIX along with a Datebook article in the San Francisco Chronicle by uncovering an abandoned Sargent Johnson carving in the Western Addition neighborhood.

While raising funds for the Excelsior and Bayview branch library campaigns over the past ten years, this writer has had extensive experience catching public transit in the southeast part of the city after late night meetings. It has been apparent that there was a segregated transit system at work in the city, with different reliability standards based on the racial makeup of the neighborhood.

Reading about the proposed transit improvements offered to the basketball team caused him to explore the hypothesis in more detail.

Since 80 acres of Bayview were dedicated to slaughterhouses in the late 1880s, the community has borne the brunt of the city’s progress, without sharing in it.

The customized treatment of the Event Arena is comparable to the difference between the city's two waste water treatment plants. The one in southeast San Francisco has been open air for 50 years, with smells apparent for miles and homes just feet away, contributing in no small way to profound health disparities and abridged mental health. The one at the Great Highway is completely contained with no smells.

Antonini's slip of the email, like the video of Donald Sterling and the memo from the Atlanta Hawks owner, are just glimpses into the mindset behind the policy decisions at work for professional athletics.

Critical race theory is designed to ferret out those ramifications without such clear-cut instances. It doesn't take a police shooting to determine whether "Black Lives Matter." The choices that governments and businesses make are even clearer indicators.

CRITICAL RACE THEORY AND SPORTS

It is not an accident that the most visible breakthroughs to end segregation in American society in the early and middle 20th century first came in sports. The Olympic victories of Jesse Owens and Joe Louis in the 1936 Berlin Olympics and the successful entry of Jack Roosevelt Robinson as the first black player in major league baseball were pivotal, according to UC-Santa Cruz sociologist Anthony Pratkanis.[15]

San Francisco was pivotal to the integration of sports because of breakthroughs dating back to the 1890s. In the field of horse racing, Alonzo Clayton won the California Derby at Ingleside Race Track and later won the Kentucky Derby.[16] Rube Foster brought the Chicago American Giants beginning in 1908 to play in the Pacific Winter League, the first integrated professional baseball league, a decade before he started the Negro National League in 1929.[17]

The University of San Francisco's first black athlete, Earl Booker, won the intercollegiate boxing championship in 1934. By 1951, Ollie Matson and Burl Toler led the team to an undefeated record and a Cotton Bowl berth18. Their teammates turned down the bid when informed that the black players could not compete, leading to a reputation as the "greatest college football team in history" with four future NFL Hall of Famers.

William Felton Russell and K.C. Jones, both graduates of McClymonds High School in Oakland, led USF basketball to consecutive NCAA championships along with an Olympic gold medal performance in 1956. Russell and Jones would continue their championship run for ten seasons in the National Basketball Association as part of the most successful franchise ever, helping to enhance the popularity of the sport and attract television viewers.

Major league sports, particularly football and basketball, have an important responsibility to protect the historic character of the neighborhoods which sacrificed years of pollution, disruption and slow growth to help those leagues achieve their current financial success through the help of public assets, in the long view of the critical race theory perspective.

The relevant question to answer is whether there is a corresponding benefit to the people of southeast San Francisco, who have already hosted the Warriors for almost a decade at the Cow Palace in the 1970s and hosted the Giants and 49ers for 50 years at Candlestick.

No evidence is offered to suggest that the arena would have any benefit to this community, such temporary event jobs have been available for decades. Any such jobs would be simply transferred from the East Bay into San Francisco with no net gain in opportunity.

Would Bayview-Hunters Point residents get to enjoy the facility as fans? POWER indicates that the most likely result is that San Francisco Police Department would step up enforcement of fare violations to actually discourage its residents from mingling with event center riders[19]. They note the shooting of a young man on the T-Line platform by two officers seeking to cite him for fare evasion

It is also noteworthy that two NBA owners lost their teams in the last year, in Los Angeles and Atlanta, for suggesting that their games attracted too many African-Americans (even if they were rich former NBA players).

It is profound evidence that the specter of race is at the heart of the decision-making to leave what BART director and transit expert Tom Radulovich calls the optimum transit location in its current site.[20]

Sports sociologist Harry Edwards suggests that a sports facility is the absolute worst investment to make near an impacted community:

> "…there is no option but to recognize that for increasing legions of black youths, the issue is neither textbooks nor playbooks—the issue is survival, finding a source of hope, encouragement, and support in developing lives and building legitimate careers and futures.
>
> Without question, the ultimate resolution to this situation must be the overall institutional development of black communities and the creation of greater opportunity for black youths in the broader society.

The current Warriors owners join a long array of sports entrepreneurs—Bob Lurie, Al Davis, Eddie DeBartolo, Larry Ellison, Lew Wolff and Jed York—who have played sports monopoly with Bay Area governments. In every case, the owners win.

THE PROJECT

The Office of Community Infrastructure and Investment has prepared an EIR[21] on the plan by GSW Arena LLC, an affiliate of the National Basketball Association team Golden State Warriors, to build an 18,000 seat arena, two office buildings, retail and parking spaces on an 11-acre parcel across from the UCSF Mission Bay campus.[22]

Moved from an initial proposal to site the arena on Pier 32, the project takes the current strategy for sports facility development of relying on additional real estate properties to help underwrite the cost. It was also calculated to attempt to avoid the potential for a voter referendum on projects which exceeded height limits on the waterfront.

In addition to the 41 home games, the facility would be in use for as many as 200 events throughout the year, becoming an adjunct to existing convention venues. A memorandum of understanding between the chancellor of UCSF and the Warriors has been touted to address concerns that the arena would hamper traffic to the three new adjacent hospitals.[23]

If completed, the facility would move the franchise from the Oracle Arena in Oakland, which has nearby access to Oakland International Airport, a BART and Amtrak station, a bus yard and Interstates 580 and 880, in addition to parking for the adjacent baseball and football stadium.

The new site would be accessible directly by a station on the Muni T-Line as well as surface streets.

The proposed arena is an addition to expanded use of the T-Line resulting from current construction of the Central Subway to North Beach.[25] This subway, using $1 billion in federal transit funds, will stop at Union Square, and the Moscone Center with an anticipated 20,000 new riders.

Before voters on Nov. 3 is a proposal to create Mission Rock[26], a mixed use housing and retail development on the site of the Giants parking lot. More than 6,500 units of housing has been built at Mission Bay adjacent to the UCSF campus.[27] Long-awaited plans for the development of Pier 70 with three million square feet of commercial space are in motion.[28] Sixteen hundred housing units are set for the former Schlage Lock site in Visitacion Valley29 and the first homes are occupied of an eventual 10,500 (twice the current number of units in Mission Bay) in the Shipyard development on the former Hunters Point Naval Shipyard.[30]

TECHNICAL FOULS IN THE ENVIRONMENTAL IMPACT PROCESS

The proposed Warriors event center would strangle the only transit lifeline for the largest concentration of affordable housing in San Francisco, increase pollution from waste water and auto emissions and drive up housing costs.

POWER's *Next Stop: Justice: Race and Environment at the Center of Transit Planning* report found:

"Bus riders in the core communities of color in San Francisco are impacted by long waits and overcrowded buses. Comparing the MTA's data on the core lines that POWER members ride with the MTA's recorded system average we found that overwhelmingly, the on-time performance on each of these lines in southeast San Francisco is significantly worse than the system average."

Quoting rider Lorren Dangerfield:

“The T-train at night usually means at least 20-30 minutes waiting. Then often when the train does come, it’s only running from downtown to 23rd St. It turns around before it even gets to Bayview. The buses that affect the poorest communities are the ones that run the slowest and least often.”[31]

The T-Line in 2012 was the city’s second most used light rail line, according to Next Stop: Justice, with 30,033 daily riders. It was only on-time 58 percent of the time with headway adherence (scheduled time between trips) on 45.3 percent of trips. At peak evening hours, 17 percent of the trips were overcrowded.[32]

This compares with the performance of the 15-Third bus line that it replaced in 2007:

“15 - Third Street. This is MUNI's primary bus route in the Corridor. The route is operated using articulated motor coaches and serves City College of San Francisco, Downtown, Chinatown, North Beach and Fisherman's Wharf via Third Street, Kearny and Montgomery Streets, and Columbus Avenue. Within the Corridor, the route primarily follows Third Street and Geneva Avenue. It provides regional connections with the Caltrain Terminal at Fourth and Townsend Streets and comes within two blocks of Caltrain's station at Paul Avenue. The route also connects with the BART and MUNI Metro subway systems at both the Montgomery and Embarcadero BART Stations, as well as with BART's Balboa Park Station. The route operates every five minutes during the a.m. peak period, every six to seven minutes during the p.m. peakperiod, and every ten minutes between these periods. Approximately 33 percent of the route's 24,200 daily boardings occur north of Market Street.[33]

The inherent bias towards approval of projects once they reach the stage of Environmental Impact Statement is demonstrated by the No Action option in the 1998 EIR. The same objective of the Third Street Light Rail could have been met by purchasing 40 more articulated buses. Yet, as the civil grand jury notes, the Third Street Light Rail went forward despite costing ten times the originally budgeted amount. The cost overruns would compromise MUNI’s ability to conduct scheduled maintenance on its fleet for a decade.

Like a trick shot in pool, it would also impact low-income communities in the Western Addition, Mission and Chinatown as the 22-Fillmore is anticipated to serve the arena and the current 30-Stockton would see its riders use the Central Subway. Additionally, once the Central Subway is completed in 2019, T-Line riders will no longer connect with Muni Metro.

In 2019, the T-Third/Central Subway will become an independent train system with no direct connection to the rest of Muni Metro, BART and the ferry system.[34]

The Memorandum of Understanding between UC-SF and the Warriors is only the latest instance of this project ignoring the principles of environmental justice. Repeatedly, the potential impacts on the people of southeast San Francisco are ignored at every stage of the process. Within more than 2,500 pages, the topic never comes up.[35]

In addition, the Arena’s siting and proposed operation is likely to contribute to the dramatic outmigration of African-Americans from San Francisco. Studies of similar sports arenas using the real estate investment strategy show such an effect.[36]

The Failure of the T-Line

In 1998, a similar environmental impact statement described the T-Line as “a key infrastructure improvement to help support the economic and physical revitalization of the Bayview Hunters Point commercial core and the planned development in Mission Bay.”[37]

The Bayview-Hunters Point general plan labels the T-Line as [38]

> “.. the nucleus for public transit improvements and socio-economic revitalization efforts in the corridor, and prioritize the efficient movement of the light rail by reducing conflicts with automobile and truck traffic.”

In 2005, this writer presented an exhibition at the Bayview Branch Library called SFSoul: Taste the Excitement. It documented the role of the two dozen African-American nightclubs between the 4000 and 6700 block of Third Street, the longest continuous black business district in California.[39]

Those clubs were bases for athletic leagues and charitable drives as the social centers of a majority African-American neighborhood.

The construction of the T-Line for three years created a significant hurdle for those businesses.

However, the benefit to the community was a link which would make the isolated community integrated with the city's main employment centers.

> "Buses caught in Corridor traffic often provide unreliable service south of Downtown. Currently, passengers may experience overcrowding and extended waiting times between buses, as well as slower operating times and increased travel times. This situation is projected to worsen as traffic in Downtown and along the Corridor increases to 2015 levels."[40]

In 2015, the Controller's Office found in its 2015 biennial survey of citizen satisfaction with city services that residents of Supervisorial District 10, which is bisected by the T-Line had the lowest satisfaction of any residents in the City with Muni services.[41]

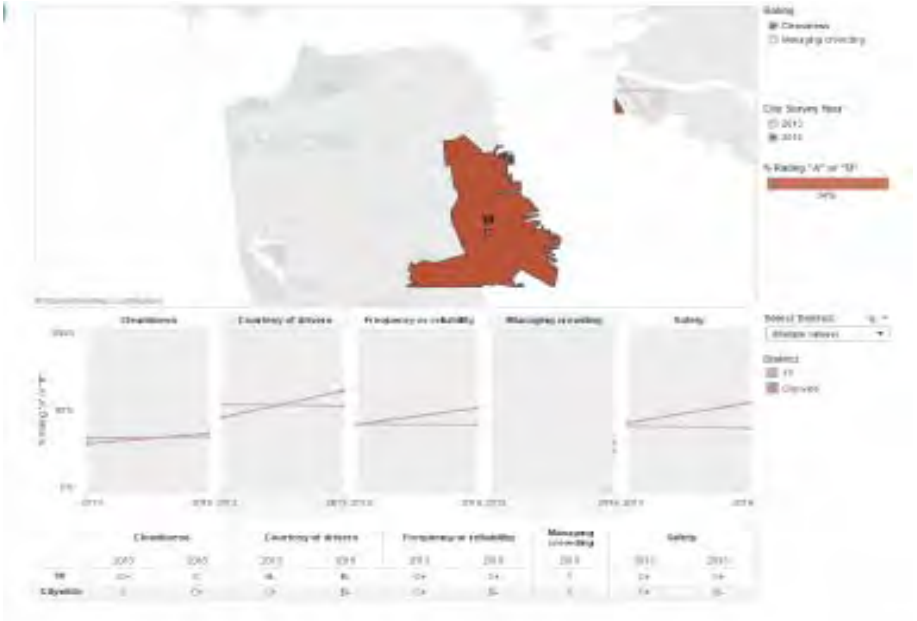

Figure 1. 2015 Citizen responses to question on Muni on-time performance in District 10. Source, Controller

The Controller's performance review of all city departments found that MUNI overall achieved less than 80 percent of the goal spelled out in the City Charter.[42]

The August 20 report from the Controller showed that citywide, MUNI reliability declined from the previous year.[43]

Figure 2. Muni performance on Charter goals April-June 2015 from Quarterly Government Barometer. Source, Controller City Services Auditor

The 1998 EIR for the Third Street light rail projected a 39 percent increase in corridor population and a 35 percent increase in corridor employment by 2015.[44]

> "As a result of the projected population and employment growth in the Corridor, traffic congestion on major highways and arterials, particularly Highway 101 and Third Street, is expected to increase substantially. Highway 101 at Cesar Chavez is expected to be Level of Service (LOS) F (excessive delays) and LOS E at intersections of Third and Cesar Chavez and at Bayshore and Arleta."

The first goal of the project was "Improve transit service to from and within the Corridor, thereby enhancing the mobility of Corridor residents, business people and visitors."[45]

In 1997-98, the 15 Line provided six minute schedules. The No Build alternative would have reduced its schedule to five minute increments. The promise that light rail would improve that performance has proven false. Only 34 percent of District 10 residents give MUNI an A or B grade for on-time performance, one in three.[46]

For the first EIR of the T-Line, the City and County of San Francisco underestimated the 2015 population of San Francisco by 40,000, with much of the unforeseen growth happening along the T-Line corridor.[47]

The Civil Grand Jury also noted that the T-Line Light Rail came in at $678 million for construction, overwhelming the $200 million bond passed to address the entire city's transportation needs.[48]

The Civil Grand Jury also noted that the T-Line Light Rail came in at $678 million for construction, overwhelming the $200 million bond passed to address the entire city's transportation needs.[48]

There is no reason to believe that a hastily done EIR for a second-choice site, without any of the four years of community input which the T-Line conducted from 1993-97, will address the serious issues raised by the original construction of the Third Street Light Rail Line.

> Anyone who was using Muni regularly around the time of the T-Third rollout should remember the process as being anything but smooth. One of the reasons cited for the bumpy rollout was the internal decision to use outdated ridership models. The original ridership models forecasted a 2005 opening for the line. However, the line did not open until 2007.[49]

A Spur for Gentrification

Compared to the relative racetrack pace for the Warriors arena, it took from 1993 to 2007 for the merchants and residents of Third Street to finally see the light rail line which had been promised to them.[50]

The five segments that make up the Corridor between Visitacion Valley and the Caltrain Terminal have a high proportion of minority residents. According to the 1990 Census, 50 percent of this portion of the Corridor is Black, 31 percent is Asian, 15 percent is White, and 10 percent is Hispanic. These proportions contrast with the racial distribution of San Francisco residents, who are less than 1 percent Black and 53.6 percent White. The highest proportion of Black residents is found in Segments 2 and 3 (58 and 67 percent, respectively), while most of the Hispanic population resides in Segments 1 and 2. Asians from the predominant population group in Segment 1; whereas, Segments 4 and 5 have mostly White populations.[51]

In 1992, the San Francisco Human Rights Commission published Unfinished Agenda, a report which described the unequal conditions of African-Americans in San Francisco, then still ten percent of the population of 750,000.[52]

In 1962, poet James Baldwin toured Bayview Hunters Point with a National Educational Television crew describing conditions not unlike Mississippi along the hillside.[53]

The next year, young people from the community launched the most successful civil rights campaign of the 1960s, the United San Francisco Freedom Movement.[54] Led by Bill Bradley Jr., a Marine veteran and law student; and Tracy Sims, a Berkeley High graduate, the campaign married the

resources of the Congress of Racial Equality, NAACP and the Crispus Attucks Clubs of Bayview-Hunters Point, led since 1948 by Mrs. Ardith Nichols.[55]

Highpoints included the Palace Hotel sit-in on March 5, 1964 and the Auto Row sit-ins in May of that year. Eventually, 375 companies signed employment agreements, including all of the Big Three automakers.

Lawyers for the movement, Terry Francois and Willie L. Brown Jr. were elected to the Board of Supervisors and California Assembly. Despite relocation from the building of U.S. 101 and redevelopment activities in South of Market, Western Addition and Hunters Point, the bulk of the black community settled into middle class enclaves of home ownership throughout Bayview and Ocean-Merced-Ingleside. Subsidized apartments in the Western Addition and Hunters Point provided affordable renter space.

As late as 2000, San Francisco had 35 percent of its black labor force in management and professional jobs, the highest percentage in the country.[56]

Disparate policies began to break apart a community that produced the likes of Maya Angelou, Johnny Mathis and Danny Glover in the 1960s. The extended denial of public transit coupled with pollution from U.S. 101 combined with the residue of the Hunters Point Shipyard to create some of the most toxic pollution in the country.

Despite the problems, isolation from the rest of the city allowed the workers from the Butchertown slaughterhouse district and longshoremen to live in stable middle class communities.

“Singing” Sam Jordan, “the mayor of Butchertown”, used those workers as a power base to actually run for mayor of San Francisco in 1963. The former boxer opened his namesake club Sam Jordan’s at 4004 Third Street in 1959.[57]

The Long Island Club became a magnet for entertainers and athletes as the highest paid professional players in baseball and basketball, Willie Mays and Wilt Chamberlain, both competed in San Francisco.

Presence of the Candlestick football and baseball stadium and Cow Palace basketball and boxing arena helped sustain the clubs and bars along Third Street.

However, a series of changes in the sports business would remove those amenities. Although a $100 million bond to refurbish Candlestick for the 49ers was passed in 1997, the team declined to take the offer.[58] As the Los Angeles Times noted, only ten percent of the 49ers fans actually lived in San Francisco.

The year before, the Giants followed in the wake of Baltimore’s Camden Yards to build a stadium at Third and King Streets. With the presence of the California Institute for Regenerative Medicine, the stadium would spark a nearby real estate boom.[59]

Construction of the Third Street light rail line would not deliver the promised gains for the longtime residents of this area, but a source of construction dust and decay for the Bayview-Hunters Point business district.

When interviewed in 2005 for the SFSoul exhibition, long time owners said they were just barely hanging on with a fraction of their normal customers.[60]

Unlike the EIR for the GS Warriors Arena, the Third Street light rail EIR of 1998 contained a section of “Environmental Justice Considerations” citing Executive Order 12898, signed by President Bill Clinton in Feb. 1994. A memorandum issued with the order said that a National Environmental Protection Act (NEPA) analysis must include “effects on minority communities and low-income communities.”[61]

For the purposes of the analysis, South Bayshore was 91 percent minority in 1998.

The example of the Barclays Center in Brooklyn, opened two years ago, indicates how the new model of sports facility, as a development spur instead of an event venue, worked against the interests of impacted communities.

Messmer analyzed its impact on the population of Brooklyn[62]:

> "While NYC as a whole saw a net loss of nonhispanic whites of -2.8, Brooklyn saw a 4.5 percent increase in the number of nonhispanic whites."

The study also reported a 5.8 percent drop in Brooklyn's black population.

"As the Barclay Center drove up real estate values, it began pricing economically disadvantaged minorities out of the market," wrote Messmer.

Since 1992, the date of the Unfinished Agenda report, the black population of San Francisco has fallen from 10 percent to 5.8 percent in 2013.[63]

An outmigration task force in 2010 produced a list of recommendations to address the decline, which were ignored.[64]

In 2014, the San Francisco African-American Chamber of Commerce issued a call for a tourism boycott of San Francisco's $9 billion industry. An agreement with city officials to remove that call has also been forgotten.[65]

The Golden State Warriors Arena would be the third attempt by Mayor Ed Lee to place a sweetheart deal in the hands of billionaires for the waterfront. The city lost $11 million on the America's Cup at the hands of Larry Ellison;[66] and the voters blocked the 8 Washington luxury development.

In contrast to the $11 million to Ellison and the $34 million in tax breaks to Uber, Twitter, et.al.[67] in Mid-Market, the city has spent less than $1 million with businesses on Third Street as three-fourths of the historic black restaurants present in 2005 are still in business despite decades of previous success.

The oldest black bookstore in the country, a landmark of black literary genius, was sold at auction because the City refused to extend $1 million in loans to the business.[68]

These incidents and many others speak to the continuing failure of the City and County of San Francisco to comply with community benefit agreements and to incorporate environmental justice into its land use decision making.

Community? What Community?

The precedent for environmental justice litigation rests with a train line which runs adjacent to the current site of the Golden State Warriors.

As Public Advocates describes[69]:

"In September 2009, Public Advocates filed a successful civil rights administrative complaint with the Federal Transit Administration (FTA) on behalf of our partners Urban Habitat, Genesis, and TransForm. The complaint challenged Bay Area Rapid Transit's (BART's) controversial Oakland Airport Connector (OAC) project, alleging that in BART's rush to build the OAC, the agency violated federal rules implementing Title VI of the Civil Rights Act of 1964 — rules that require transit agencies to analyze whether their projects have a disproportionately negative impact on low-income and minority populations.

> **Why We Advocated Against the OAC**
>
> "The $492 million OAC was conceived as a three-mile elevated tramway connection from the BART Coliseum station to the Oakland International Airport, and would eliminate the existing cost-effective AirBART shuttle service.
>
> "It would provide little, if any, transit mobility benefits to the area's overwhelmingly low-income and minority residents due to its prohibitive $12 roundtrip fare and its lack of intermediate stops along the job-rich Hegenberger corridor. BART's own analysis predicts that less than 3 percent of the OAC riders will come from the immediate East Oakland neighborhoods surrounding the project.

Victory! The FTA Acts to Enforce Civil Rights

> "In response to our complaint, in October 2009 the FTA began conducting a sweeping on-site compliance review of BART, finding many civil rights deficiencies.
>
> "Based on BART's failure to conduct an equity analysis of the OAC, in February 2010 the FTA pulled $70 million in American Recovery and Reinvestment Act funds from the project — the first action of its kind in the nation. The strong action underscored a promise made in President Obama's State of the Union address to continue "prosecuting civil rights violations."
>
> "The federal stimulus funds were recaptured by Bay Area transit agencies, including AC Transit, and used to maintain existing transit service and jobs. To remedy the many civil rights deficiencies identified by the FTA, BART was also required to implement a corrective action plan, which we and our allies have been monitoring, and which we responded to in May 2010.
>
> Not only the City and County of San Francisco, but also the Warriors should have been aware of this precedent. Yet neither the EIR or MOU addresses the transit needs of the South Bayshore community, 91 percent minority in 1998.

According to the San Francisco Housing Element:

> Since 2010, the percentage of San Franciscans claiming white racial affiliation increased, totaling nearly 51% of the city's population according to the 2012 American Community Survey (ACS). San Francisco's African-American population continues to decline, dropping from 6.1% in 2010 to 6% in 2012. San Franciscans of Chinese origin declined from 21.4% of the total population in 2010 to 21.2% by 2012. The proportion of San Franciscans identifying with Hispanic origins (of any race) has increased from 14.1% in 2010 to 15.1% in 2012.

HACK THE IMPACTS

The Hack a Shack strategy in professional basketball slows down the pace by intentionally fouling a poor free throw shooter. The proposed Golden State Warriors Arena intentionally fouls a low-income, minority community by mischaracterizing impacts which were previously spelled out in the 1998 EIR.

The previous discussion shows that all three tenets of federal environmental justice policy are compromised. Below, impact determinations in the EIR for the project are shown to ignore impacts on low-income and minority communities.

Impact TR-4: The proposed project would not result in a substantial increase in transit demand that could not be accommodated by adjacent Muni transit capacity such that significant adverse impacts to Muni transit service would occur under Existing plus Project conditions without a SF Giants game at AT&T Park LS No mitigation required is described as less than significant effect with mediation when it should be correctly characterized as significant.

The service standards proposed in 1998 have not been met; residents of District 10, the poorest area of the city are dissatisfied with service. There is a significant case to be made that the current sports facility, AT&T Park, is the primary reason for poor service to the current population. This determination is not credible based on the current difficulties of the T-Line.

Two of the busiest transit lines in the city, both serving heavily minority populations, would be impacted. The T-Line only serves twenty percent more passengers than the previous 15 bus line, but provides 40 percent slower service. The 30-Stockton runs the same route as the Central Subway under construction. It's 33,000 passengers would be added to the load of the T-Line, which means that the subway would be at capacity with just current riders.[70]

Impact TR-13: The proposed project could result in a substantial increase in transit demand that could not be accommodated by adjacent Muni transit capacity such that significant adverse impacts to Muni transit service would occur under Existing plus Project conditions with an overlapping SF Giants evening game at AT&T Park.

The only mitigation proposed is use of shared car services, which are much less likely to be available in low-income areas or to be accessible to low-income residents.

MUNI demand peaks at 5 p.m. with increases of as much as 100 percent. A recent early evening game at the Levi's Stadium indicates the problems with placing a sports stadium in the midst of a busy commercial/industrial area.[71]

Impact TR 14: The proposed project would result in a substantial increase in transit demand that could not be accommodated by regional transit such that significant adverse impacts to regional transit service would occur under Existing plus Project conditions with an overlapping SF Giants evening game at AT&T Park. SUM

Paradoxically, the EIR admits that the regional transit system can be overwhelmed but asserts that MUNI, with a fraction of the capacity currently servicing the basketball arena, would not be.

The Dept. of Public Health's Climate Action and Health Co-Benefits report states:

> *In order to balance the burdens of our transportation system with the benefits placed on certain communities, special efforts should be made to target service improvements to particularly benefit low income residents, communities of colors, the elderly, and neighborhoods that have a historical legacy of dealing with higher levels of environmental exposures.*

Impact TR20: Without implementation of the Muni Special Event Transit Service Plan, the proposed project would result in a substantial increase in transit demand that could not be accommodated by adjacent Muni transit capacity such that significant adverse impacts to Muni transit service would occur under Existing plus Project conditions. SUM

The design of the T-Line took multiple lanes away from Third Street, reducing the capacity for additional transit service without blocking throughput to other areas. The level of MUNI service traditionally available to 49ers games at Candlestick would be compressed into a much smaller area.

Impact TR-21: Without implementation of the Muni Special Event Transit Service Plan, the proposed project would result in a substantial increase in transit demand that could not be accommodated by regional transit capacity such that significant adverse impacts to regional transit service would occur under Existing plus Project conditions.

The additional auto traffic on U.S. 101 from the gridlock from events would bring additional sources of pollution into an area which already has to suffer from the city's wastewater treatment plant and dust from Shipyard construction.[72]

Impact TR 22: Without implementation of the Muni Special Event Transit Service Plan, the proposed project could result in a substantial overcrowding on public sidewalks, nor create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility on the site and adjoining areas under Existing plus Project conditions.

Congestion would make it difficult for residents of Bayview-Hunters Point to walk or ride to downtown amenities, the complete opposite of the goals of the T-Line.[73]

Impact PH-1: Construction of the proposed project would not induce substantial growth in the area, either directly (for example, by constructing new homes or businesses)) or indirectly (for example, through extension of roads or other infrastructure).LS No mitigation required

San Francisco has the highest rental costs in the nation.[74] This arena would not create any additional jobs, but would attract absentee residents to bid up nearby properties so that they could be near the arena, a trend already seen in the city.[75] It would also reduce the supply of housing due to services like AirBnb renting spaces near the arena for 200 days of events.76 Google's shuttle bus service grew from 155 passengers at two stops in 2004 to 100 buses daily with 10,000 passengers.

Impact PH-2: Construction of the proposed project not displace existing housing units or create substantial demand for additional housing LS No mitigation required

The City and County of San Francisco is 7,000 units short of replacing housing removed by redevelopment activity according to the Housing Element. Section 8 applicants are currently referred to sites outside the city and homeless African-American women are given tickets to leave the area in return for assistance.[77]

Impact PH-4: Operation of the proposed project would not induce substantial population growth in the area, either directly (for example, by constructing new homes or businesses) or indirectly (for example, through extension of roads or other infrastructure) LS No mitigation required.

Not a credible statement given the rapid growth of Mission Bay. The 1998 Third Street Light Rail EIR underestimated the city's population by 40,000, more than its daily passenger load.[78]

Environmental Justice Legal Issues

The proposed MUNI service changes would fly in the face of decades of case law and regulations for environmental justice. For instance, BART is currently conducting an analysis of its new extension in Fremont.

> "Federal Transit Administration (FTA) Title VI Circular (Circular) 4702.1B, Title VI Requirements and Guidelines for Federal Transit Administration Recipients(October 1, 2012), the District is required to conduct a Title VI Service and Fare Equity Analysis"[79]

This has not occurred for the proposed transit changes. The BART report had to make the following determination:

> "The travel assessment compares the estimated travel time for riders affected by the service change before and after the new service. The results of the travel time assessment found that the Project would benefit all populations, including minority and low-income, within the Project Catchment area. With project service, all populations are expected to experience the same time savings of 11.85 Minutes between Warm Springs and the Fremont Station, a 55.8% reduction in travel time.[80]

"With the exception of Option 3, staff also found that travel times are not expected to change for riders of existing stations, as a result of the proposed options. As proposed in the FY2016 Preliminary Budget, additional cars would be added to the Green and Blue lines, which will lessen peak period crowding. As a result, the study found that minority populations will not experience a disparate impact and low -income populations will not experience a disproportionate burden on their travel times with the new service."[81]

In the courts, the aforementioned BART connector case set a precedent by showing that the Metropolitan Transportation Commission spent $9 for every $0.50 spent on buses for low-income persons.[82] The service designed specifically for an arena to a high-income arena flies in the face of that precedent.

In San Diego, Atty. Gen. Harris vision of environmental justice was upheld when a court found that cumulative effects must be considered. A petition to intervene in the case Cleveland National Forest Foundation vs. San Diego Association of Governments in 2012 insisted that government agencies consider environmental justice.[83]

The attorney general warned the regional body in a comment letter that it failed to study the impact of increased pollution on minority communities.

"…the Attorney General is effectively putting lead agencies across the state on notice that a failure to address EJ considerations in the implementation of climate change policies will risk challenges to the legal sufficiency of their environmental impact documents."

The legislative foundation for environmental justice comes from AB32 in 2006, which established an advisory committee on the issue.[84]

There is also an emerging standard on community participation.

> "According to the EPA, "meaningful involvement" in environmental decision making means that: "(1) potentially affected community residents have an appropriate opportunity to participate in

> decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected." However, members of affected communities may lack the technical resources, English language proficiency, access to quality legal representation, or simply the time to participate effectively."

Similar standards have been enacted by the California Air Resources Board.85 Its 2001 document asserts:

> Local land-use agencies are directly responsible for the siting of new air pollution sources, and local air districts also play an important role by issuing permits for new sources of air pollution. We are committed to working as partners with these agencies to improve the available information that local agencies use to make planning and permitting decisions.[86]

The Air Resources Board also addresses cumulative impacts:

> It shall be the ARB's policy to work with local land-use agencies, transportation agencies, and air districts to develop ways to assess, consider, and reduce cumulative emissions, exposures, and health risks from air pollution through general plans, permitting, and other local actions.[87]

The landmark global warming act and subsequent legislation, plus legal opinions from the attorney general and court cases all underscore the importance of addressing potential impacts from the prism of environmental justice.

A DOT Title VI analysis of BART in 2009 found deficiencies in its environmental justice performance.

> "FTA recipients should seek out and consider the viewpoints of minority, low-income, and LEP populations in the course of conducting public outreach and involvement activities. An agency's public participation strategy shall offer early and continuous opportunities for the public to be involved in the identification of social, economic, and environmental impacts of proposed transportation decisions."[88]

Based on those state and federal standards, the failure to address environmental justice in the Subsequent Environmental Impact Statement is problematic.

The Demographics of the Impacted Area

Activist Marie Harrison described Bayview Hunters Point as the epicenter for environmental injustice in a 2003 report:

> "The neighborhood is home to approximately 34,800 people, and more than 500 heavy and light industrial companies, retail stores, and commercial establishments. According to U.S. 2000 census data, approximately 48% of residents in Bayview Hunters Point are African American, 1.3% American Indian, 23% are Asian and Pacific Islanders, 17% are Hispanic and 10% are White. Income levels are significantly lower, and unemployment rates significantly higher for this small community, than for San Francisco as a whole: Nearly 40% of Bayview Hunters Point residents have annual incomes below $15,000, while only 20% of the City's population as a whole have income that low, and the unemployment rate is 13% in Bayview Hunters Point, more than twice as high as the City as a whole."

Community victories to close the Hunters Point power plant have had the effect of opening up the area for new migrants. The African-American population of the neighborhood has dropped by 50 percent since 2000.

Stress Factors Based on Race, Income and Unequal Opportunity. For the purposes of the critical race theory analysis of environmental justice, the affected population must be viewed through the lens of the traumatic events which have occurred over the past 50 years. Each of these stress factors is known to, or reasonably should be expected to be known to the preparers of the Draft Subsequent Environmental Impact Statement. The civil grand jury wrote in 2004:

> "There are deeply rooted social problems that result in part from systematic negligence dating back to World War II. The City of San Francisco has failed to invest significantly in this community for over 60 years."

Loss of industry in Bayview-Hunters Point. The General Plan discusses the impact of the closure of the Hunters Point Shipyard, but does not mention the decision to move to containerized shipping, which reduced jobs in the commercial maritime industry. There is a significant history of biomedical innovation in the black community. Dr. Nathaniel Burbridge was a pharmacologist and professor at UCSF, but became known for leading the NAACP during the United San Francisco Freedom Movement.

Eric Williams, the son of Ruth Williams, the namesake for the Ruth Williams Memorial Theater in the Bayview Opera House, holds 20 patents for cardiac stents. A proposal to mark the 50th anniversary of the United Freedom Movement with a Nathaniel Burbridge Center for Innovation and Diversity located in the India Basin area has been ignored by city officials despite the evidence from the similar Impact Hub in Oakland, which has spawned close to 1,000 businesses in two years.

Kevin Epps, producer of the documentary Straight Outta Hunters Point, was also unable to gain city support for an incubator to develop media and online businesses. Other entrepreneurs seeking to provide clean renewable power have had a lack of interest from city officials.

The biggest need is to provide 5,000 industrial/assembly/distribution/construction jobs for residents of the area, not temporary event positions.

Health Disparities

Blackwell wrote:

> "Health surveys have shown that Bayview Hunters Point residents suffer from rates of cervical and breast cancer that are double those found in the other parts of the Bay Area, an asthma rate that is three times higher than in the rest of the state, and rates of hospitalization for congestive heart failure, hypertension, diabetes and emphysema that have been determined to be more than three times the statewide average. In addition, children living in the Bayview are far more likely to contract illnesses than children in the rest of the city, and infants are more likely to die.[89]

Income inequality is a significant factor for those health disparities, according to the San Francisco Dept. of Public Health's Community Health Assessment.

> "Although the median household income in San Francisco seems relatively high at $70,040, San Francisco has the largest income inequality of the nine Bay Area counties... Income inequality is directly related to health inequality, with higher income linked to better health: the greater the gap between the richest and poorest people, the greater the differences in health."

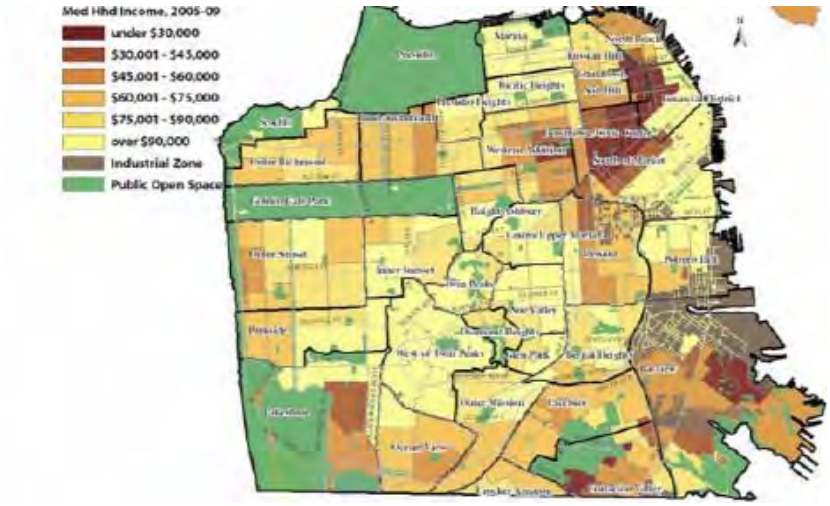

Figure 3 Income Inequality concentrated in District 10. Source San Francisco Dept. of Public Health

Reduction of Home Ownership.

According to Sen. Diane Feinstein, California had the highest rate of mortgage fraud in the nation,[90] and the problem was concentrated in the Bay Area, with southeast San Francisco, particularly targeted.

This is particularly problematic because the South Bayshore planning district has the third highest percentage of single family homes in the city, with 66 percent. By contrast, downtown has only two percent single family homes.

"Larger households of four or more persons are generally found in the south- eastern neighborhoods of the Mission, Bayview, Visitacion Valley, and the Excelsior where typical housing units have two or more bedrooms."

According to the 2014 Housing Element, the City has a responsibility to create more affordable housing:

"San Francisco's share of the regional housing need for 2015 through 2022 has been pegged at 28,870 new units, with almost 60% to be affordable."

However, the city's affordable housing policies are not as useful as one might think for African-Americans. The maximum income to qualify for low-income housing allotments in San Francisco at 70 percent of the median income is 50 percent higher than the median income for African-Americans.[91] That means African-Americans are outbid for subsidized housing because their income is significantly less on average than any other group. Developments actually constructed by African-American churches and lodges find themselves hard pressed to accommodate long-time black residents due to the intense competition.

Foul Air

In 1997, the asthma hospitalization rate for Bayview-Hunters Point African-American children was 820 per 10,000, the highest rate in California.

Air pollution has been linked to asthma, allergies, cardiovascular and respiratory diseases, cancer, neurological and reproductive disorders, and premature death (CARB 2009). In San Francisco, approximately 102,000 children and adults are currently diagnosed with asthma, with children and the elderly having significantly higher rates of asthma (CDPH 2011).[92]

The unavoidable impact of 18,000 persons using the toilet, along with potentially another 45,000 baseball fans smells to high heaven for the residents of southeast San Francisco.

> "Sophie Maxwell, the member of the San Francisco Board of Supervisor's whose district includes Bayview Hunters Point, lives within a few blocks of the Southeast sewage plant. In 2006, she told San Francisco Bay Guardian reporter Sarah Phelan that "every time [she] come[s] home and get[s] off the freeway, [she is] constantly reminded the plant is there."
>
> "You can smell it day and night," Maxwell told Phelan. "It's unacceptable."
>
> Originally constructed in 1952 with most of its operations placed outdoors, the plant was expanded in 1987 after a series of public hearings. To overcome residents' resistance to the plans, the city agreed to construct a community college campus in the neighborhood. In addition, officials promised that the facility's increased operations would not be noticeable and would result in "no odors." The fact that those promises have not been kept is impossible to ignore on hot days when the aroma of fecal matter becomes especially repugnant."

The Southeast Waste Treatment Plant uses 11 open air tanks and nine digesters compared to the Oceanside plant on the Great Highway, which is 1.5 miles from the nearest residence and uses an underground tunnel to send waste out into the ocean. Its operations can not be smelled outside

Conclusion

During the first game of the 2015 NBA Finals, this writer visited restaurants featured in his 2005 exhibit to watch the series. Leaving Paul and San Carlos after the conclusion, he walked approximately 20 blocks to 4000 block of Third Street without having a single T-Line train pass.

After visiting at the historic Sam Jordan's, he then went to the Third and Evans station to wait for a train. It took 67 minutes to arrive, close to two hours without service.

It was consistent with his experience in the previous decade attending community meetings in the Excelsior district for the branch library campaign and in Bayview Hunters Point for the campaign for the brand new library opened last year. Like the young lady in the POWER report, waiting for the T-Line at Third and Revere always takes a lot of patience, particularly at night in the cold.

Since then, he has observed the patterns for other MUNI light rail lines, observing that they adhere to posted schedules. The T-Line is subject to switchback at Marin Street, dumping dozens of riders to a crowded sidewalk at the busy Cesar Chavez intersection.

A review of available evidence confirms the reasoned suspicion that the placement of an event arena and entertainment complex at Third and Sixteenth Street with a single MUNI stop serving it, not directly connected to the rest of the MUNI Metro system, would inexcusably impact a community which has traditionally caught the short end of City policy.

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(*John William Templeton, email, November 2, 2015 [I-Templeton-1]*)

The Subsequent EIR violates, procedurally and substantively, every tenet of California's pioneering Environmental Justice Law and a 1994 federal executive order.

I've submitted a 40-page document that spells out the many ways that the characterization of impacts fails to take into account the cumulative effects of 70 years of land use inequity.

When I heard Planning Commissioner Ed Maley's (phonetic) objectionable remarks last week, I conducted a critical race theory analysis of this EIR to see that it substantially -- in trying to assemble this into a document, that certain groups of people are more valuable than others -- this measure breaks a covenant with the people of southeast San Francisco that $2.2 billion spent on their T Lines would link them to the rest of the City, and negatively impacts them for a generation to come.

In 1951, U.C.S.F. had the opportunity to play in the Cotton Bowl with the condition that they had to leave their black players behind. They turned down the invitation.

We shouldn't leave our impacted communities behind in order to approve this ill-conceived project.

(*John William Templeton, Transcript, November 3, 2015 [PH2-Templeton-1]*)

Response to Late Comment GEN-2: Environmental Justice

The commenter states that the SEIR "falls short" of the standards on the "California Environmental Protection Act" (assumed to mean the California Environmental Quality Act or CEQA) and raises a range of environmental justice issues. The commenter also states that the project "falls short" of the standards of the Executive Order 12898 regarding environmental justice in minority and low-income populations, but this regulation is not applicable to the proposed project because it is neither subject to federal approval actions nor involves federal programs. The commenter also notes a number of issues related to the Bayview-Hunters Point area, which is located south of the project area, and these issues do not apply to the Mission Bay area. OCII acknowledges the commenters concerns, including those related to environmental justice, but for the reasons described below, this response focuses on the issues raised with respect to compliance with CEQA and the adequacy of the SEIR.

CEQA requires that if substantial evidence shows that a proposed project may result in significant adverse *physical* changes, then an environmental impact report must be prepared that fully describes the environmental effects of the project before the project can be approved. The SEIR on the Event Center and Mixed-Use Development at Mission Bay Blocks 29-32, including both the Draft SEIR and the Responses to Comments document, accomplishes this and complies with all applicable CEQA requirements by fully disclosing all adverse *physical* environmental effects of the proposed project. Under CEQA, economic or social effects are not treated as significant effects on the environment, though CEQA is concerned with any physical effects that are reasonably foreseeable consequences of economic or social effects. CEQA states "the focus of the analysis shall be on the physical changes" (CEQA Guidelines Section 15131). Here, there are no economic or social effects identified in the SEIR that would result in any significant environmental impacts. Consequently, no analysis of economic or social effects is presented in the SEIR. Environmental justice—defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies—is essentially an economic and social issue, rather than a physical environmental effect.

Notably, contrary to the commenter's apparent assumption, nothing in CEQA specifically requires lead agencies to consider environmental justices issues. Past legislative efforts to insert such a requirement into CEQA have not been successful. In this respect, CEQA differs from the federal National Environmental Policy Act (NEPA), which does not apply to the project due to the lack of any needed federal agency approvals. As noted earlier, federal Executive Order 12898, issued by President Bill Clinton, requires a consideration of such issues. In particular, that document requires that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate,

disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands."

Therefore, with respect to the adequacy of the SEIR in fulfilling the requirements of CEQA, this response addresses only the specific issues raised by the commenter that relate to potential physical effects of the project and does not address comments regarding economic or social issues.

Transit Impacts

The commenter raises several concerns regarding the impacts of the project on transit service, and specifically the T Third line.

The existing Muni service on the T Third and 22 Fillmore is described on SEIR pp. 5.2-16 – 5.2-19, and planned service to the project vicinity as part of the Central Subway project and Muni Forward are described on SEIR pp. 5.2-16 – 5.2-20. The Central Subway project includes a below-grade pedestrian connection between the Union Square/Market Street Central Subway station and the Powell Street Muni/BART station to allow for transfers between the Central Subway, other Muni light rail lines, and BART. It should be noted that the T-Third service to which the commenter refers to is only Phase 1 of the Central Subway. The ultimate service along the T Third will see greatly improved, more reliable, and higher capacity service along the entire length of Third Street and into Chinatown once the Central Subway is completed.

The transit impact analysis for local Muni service presented in Impact TR-1 and Impact TR-13, for conditions without and with an overlapping SF Giants game at AT&T Park, assumed service levels that would be in place following completion of the Central Subway project, and assumed that additional transit service in the form of a system of transit shuttles and increased light rail service would be provided to supplement the T Third light rail line and the 22 Fillmore bus route that are the primary transit service in the area. The provision of the additional Muni service during events would address increased service needs from the event center and as a result, there would be no decrease in the existing T Third service south of the project site (i.e., to the Bayview).

The Muni Special Event Transit Service Plan, which would be provided as part of the proposed project, is intended to avoid the possibility that special events would overwhelm the existing transit system. It would do so by providing additional options to accommodate attendees traveling to and from the event center. The Muni Special Event Transit Service Plan is described in detail on SEIR pp. 5.2-53 - 5.2-55, where the additional light rail service and special event shuttles are described; Table 5.2-15 presents the proposed service levels for the various event sizes; and Figure 5.2-10 presents the routes proposed for the Muni Special Event Shuttles. The three primary components of the Muni Special Event Transit Services Plan are (i) the "Muni Special Event 16th Street BART Shuttle," which would run on 16th

Street between the event center and the 16th Street BART station; (ii) the "Muni Special Event Van Ness Avenue Shuttle," which would run between the event center and Fort Mason; and (iii) the "Muni Special Event Transbay Terminal/Caltrain/Ferry Building Shuttle," which would loop between the event center, the new Transbay Terminal, and the Ferry Building via Fourth, King, Third, Folsom, Fremont, and Mission Streets.

Impacts of the proposed project on Muni transit is presented in Impact TR-4 for conditions without a SF Giants evening game at AT&T Park, and Impact TR-13 for conditions with a SF Giants game at AT&T Park. During overlapping events, implementation of Mitigation Measure M-TR-13 would provide enhanced Muni Special Event Shuttles rather than additional light rail along The Embarcadero to serve the project site, as the additional light rail along The Embarcadero would be used to accommodate the AT&T Park transit ridership. The SEIR does not propose increased use of shared car service, or assume that existing riders on the T Third light rail line or the 22 Fillmore bus route would need to use such services. As noted above, the provision of the Muni Special Event Transit Service Plan during events is designed to accommodate event center uses so that the existing T Third service south of the project site is not affected by event center transit demand.

The comment is correct in that the SEIR identified significant regional transit impacts in Impact TR-5 and Impact TR-14. The regional transit impact analysis did not assume any additional regional transit service would be provided for events at the event center.

Impacts TR-18 to TR-24 on SEIR pp. 5.2-190 – 5.2-208 present the potential impacts that could occur for the transportation topics if all or a portion of the Muni Special Event Transit Service Plan is not provided. Mitigation Measure M-TR-18: Auto Mode Share Performance Standard and Monitoring identifies measures that could be implemented by the project sponsor to meet specific performance standards. The purpose of this analysis was to identify the potential impacts if the project did not include the Muni Special Event Transit Service Plan and to establish performance standards that the project sponsor would be required to meet to reduce traffic, transit, and pedestrian impacts (i.e., Mitigation Measure M-TR-18 and Mitigation Measure M-TR-22). The analysis of traffic impacts assumes the existing traffic volumes and roadway network, which reflect changes to Third Street following implementation of the T Third light rail. Impacts of the proposed event center would occur primarily in the vicinity of the project site, and on the access routes to and from I-280 and I-80 freeway ramps north of Mariposa Street. The proposed project is not anticipated to result in a substantial increase in traffic volumes along Third Street south of Mariposa Street, and therefore would not be expected to substantially affect vehicular and pedestrian travel within or to and from the Bayview-Hunters Point area.

Odors and Wastewater

The comment describes odors from the existing wastewater treatment plant located in southeast San Francisco, the Southeast Water Pollution Control Plant. That issue does not relate to the impacts of the event center and is currently being addressed by the San Francisco Public Utilities Commission (SFPUC) as part of its Sewer System Improvement Program,

which includes the Biosolids Digesters Facility Project. Completely unrelated to the proposed project, the Biosolids Digesters Facility Project is being proposed to replace the solids treatment system at the Southeast Plant, a major source of odors, and is currently undergoing CEQA environmental review, with construction of the project scheduled to start in 2017.

The commenter states that the impact of toilet use by the 18,000 persons at the event center combined with 45,000 baseball fans would result in odor issues for residents of southeast San Francisco. The commenter is mistaken. As described in the SEIR, the proposed project would result in an increase in wastewater generation, but this increased wastewater volume is negligible compared to the overall volume of wastewater treated at the Southeast Plant and well within the existing capacity of the City's wastewater treatment system. Therefore, the project would not result in physical changes to the existing conditions in the vicinity of the Southeast Plant with respect to odors.

Historic Character of the Neighborhood

The commenter states that major league sports have a responsibility to protect the historic character of the neighborhoods. Historic resources were addressed as part of the 1998 Mission Bay Final Subsequent Environmental Impact Report, and the Initial Study for the proposed project determined that there were no historic architectural resources within or in proximity to the project site. Therefore, the project's impacts on historic resources were determined to be less than significant.

Air Pollutant Emissions

In response to comments received during the public review period, the Responses to Comments document includes a response to perceived environmental justice issues related to air quality impacts in Volume 4, Section 13.2, pp. 13.2-10 to 13.2-11. As stated in Response GEN-3 of the RTC document, EIR analyzes the potential for the project to result in localized impacts on air quality that would affect the local neighbors. The SEIR describes how the project would result in increased emissions of air pollutants during both construction and operations. The SEIR determined that increased emissions of certain air pollutants would result in significant, regional air quality impacts that would affect the entire San Francisco Bay Area Air Basin and not a localized area, because these pollutants are transported and diffused by wind concurrently with ozone production through photochemical reaction processes. Consequently, mitigation of this impact related to increased emissions of criteria air pollutants is identified on a region-wide or air basin wide scale, and not to the localized neighborhood or project vicinity.

However, the SEIR also analyzes the potential for the proposed project to generate toxic air contaminants that could expose sensitive receptors to substantial air pollutant concentrations. This analysis considers the air quality effects of the project on the local residents and includes a health risk assessment of the likelihood of both increased cancer risk and localized $PM_{2.5}$ concentrations from both construction and operational sources. This analysis accounts for the cumulative conditions of the localized air quality in the project area associated with other existing sources, such as proximity to vehicular traffic on the adjacent

highways and roadways. The commenter mentions two power plants as a source of cumulative effects, but the Hunters Point and Potrero power plants. These two plants formerly operated in the southeast part of the City, and no longer contribute to cumulative air quality impacts. The wastewater treatment plant mentioned by the commenter contributes to regional air quality conditions, but is too distant from the project site to contribute to localized air quality effects in the Mission Bay area. The analysis determined that the project's impact on annual average $PM_{2.5}$ concentrations and lifetime excess cancer risk at the closest sensitive receptors (UCSF Hearst Tower and UCSF hospital) would not exceed the applicable significance thresholds, and this impact would be less than significant. See Sections 13.2 and 13.13 of the RTC document for further discussion.

Population/Housing/Jobs

The commenter asserts (page 15 of the attachment) that there is no evidence to suggest that the arena would have any benefit to the southeast San Francisco community, and that any such jobs would be simply transferred from the East Bay into San Francisco with no net gain in opportunity. However, the Initial Study, Section 3, Population and Housing, states that the Golden State Warriors, and office and retail development would employ an estimated 2,728 full-time equivalent (FTE) workers at the project site, of which the great majority (2,578 FTE workers) would be employed at new jobs attributable to the project. In addition, the project would provide 1,000 day-of-game/event jobs to serve the event center. With respect to the day-of-game/event jobs, since Oracle Arena would continue to serve as an event venue, and simultaneous events would occur at Oracle Arena and the proposed new event center, many of the day-of-game/event at the event center would be considered new to the City.

The commenter cites (page 31 of the attachment) the impact statement from Initial Study Impact PH-1 [*Construction of the proposed project would not induce substantial growth in the area, either directly (for example, by constructing new homes or businesses) or indirectly (for example, through extension of roads or other infrastructure.) (Less than Significant)*]. The commenter then asserts that the event center would not create any additional jobs, but would attract absentee residents to bid up nearby properties so that they could be near the arena; that the event center would reduce the supply of housing due to services such as AirBnb; and references the growth in commuter shuttle bus use. First, Impact PH-1 addresses project construction-related effects on growth; whereas the commenter's comments are related to potential effects post-construction. Secondly, as described above, the project would create additional new permanent FTE and day-of-game/event jobs. Third, the project description does not include any activities associated with purchasing or renting off-site residential uses near the event center, or with commuter shuttle bus use. In any case, as described above, assessment of economic or social effects is not within the purview of CEQA.

The commenter then cites the impact statement from Initial Study Impact PH-2 [*Construction of the proposed project would not displace existing housing units or create substantial demand for additional housing. (Less than Significant)*]. The commenter asserts the City and County of San Francisco is 7,000 units short of replacing housing removed by redevelopment activity

according to the Housing Element; and that Section 8 applicants are currently referred to sites outside the City and homeless African-American women are given tickets to leave the area in return for assistance. First, Impact PH-2 addresses potential project construction-related effects on displacement of housing; and as discussed in Impact PH-2, implementation of the Mission Bay plan did not displace any existing housing units on the project site, and the proposed project on Blocks 29-32 would not change that condition. Second, the project involves no elements that would affect the Section 8 housing process in the City. Any concerns regarding that process are wholly independent of, and unrelated to, the proposed project. In any case, as described above, assessment of economic or social effects is not within the purview of CEQA.

The commenter then cites the impact statement from Initial Study Impact PH-4 [*Operation of the proposed project would not induce substantial population growth in the area, either directly (for example, by constructing new homes or businesses) or indirectly (for example, through extension of roads or other infrastructure). (Less than Significant)*]. The commenter then asserts that this is not a credible statement given the rapid growth of Mission Bay. As discussed in Impact PH-4, under project operation, while the estimated jobs created by the project would incrementally further increase the jobs/housing imbalance that was described for the Mission Bay Plan Area in the 1998 Mission Bay FSEIR, the estimated slight increase in this offset created by the project would be accommodated by housing elsewhere in- and outside the City. Furthermore, since employment generated by the project could be met by the local and regional labor force, the project impact related to direct growth inducement would be less than significant. Lastly, project operation would not involve the extension of roads or other infrastructure except to the project site itself, at a location already well served by roads and other infrastructure, including previously approved improvements to roads and infrastructure associated with overall Mission Bay Plan development, and consequently, project indirect impacts on population growth of project operation would be less than significant.

Hazards

The commenter refers to the cumulative effects of a Superfund site. However, the project site is not located on or near a Superfund site, so there would be no cumulative effects. Nevertheless, the SEIR describes and analyzes the environmental impacts associated with hazardous materials in the SEIR Initial Study, Section E16 (pp. 106 to 122), as augmented by Responses to Comments, Section 13.22. As described in the SEIR, impacts related to hazardous materials, including those associated with contaminated soils and groundwater, were determined to be less than significant with implementation of identified mitigation measures and compliance with applicable regulations designed to protect the public and the environment from exposure to hazardous materials.

Please see RTC document Section 13.2.4 for further discussion of environmental justice issues.

Issues Raised by Late Commenters on Urban Decay

This response addresses all or part of the following comments, which are quoted below:

O-MBA16S6-9 O-MBA16S6-14

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8. Urban Decay

The Alliance previously commented that the DSEIR ignored altogether the potentially significant urban decay impacts associated with eliminating NBA events at the existing Oracle Arena. Rather than prepare the required analysis in good faith and recirculate the RDEIR with this new information as required by CEQA, the City instead hired a consultant to prepare a post hoc rationalization for why no analysis was required in the first place. (See FSEIR, Appendix UD.) The Alliance has again retained its independent expert, Dr. Philip King, to review the FSEIR's analysis. Dr. King's report is attached hereto as Exhibit 4, and incorporated by reference. As explained by Dr. King, the FSEIR's analysis is riddled with methodological errors and does not actually respond to Dr. Kings' original analysis explaining why it is a potentially significant impact requiring analysis. (*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-9]*)

Unfortunately, the consultants mischaracterized many of the arguments that I presented. This memo will provide my responses to ALH's comments in detail. Here are the key points:

- ALH argues that I do not provide a definition of urban decay. My discussion of the definition of urban decay was limited because the legal definition of urban decay is well-understood by now. ALH provides a definition of urban decay which is consistent with my understanding. The differences between my expert opinion and ALH's have nothing to do with the definition of urban decay, but its significance in this case. It is my professional opinion that the loss of spending and jobs will exacerbate urban decay in this area, which the City itself designated as "blighted."
- ALH conflates revenues and spending and argues that my analysis left out key revenue sources, in particular TV revenues. While it is true that we did not specifically mention TV revenues, our data (from Forbes) on the GSW spending would include all revenue sources including TV revenues.
- ALH argues that the move of the GSW from Oakland will not lead to a transfer of jobs. They cite the lower cost of living in the East Bay. However, an analysis of commuter patterns provided below indicates that, in fact, the percentage of workers who commute from the East Bay to San Francisco is relatively small and consistent with our analysis.
- ALH argues that another team will be attracted to the area and cites the City of Oakland's Coliseum Redevelopment Area. However, numerous articles in Bay Area newspapers and the professional sports media indicate that this plan has struggled to gain support from developers who would be needed to finance the project or the two major professional sports teams who use the adjacent Oakland Coliseum, the Oakland A's and the Oakland Raiders. Indeed the Oakland Raiders are one of three candidates widely touted to move (back) to Los Angeles, which has no NFL team.

In more detail, here are my responses to the ALH memo.

- In it's memo ALH states that:

> "Dr. King's memo does not include a definition of urban decay. Generally speaking, urban decay is characterized by physical deterioration to properties or structures that is so prevalent, substantial, and lasting a significant period of time that it impairs the proper utilization of the properties and structures, and the health, safety, and welfare of the surrounding community. The focus of CEQA review is on whether a project will result in

impacts on the physical environment. CEQA directs the lead agency to consider economic effects, to the extent those effects have the potential to culminate in physical environmental effects (CEQA Guidelines, § 15131). Characteristics of physical deterioration contributing to urban decay include abandoned buildings, boarded doors and windows, parked trucks and long-term unauthorized use of the properties and parking lots, extensive or offensive graffiti painted on buildings, dumping of refuse or overturned dumpsters on properties, dead trees and shrubbery, and uncontrolled weed growth. This is the context of urban decay that ALH Economics deems relevant to the response herein."

I agree my memo did not spend a great deal of time defining urban decay since the legal literature here is reasonably clear. I accept ALH's definition.

- In their memo ALH states:

  "Dr. King's analysis is based on the assumption that all Warrior's revenues derive from ticket sales to patrons living in the East Bay, San Francisco, and the Peninsula. However, there are numerous other revenue sources, such as merchandise sales and media revenues, and ALH Economics found that only 76% of ticket sales originate from the areas identified by Dr. King. Further, Dr. King's analysis of a generalized economic impact on Alameda County does not lead to the conclusion that urban decay will result in a specific location."

  My analysis was based on an estimate of spending derived from Forbes magazine, which ALH did not dispute. (Since ALH has better access to this data I assume they would have disputed this figure if it were too high.)

  The confusion that runs like a thread through the ALF report is as follows: they confuse the sources of spending at Warriors games with economic impact that this spending causes within Alameda County. They do this in two ways:

  - First, the place of residence of those who attend Warriors games (whether they come from the East or West Bay) is totally irrelevant. Whether these fans are from Oakland or New York City, what matters is that whereas before their money was being spent in Alameda County, this money is now being spent in San Francisco.
  - Second, my report took the sources of Warriors' revenue as irrelevant, and focused instead upon the ways in which this revenue was spent by the organization. Thus, for the purposes of our report, whether that money came from ticket sales, TV contracts, or concession stands of various kinds was totally beside the point. What mattered to us was whether the money was going to local employees, players' salaries or reinvested within the organization.

- Further, there are, however, numerous ways in which the ALH report misrepresents these figures and the nature of IMPLAN analyses in general.
  - First, IMPLAN uses the same methodology as all U.S. government calculations for GDP, etc. in that the employment numbers represent the location of the jobs themselves and not the residence of the person who perform those jobs. Even if many of these employees will not have to relocate or find a new job, their job still moves from one county to another.[1]
  - Second, the employment numbers provided by IMPLAN to not directly translate into the full-time job estimates (FTE) provided in other EIRs. Within IMPLAN, each job within the professional sports/spectator industry is roughly equivalent to 85% of 1 FTE.[2]
  - Third, the employment numbers do NOT represent the number of people directly employed by the Warriors organization, but also include those employed by other companies (concession stands, parking attendants, etc.)).[3]
  - Our original report generously assumed that 74% of the Warriors annual spending was non-local (or "leaked") in nature. While the ALH report criticized the arbitrary nature of

these leakage estimates, a proper remedy of this point, again, works against the ALH's stated goal. The non-arbitrary approach which ALH seems to advocate would have us acknowledge that the leakage rates that are native to the professional sports/spectator industry are already built into the IMPLAN model. Such an analysis would estimate a much larger economic impact.[4]

- ALH argues that the move of the GSW from Oakland will not lead to a transfer of jobs. They cite the lower cost of living in the East Bay. The statistics they provide, however, only distract from other, more directly relevant data. The US Census Bureau keeps statistics on commuting within the Bay Area. Only 12.16% of people working in San Francisco commute from Alameda County, which is consistent with our analysis.[5]
- ALH argues that the departure of the Golden State Warriors is not an issue since the City of Oakland's Coliseum Redevelopment Area will bring in other sports teams. However, the local news media, as well as the sports media, have covered this issue extensively and it's clear that the City of Oakland, while enthusiastic about bringing in another sports team, is having difficulty finding a private developer to fund the project. This project is estimated by one source (cited below) to cost $400 million.
    - Several new media articles within the last month indicate that developers are reluctant to invest money in the Oakland Coliseum Redevelopment Area. This RDA is particularly problematic since the Oakland Raiders have been widely mentioned in the media as possible candidates to move to their old home in Los Angeles, or elsewhere. The Raiders could also move to Levi's stadium in Santa Clara, where the 49ers play, though this idea is unpopular.
    - Here are two recent quotes:

      -"Oakland's most recent stadium proposal — Mayor Jean Quan's Coliseum City retail-office-housing scheme — sank without a trace when neither the Raiders nor A's would climb aboard.[6]"

      "The Raiders share a clearly substandard facility with Major League Baseball's Oakland Athletics and, simply, there is no plan. A potential financing partner, Floyd Kephart, dropped out, leaving a $400 million funding gap that neither Oakland city officials nor Alameda county officials can figure out how to fill. There still remains the remote possibility of the Raiders sharing Levi's Stadium with the 49ers, although both teams loathe that idea. The Raiders seem a certain candidate for relocation.[7]"
- Contrary to ALH's rosy analysis, the City of Oakland has struggled to find support for this plan.[8] Thus any conclusion that the Orcale Arena can find another sports team is speculation.

Consequently, in my professional opinion, ALH's responses fail to deal directly with my analysis. On the issue of other sports teams entering the market, the evidence as it stands today indicates that it's unlikely in the foreseeable future that another NBA team will locate to Oakland (and ALH provides no evidence that any team is interested). Further, the possibility of the Oakland Raiders moving would exacerbate the situation. While the City of Oakland is clearly eager to get a new NBA franchise, the media reports indicate that the City's efforts have not been fruitful and any discussion of future teams occupying that space is speculative.

Footnotes:

1 Contrary to what the ALH report suggests, only 3.14% of those employed within Alameda County reside within SF, while only 12.16% of those employed within SF commute from Alameda County. http://www.vitalsigns.mtc.ca.gov/commute-patterns#chart-0

2 https://implan.com/index.php?view=document&alias=4-536-fte-a-employment-compensation-conversion-table&category_slug=536&layout=default&option=com_docman&Itemid=1764

3 Compare to the estimated 771 jobs that are provided by the A's. https://salsa.wiredforchange.com/o/5782/images/FinalStadiumReport_04.21.10.pdf

4 See http://www.santaclara.org/pdf/49er-Stadium-Impact-Study.pdf in which this same reasoning is applied to the 49er's new stadium.

[5] See http://www.vitalsigns.mtc.ca.gov/commute-patterns#chart-0
[6] See San Francisco Chronicle: "Oakland mayor trying to put together new stadium deal for Raiders By Matier & Ross, October 30, 2015 Updated: November 1, 2015 12:35am, http://www.sfchronicle.com/bayarea/matier-ross/article/Oakland-mayor-trying-to-put-together-new-stadium-6602228.php.
[7] See The Race for L.A. Heats Up, http://mmqb.si.com/mmqb/2015/10/22/nfl-los-angeles-relocation-stadiums-chargers-rams-raiders.

(*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-14]*)

Response to Late Comment GEN-3: Urban Decay

Please see RTC document Section 13.2.5 and Appendix UD for discussion of urban decay issues, which describes in detail that urban decay is not an explicit CEQA topic identified in the CEQA Guidelines. Further, economic impacts are not required be analyzed in a CEQA document unless they have the reasonably foreseeable indirect effect of leading to physical changes in the environment, such as urban decay. As described below, and in the RTC document Section 13.2.5 and Appendix UD, OCII has considered the potential for urban decay during the environmental review for the project and determined that it is not reasonably foreseeable that the project will result in significant urban decay impacts. Notwithstanding the commenter's disagreement, OCII's determination that the project will not result in significant urban decay impacts is supported by substantial evidence. (See *Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173, 1183 [an agency's determination that there will be no significant urban decay impacts is reviewed for substantial evidence in light of the entire administrative record].)

ALH Urban & Regional Economics (ALH Economics) has reviewed the November 2, 2015 memo from Philip King, Ph.D. to Patrick Soluri, Attorney at Law (Comment O-MBA16S6-14), regarding Dr. King's comments on the ALH Economics September 30, 2015 urban decay letter report, as presented in the RTC document Section 13.2.5 and Appendix UD. This response also addresses comments provided by Dr. King in his July 13, 2015 comments pertinent to the environmental documentation associated with the relocation of the Golden State Warriors to San Francisco (Comment O-MBA7S2-91 in the RTC document).

The November 2, 2015 memo from Dr. King does not present any new information that would lead OCII to reach a different conclusion regarding the potential for urban decay impacts. As explained in the RTC document (Response GEN-4: Urban Decay) the commenter's concerns about urban decay are unfounded and unwarranted.

The discussion below provides responses prepared by ALH Economics[1] regarding Dr. King's November 2, 2015 memo in bullet format. Unless otherwise stated, references hereafter to Dr. King's memo pertain to the November 2, 2015 memo (Comment O-MBA16S6-14).

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[1] Amy L. Herman, Principal, ALH Urban & Regional Economics, November 3, 2015. Letter to Paul Mitchell, ESA Community Development, regarding Response to Philip King, Ph.D. November 2, 2015 Memo Regarding Urban Decay Analysis of Proposed Movement of Golden State Warriors from Oakland to San Francisco.

- In several places Dr. King states that ALH Economics argued that another sports team would be attracted to the arena after the departure of the Golden State Warriors. Specifically, Dr. King states "ALH argues that another team will be attracted to the area and cites the City of Oakland's Coliseum Redevelopment Area."[2] This assertion is repeated in Dr. King's overall conclusion, in which he states "Thus any conclusion that the Oracle Arena can find another sports team is speculation."[3] Dr. King further states "On the issue of other sports teams entering the market, the evidence as it stands today indicates that it's unlikely in the foreseeable future that another NBA team will locate to Oakland (and ALH provides no evidence that any team is interested.)"[4]

  Dr. King's statement that ALH economics argued that another sports team would be attracted to the Oracle Arena following the departure of the Golden State Warriors is not accurate. There is no mention in the letter report prepared by ALH Economics of the expectation that another sports team will locate at the Arena. Instead, the ALH Economics report includes considerable case study analysis of other indoor arenas in the United States that lost their sports teams and continued to operate in the absence of a sports affiliation. Thus, Dr. King's criticism in his overall conclusion that the ALH Economics report provided no evidence that any NBA team is likely to locate in Oakland is irrelevant, as there was no such argument made by ALH Economics.

- Dr. King states that "ALH argues that I do not provide a definition of urban decay."[5] ALH Economics did not argue that Dr. King did not provide a definition of urban decay. His lack of definition was provided as a statement of fact, and was not stated in an argumentative manner. Instead, ALH Economics provided a definition to set a context for the information and analysis presented by ALH Economics. Dr. King did not provide a similar context for his original memo, but subsequently agrees with the ALH Economics definition.

- Dr. King's memo addresses at length the issue of relocated jobs, and claims that ALH Economics argues that "the move of the GSW from Oakland will not lead to a transfer of jobs."[6] This is a false statement, as the ALH Economics analysis did not make this argument. The ALH Economics memo gave reasons why Dr. King likely overstated the job impacts of the Golden State Warriors relocation. Further, the ALH Economics letter report acknowledged there would likely be some economic shift pursuant to the relocation, e.g., the ALH Economics report stated that "ALH Economics recognizes there are some team expenses that are likely to be shifted geographically upon team relocation to the Event Center."[7] This relocation of team expenses comprises some degree of economic shift, but ALH Economics did not attempt to quantify the associated jobs impacts. This is not the same as saying there would be no transfer of jobs.

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2 Philip King, Ph.D., November 2, 2015, Memo to Patrick Soluri, Attorney at Law, "Re: Urban Decay Analysis of Proposed Movement of Golden State Warriors from Oakland to San Francisco, "(Comment O-MBA16S6-14), page 1. Please note subsequent page number references to this document refer to an excerpted copy of this memo, and that page numbers in the source document may be plus or minus one.

3 Ibid, page 4.

4 Ibid.

5 Ibid, page 1.

6 Ibid, page 3.

7 ALH Economics letter report to Mr. Paul Mitchell, September 30, 2015, "Re: Response to Philip King, Ph.D. Memo Regarding Proposed Relocation of Golden State Warriors from Oakland to San Francisco," (RTC document Appendix UD), page 8.

- Dr. King seems confused about the ALH Economics discussion regarding the degree to which Golden State Warriors employees might or might not relocate pursuant to the team's relocation. ALH Economics presented this information pertinent to Dr. King's assumptions regarding the degree to which Golden State Warriors expenditures would shift from the East Bay to San Francisco. The ALH Economics point was that employees are unlikely to relocate their residence with a minor geographical relocation of the team, and thus the portion of Golden State Warriors expenditures spent on employee salaries would be unlikely to shift to San Francisco to the degree implicitly assumed by Dr. King. This ALH Economics discussion did not address the relocation of jobs, which appears to be Dr. King's interpretation,[8] but rather the distribution of Golden State Warriors expenditures. In contrast, as it pertains to jobs, ALH Economics is in agreement with Dr. King's statement that the employment numbers referenced by IMPLAN represent "the location of the jobs themselves and not the residence of the person who perform those jobs."[9]

- ALH Economics notes that in his current memo Dr. King provides information and clarification that would have benefitted his earlier analysis, although ALH Economics continues to disagree with his manner of implementing IMPLAN. This includes Dr. King's citation that his "employment numbers do not represent the number of people directly employed by the Warriors organization, but also include those employed by other companies (concession stands, parking attendants, etc.)." The traditional implementation of IMPLAN is for "direct" jobs to pertain to the economic stimulus under examination, as referenced in the September 30, 2015 ALH Economics letter report (see RTC document, Appendix UD). Interpretation of Dr. King's original analysis might have been better facilitated if it had been more explicit about his assumptions, including his current reference to IMPLAN jobs now being equivalent to 85 percent of a full-time equivalent job.[10] Omission of this equivalency earlier was misleading to the interpretation of his analysis. However, this could be complicated by questioning of the proper economic sector for implementation of the IMPLAN analysis. Since the Warriors do not own or operate the Oracle Arena, upon reconsideration ALH Economics believes some of the expenditures might have been more appropriately analyzed relative to at least one additional sector, pertaining to "promoters of performing arts and sports and agents for public figures," which is the IMPLAN sector that would mostly pertain to the concert promoter that currently manages the arena.

- Dr. King cites that his original analysis generously assumed that 74 percent of the Golden State Warriors annual spending was non-local, and claims that ALH Economics criticized the "arbitrary nature"[11] of this leakage estimate. This is another misstatement, in that ALH Economics did not use this phrasing when questioning Dr. King's assumption. Dr. King further implies that application of the Warrior spending figure in its entirety would have resulted in higher impacts, even with IMPLAN's internal adjustments accounting for sectoral spending patterns impacts.[12] There are many decision points involved in the preparation of an IMPLAN analysis. One of these is the geography of analysis. One could equally argue that if the full amount of Golden State Warriors expenditures were reflected in an IMPLAN analysis, then the geography of

[8] King (Comment O-MBA16S6-14), pages 2 and 3.
[9] King (Comment O-MBA16S6-14), page 2.
[10] Ibid, page 3.
[11] Ibid.
[12] King (Comment O-MBA16S6-14), page 3.

analysis should be larger than just Alameda County, as current Golden State Warrior's spending most likely is more regional in nature, as assumed by Dr. King himself in his original analysis. However, expanding the analysis beyond Alameda County would be contradictory to Dr. King's argument regarding potential economic impacts of the Golden State Warriors relocation.

- Dr. King states that "ALH argues that the departure of the Golden State Warriors is not an issue since the City of Oakland's Coliseum Redevelopment Area will bring in other sports teams."[13] Further, Dr. King cites recent media articles regarding difficulties encountered by Oakland surrounding other prospective professional sports team relocations and efforts to attract a master developer to help implement the City of Oakland's recently adopted Coliseum Area Specific Plan. Thus Dr. King concludes that ALH Economics' responses to King's earlier analysis "fail to deal directly with my analysis" and that "any discussion of future teams occupying that space is speculative."[14]

- As stated earlier, ALH Economics does not make any assumption that other sports teams will be brought in to replace the Golden State Warriors. Further, the City of Oakland's Coliseum Area Specific Plan, which encompasses a portion of the former Coliseum Redevelopment Area (which, despite Dr. King's reference in the present tense, was disbanded concurrent with the dissolution of Redevelopment in California 2012), provides flexibility for potential land use outcomes, which do and do not accommodate sports facilities. ALH Economics recognizes that future planning for the Coliseum Area will be a long-term effort, with several possible configurations depending upon the future disposition of all the sports teams that currently hold home games in the Coliseum Area. This includes land use alternatives featuring no future sports teams. However, the City of Oakland is fortunate that a planning structure has been developed. The actual outcome for the area and implementation of the Specific Plan is speculative at present, with several possible outcomes. However, area assets for future development include highway visibility and accessibility as well as BART accessibility.

In summary, ALH Economics has determined that Dr. King's November 2, 2015 memo does not provide any new evidence or meaningful support for the claim that relocation of the Golden State Warriors to San Francisco will result in urban decay in Oakland. Dr. King's letter is premised on many inaccurate and misleading statements regarding the ALH Economics September 30, 2015 analysis, such as ALH Economics arguing that another sports team would be attracted to the Oracle Arena following the departure of the Golden State Warriors, that ALH Economics argues that the relocation of the Golden State Warriors to San Francisco will not lead to a transfer of jobs, and that ALH Economics misrepresents the IMPLAN findings as pertaining to where employees live versus where employees work. None of these are the case.

ALH Economics previous memo (See RTC document, Appendix UD) provides substantial evidence that the project will not result in significant urban decay impacts. Notably, ALH Economics provided examples of indoor arenas that continue to operate after the departure of their last professional sports team, acknowledged that some economic activity will be

[13] Ibid, page 3.
[14] King (Comment O-MBA16S6-14), page 4.

transferred from Oakland to San Francisco with the Golden State Warriors' relocation, and explained that the residential location of employees pertains to Dr. King's assumptions regarding transfer of Golden State Warrior expenditures, and not job impacts. In conclusion, Dr. King's memos do not provide sufficient information or evidence to show that the project would be likely to result in significant urban decay impacts in Oakland. OCII's determination that significant urban decay impacts will not occur is supported by substantial evidence.

The comment also states that the EIR must be recirculated because new information regarding urban decay was included in the Final EIR. The comment is incorrect. As explained in CEQA Guidelines section 15088.5, recirculation of an EIR is required only when "significant new information" is added to the EIR after public notice is given of the availability of the Draft EIR for public review but prior to certification of the Final EIR. Examples of "significant new information" are provided in the CEQA Guidelines including a disclosure showing that: "A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented" or "[a] substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance." (CEQA Guidelines, § 15088.5, subd. (a)(1)(2).) As explained above, the analysis regarding the potential for urban decay does not reveal any new significant environmental impacts or a substantial increase in the severity of an environmental impact. Therefore, recirculation of the SEIR is not required.

Issues Raised by Late Commenters on Fair Trial

This response addresses all or part of the following comments, which are quoted below:

O-MBA17L5-1 O-MBA17L5-3 O-MBA21L8-1

I write today regarding the discussion of secondary uses in Attachment C to the Memorandum to the CCII from Executive Director Tiffany Bohee for Items 5(a), 5(b), 5(c), 5(d) & 5(e) the November 3, 2015, CCII meeting agenda. The short time period between the October 29, 2015, publication of this memorandum and the November 3, 2015, OCII hearing to determine the "secondary use" question for the public to respond deprives my client of a fair trial under subdivision (b) of section 1094.5 of the Code of Civil Procedure. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA17S5-1]*)

My client hereby requests, under the fair trial requirement of Code of Civil Procedure section 1094.5(b), the California Public Records Act, and the San Francisco Sunshine Ordinance, that OCII produce to my office, immediately and before the November 3, 2015, OCII hearing, a copy of any documents that memorialize any previous determinations by the OCII, the Redevelopment Agency, or the Executive Director on whether a proposed building in the Mission Bay South Redevelopment Plan area is an allowable as a secondary use because it is either (1) a place for night time entertainment, (2) a recreation building, or (3) a public structure or use of a nonindustrial character; including any document memorializing the Executive Director's finding that the UCSF Medical Center

"constituted a secondary use as a public structure." (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA17S5-3]*)

The OCII's EIR preparation team includes 48 people, including 15 from several City departments and another 33 from six different consulting firms. (DSEIR, p. 9 – 1.) OCII's team spent 3 months preparing responses to comments and conducting new environmental analysis for changes to the Project, including a new Project Variant, ultimately publishing 2,624 pages of new analysis and data.

Yet the OCII gave the public only 11 days to review the FSEIR/RTC before meeting to certify it. Then, the October 23, 2015, notice of publication of the Response to Comments informed the public they would have no opportunity to comment on the FSEIR/RTC. But the OCII hearing agenda for November 3, 2015 published on October 29, 2015, reversed course and suggested that public comment on the SFEIR/RTC would be heard at the hearing.

As a result, the Mission Bay Alliance's legal team, with its consultants, has not had adequate time to review and comment on the FSEIR/RTC, depriving the Alliance of a fair trial on the Project approvals, including certification of the SEIR, per Code of Civil Procedure section 1094.5(b).

Moreover, the Mission Bay Alliance's legal team has submitted and will submit a large volume of new comments for consideration by the Commission. Since the members of the Commission cannot be expected to review this volume of new information before the close of today's hearing, the Alliance requests that Commission continue the hearing for at least three weeks to: (1) provide a fair trial on the Project approvals, (2) allow the Alliance to complete its review and comment on the FSEIR/RTC, and (3) allow the Commission to review the comments submitted for today's hearing. (*Mission Bay Alliance, Tom Lippe, email, November 3, 2015 [O-MBA21L8-1]*)

Response to Late Comment GEN-4: Fair Trial

Comment O-MBA17L5-1

The commenter states that the time period between the publication on October 29, 2015 of a proposed secondary use determination regarding the event center (the "Secondary Use Determination") and the November 3, 2015 OCII hearing to determine "the 'secondary use' question" was too brief and therefore deprived his client of a fair trial under California Code of Civil Procedure section 1094.5(b).

California Code of Civil Procedure section 1094.5 ("CCP § 1094.5") governs administrative mandamus proceedings challenging an agency's adjudicatory decision. Importantly, CCP § 1094.5 applies only in limited circumstances, and cannot be invoked unless the agency decision is "made as the result of a proceeding in which by law a hearing is required to be given" and "evidence is required to be taken," among other criterion.[15] An evidentiary hearing is required "by law" if a statute, ordinance, or regulation relating to the particular agency action or due process principles mandate a hearing under the particular circumstances.[16]

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[15] CCP § 1094.5(a); 300 DeHaro St. Investors v Department of Hous. & Community Dev. (2008) 161 CA4th 1240, 1250.

[16] *Pomona College v Superior Court* (1996) 45 CA4th 1716, 1727 (mandamus is available if hearing is required by statute, an organization's internal rules and regulations, or due process).

An evidentiary hearing was not required by law or the principles of due process in connection with the Secondary Use Determination. The Redevelopment Plan constitutes a delegation of state authority to OCII under the Community Redevelopment Law, Cal. Health & Safety Code §§ 33000 et seq., as amended by the Redevelopment Dissolution Law, Cal. Health & Safety Code §§ 34161 et seq., and establishes the basic land use controls within the Plan Area. Section 302 of the Redevelopment Plan sets forth the procedure by which secondary uses identified in the Redevelopment Plan for a particular land use district are permitted and states, in relevant part, that a secondary use shall be permitted provided that "such use generally conforms with redevelopment objectives and planning and design controls established pursuant to this Plan and is determined by the Executive Director to make a positive contribution to the character of the Plan Area based on a finding of consistency" with certain listed criteria. Notably, Section 302 does not require an evidentiary hearing regarding a secondary use determination. Although the proposed Secondary Use Determination was presented by the Executive Director to the CCII at its November 3, 2015 meeting as an informational item, this step was not required by statute, ordinance or regulation. Nor does the fact that this step was taken create a legal hearing requirement where none previously existed. Moreover, due process principles do not mandate that a hearing be held on the Secondary Use Determination because the commenter does not appear to have been deprived of a property or liberty interest.[17]

Because no evidentiary hearing was required, CCP § 1094.5 – including any right to a fair trial under subdivision (b) thereof – is inapplicable to the Executive Director's issuance of the Secondary Use Determination. Accordingly, the commenter's assertion that its client has been deprived of a fair trial under CCP § 1094.5(b) has no basis in law.

Moreover, even if CCP § 1094.5 did apply to the Secondary Use Determination, OCII complied with the requirements of the San Francisco Sunshine Ordinance and its own standard procedures by publishing the proposed Secondary Use Determination more than 72 hours prior to the date on which such proposed Secondary Use Determination would be presented to the CCII. Common sense suggests that following an agency's standard and reasonable procedures with regard to public meetings does not violate any notion of a fair trial.

Comment O-MBA17L5-3

In this comment dated November 2, 2015, the commenter requests that his client, the Mission Bay Alliance, receive materials from OCII relative to certain prior secondary use determinations made by OCII, the Redevelopment Agency or the Executive Director prior to commencement of the November 3, 2015 CCII hearing. The commenter states that this request is made pursuant to the fair trial requirement of California Code of Civil Procedure section 1094.5(b), the California Public Records Act and the San Francisco Sunshine Ordinance. On the same day, November 2, 2015, OCII responded to the request by providing to the commenter the following documents: the UCSF secondary use findings.

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[17] *Kash Enters. v City of Los Angeles* (1977) 19 C3d 294, 307

As of the date the comment was submitted to OCII, the commentator's client, the Mission Bay Alliance, was in possession of all documents satisfying the document request. Specifically, attached to a comment letter received by OCII from Susan Brandt-Hawley, counsel to the Mission Bay Alliance, on November 2, 2015 were a copy of the following documents: (i) a memorandum dated October 12, 2005 from Amy Neches, Senior Project Manager, to the Executive Director recommending that the Executive Director make a secondary use determination for a proposed UCSF hospital on Blocks 36-39 of the Mission Bay South Redevelopment Plan Area and setting forth the basis for such recommendation; and (ii) Resolution No. 176-2005 adopted by the Redevelopment Agency on November 1, 2005, acknowledging the Executive Director's determination that the such UCSF hospital would be a permitted a secondary use under the Redevelopment Plan. These documents constitute all documents in existence satisfying the records request contained in this comment.

As described above, CPP § 1094.5(b) is not applicable to and does not require that a "fair trial" be given in the context of the Secondary Use Determination. Nevertheless, the commenter's contention is moot in that the commenter's client was in actual possession of all of the requested documents at the time the comment was submitted. Further, OCII responded to the commenter's request on November 2, 2015, the same day the request was made and within the ten calendar day time period required under the California Public Records Act and within the seven calendar day time period required under the San Francisco Sunshine Ordinance.

Comment O-MBA21L8-1

The commenter states that it was deprived of a fair trial under CCP § 1094.5(b) because (i) the RTC document was published eleven days prior to OCII Commission's November 3, 2015 meeting to consider certification of the Final SEIR, (ii) OCII published conflicting information on October 23, 2015 and October 29, 2015 regarding the public's ability to provide comment on the FSEIR/RTC at the November 3, 2015 OCII Commission meeting, and (iii) the commenter and its client submitted a large volume of purportedly new comments for consideration prior to the conclusion of the November 3, 2015 OCII Commission meeting.

In asserting that the 11-day time period between the public issuance of the proposed Final SEIR and the November 3, 2015, OCII Commission hearing at which the document was certified was so short as to deny his client its purported right to a "fair trial" under Code of Civil Procedure section 1094.5, subdivision (b), the commenter is essentially invoking the broad generic concept of a "fair trial" in order to try to rewrite CEQA as enacted by the Legislature. Neither CEQA nor the CEQA Guidelines set any minimum time period by which members of the public may review a proposed Final EIR before a lead agency decisionmaking body can certify the document. Indeed, CEQA Guidelines section 15089, subdivision (b), provides that "Lead Agencies *may* provide an opportunity for review of the final EIR by the public or by commenting agencies before approving the project." As used in the CEQA Guidelines, the word "may" "identifies a permissive element which is left fully to

the discretion of the public agencies involved." (CEQA Guidelines, § 15005, subd. (c).) Rather, the only statutory requirement relevant in this context is the requirement that lead agencies make their responses to timely *agency* comments at least 10 days prior to certification. (Pub. Resources Code, § 21092.5, subd. (a); CEQA Guidelines, § 15088, subd. (b).) OCII clearly satisfied this requirement by issuing the Final EIR, which included responses to all timely agency comments, 11 days prior to the OCII Commission hearing at which certification was to be considered. Members of the public, who also received 11 days to review the same document, were incidental beneficiaries of the manner in which OCII chose to comply with this requirement. The alternative permissible approach, by which OCII could have responded separately to agency comments in advance of publishing the proposed final EIR, would have left members of the public less time to review the document. If the commenter believes, as a matter of public policy, that the current statutory scheme provides too little time for commenters to review final EIRs before they are certified, the commenter should direct its concerns to the Legislature.

California Code of Civil Procedure section 1094.5 ("CCP § 1094.5") governs administrative mandamus proceedings challenging an agency's adjudicatory decision. Subdivision (b) of the statute simply states that a court's inquiries in an administrative mandamus proceeding challenging an agency action subject to the statute shall include the question of "whether there was a fair trial." Since nothing in CEQA requires any kind of "trial" in connection with the certification of a final EIR, this provision of section 1094.5 simply has no application here. To the extent that the commenter intends to argue that this brief reference to a "fair trial" in section 1094.5 impliedly requires a formal public review period for final EIRs beyond the 11 days provided here, such a contention runs aground on the language of Public Resources Code section 21083.1, which states that "[i]t is the intent of the Legislature that courts, consistent with generally accepted rules of statutory interpretation, shall not interpret [CEQA] or the state guidelines … in a manner which imposes procedural or substantive requirements beyond those explicitly stated in [CEQA] or in the state guidelines." (See also *Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal.4th 1086, 1107.) The commenter's contention is also contrary to the accepted canon of statutory construction by which a specific statute addressing a particular matter takes precedence over a much more generalized statute that, absent the specific directive, could arguably apply to that same particular matter. (See, e.g., *In re Williamson* (1954) 43 Cal.2d 651, 654.) The CEQA requirement to provide 10 days of review time only for public agency comment responses is a very specific statute, whereas subdivision (b) of section 1094.5 is very general and thus cannot be understood as trumping the plain – and specific – language of CEQA.

More generally, what constitutes a fair trial varies with the circumstances.[18] Although due process principles determine whether the agency hearing was fair, "due process does not require any particular form of notice or method of procedure," but rather only reasonable notice and a reasonable opportunity to be heard under applicable law.[19] Moreover, as the

[18] *Morrissey v. Brewer*, 408 U.S. 471, 481 (1972). ("[D]ue process is flexible, and calls for such procedural protections as the particular situation demands.")
[19] *Drummey v. State Bd. of Funeral Directors* (1939) 13 C2d 75, 80–81.

California courts have recognized, because CEQA "is a creature of the Legislature, exercising political rather than judicial or administrative power," and because the preparation of an EIR "does not deprive the owners in the impacted areas or members of the public of property rights in the constitutional sense," there are "no due process strictures on the mode, nature or type of notice that had to be given" before taking actions under CEQA.[20] Here, nevertheless, OCII complied fully with applicable law, including without limitation CEQA and the CEQA Guidelines, in publishing the RTC document, providing notice of the public hearing on the Final SEIR and RTC document and certifying the Final SEIR. Mission Bay Alliance was provided with notice of the publication of the RTC document and the agency hearing on consideration of the FSEIR. At the hearing, Mission Bay Alliance was provided an opportunity to be heard in full compliance with applicable law.

CEQA Guidelines Section 15088(a) requires that the lead agency only respond to comments made within the noticed comment period. The OCII Commission accepted written comments to the Final SEIR and RTC document prior to and through the conclusion of the OCII Commission hearing, and allowed all members of the public to speak and present evidence at the OCII Commission hearing.

Mission Bay Alliance took full advantage of these opportunities by presenting public comment at the November 3, 2015 hearing and by submitting more than 600 pages of written comments and supporting materials to OCII regarding the Final SEIR and RTC document prior to the certification action on that date. Having ignored OCII's notice language informing participants not to raise new issues about the FSEIR during the OCII hearing, the commenter clearly suffered no prejudice from any arguable legal infirmity associated with such notice. OCII notes, however, that courts have recognized that agencies can set reasonable rules on the submission of information prior to EIR hearings in order to permit such hearings to proceed in an orderly fashion. (See *Mount Shasta Bioregional Ecology Center v. County of Siskiyou* (2012) 210 Cal.App.4th 184, 201-202 [court holds that respondent agency appropriately disregarded materials submitted after a locally set deadline requiring submissions at least five days in advance of administrative hearing on project and EIR]; see also *Citizens for Responsible and Equitable Environmental Development v. City of San Diego* (2011) 196 Cal.App.4th 515, 527-528 [court holds that petitioner did not effectively exhaust its administrative remedies with respect to issues buried deep within voluminous materials submitted to decisionmaking body at the time of the hearing on the merits of the project].)

Regardless of the timing of commenter's voluminous last-minute submissions, OCII and City staff prepared written and oral responses prior to and during the November 3 hearing, concluding that, upon review, the comments did not contain significant new information within the meaning of CEQA, including CEQA Guidelines § 15088.5.

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[20] *Lee v. Lost Hills Water Dist.*, 78 Cal. App. 3d 630, 634 (1978).

SECTION 3: RESPONSES TO LATE COMMENTS ON THE ENVIRONMENTAL REVIEW PROCESS

The comments and corresponding responses in this section cover topics generally discussed in SEIR Chapter 2, Introduction, regarding the CEQA process and its requirements, as augmented by RTC document Section 13.3. These include topics related to:

- Issue ERP-1: Adequacy of the SEIR and CEQA Process
- Issue ERP-2: Tiering
- Issue ERP-3: CEQA Findings
- Issue ERP-4: Public Comment
- Issue ERP-5: SEIR Certification
- Issue ERP-6: General Comments on Environmental Topics

Issues Raised by Late Commenters on Adequacy of the SEIR and CEQA Process

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-1 O-MBA22B4-1 O-MBA22B4-3 O-MBA25L10-1
O-MBA27S9-2 O-MBA28L11-1

General Comment 1. Many of the responses to comments reflect a basic misunderstanding of the relationship, under CEQA, between determination of significance, the feasibility and effectiveness of mitigation measures, and whether social or economic considerations outweigh environmental harm. For projects for which an EIR has been prepared, both the EIR and the mandatory findings required by CEQA section 21081, the analysis starts with whether an impact is significant. A finding of significance triggers the obligation to identify and adopt feasible mitigation measures that are effective in substantially reducing the significant impact. Once all feasible and effective mitigation measures have been identified and adopted, if the impact remains significant, the agency may approve the project if it finds that social or economic considerations outweigh environmental harm.

Each of these steps in the analysis is distinct. Here, many of the RTC's responses to comments conflate and confuse these steps, and thereby undermine the integrity of the analysis. One example discussed below is Response NOI-2a regarding construction noise thresholds. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-1]*)

The Mission Bay Alliance is concerned about many ongoing defects in the CEQA process for the proposed Warriors Event Center. These include violations of CEQA's procedural mandates, material inadequacies of the Subsequent EIR, and OCII's unsupported substantive findings. In the minimal 11-day time frame allotted for public review of the new and voluminous OCII CEQA documents, including the Final SEIR, technical reports, and proposed findings, my co-counsel and I have done our best to bring these issues to the attention of the Commission on behalf of the Alliance. (*Mission Bay Alliance, Susan Brandt-Hawley, letter, November 3, 2015 [O-MBA22B4-1]*)

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2. The Final SEIR Responses to Comments is Inadequate

Every lead agency is required to provide a "good faith, reasoned analysis" in responses to comments on the EIR; "[c]onclusory statements unsupported by factual information will not suffice."

(Guidelines, § 15088, subd.(b); see *Laurel Heights Improvement Association. v. Regents of the University of California* (1993) 6 Cal.4th 1112, p. 1124.) When a comment raises a significant environmental issue, the EIR must respond in detail, providing reasons why the comment was not accepted.

Sutter Sensible Planning, Inc. v. Board of Supervisors (1981) 122 Cal.App.3d 813 explains that detailed EIR responses "insure the integrity of the process of decision by precluding stubborn problems or serious criticism from being swept under the rug." (Id., p. 820.) Flanders Foundation v. City of Carmel-by-the Sea (2012) 202 Cal.App.4th 603 ordered issuance of a writ when an EIR failed to respond to a comment proposing a reduced-size parcel for an environmentally damaging project. (Id., pp. 616-617.) (*Mission Bay Alliance, Susan Brandt-Hawley, letter, November 3, 2015 [O-MBA22B4-3]*)

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1. The Project SEIR does not comply with CEQA, as described in the Alliance's many comments on the SEIR submitted to the Successor Agency. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 6, 2015 [O-MBA25L10-1]*)

The Event Center Project SEIR does not comply with CEQA, as described in the Alliance's many comments on the SEIR submitted to OCII. Over the last three months, the Alliance has reviewed and commented on material inadequacies in the expedited environmental review process. This Commission and the Board of Supervisors cannot fully consider and adequately mitigate the Event Center's many significant impacts without the benefit of an EIR that complies with CEQA. (*Mission Bay Alliance, Soluri Meserve, letter, November 10, 2015 [O-MBA27S9-2]*)

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1. The Project SEIR does not comply with CEQA, as described in the Alliance's many comments on the SEIR submitted to the Successor Agency. Over the last three months, the Mission Bay Alliance has reviewed and commented on material inadequacies in the Project's expedited environmental review process. This Committee and the Board of Supervisors cannot fully consider and adequately mitigate the Project's many significant impacts without the benefit of an EIR that complies with CEQA. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 9, 2015 [O-MBA28L11-1]*)

Response to Late Comment ERP-1: Adequacy of the SEIR and CEQA Process

The commenter asserts in multiple letters that the SEIR does not comply with CEQA and that there are defects in the CEQA process for the proposed project. The commenter insinuates that there are violations of CEQA procedural mandates and material inadequacies of the SEIR, including the Responses to Comments (RTC) document. In one letter (O-MBA20L7-1), the commenter contends that the Responses to Comments "reflect a basic misunderstanding of the relationship, under CEQA, between determination of significance, the feasibility and effectiveness of mitigation measures, and whether social or economic considerations outweigh environmental harm." OCII maintains that the SEIR and the associated environmental review process for the proposed project are in full compliance with CEQA (California Public Resources Code, Sections 21000 et seq.) and the CEQA Guidelines.

As described in the SEIR Chapter 2 as augmented by RTC Section 13.3, the SEIR and the CEQA process have been prepared and conducted scrupulously consistent with the requirements of CEQA. The contents of the SEIR, including the RTC document, are fully consistent with all provisions of CEQA Guidelines Sections 15120 to 15132. The Final SEIR provides detailed responses to every substantive issue and concern submitted by the commenter (as well as to those submitted by numerous other commenters). The RTC document also includes detailed supporting analysis in supplemental technical appendices. In some cases, the responses presented in the RTC document instigated revisions to the Draft SEIR resulting in improved clarity in the Final SEIR (see RTC document Chapter 14). However, in no cases did any of the revisions to the Draft SEIR result in substantial changes to the analysis or conclusions of the Draft SEIR. Therefore, the Final SEIR, which is comprised of the Draft SEIR (published on June 5, 2015), the RTC document (published on October 23, 2015), and the errata (submitted to the OCII Commission on November 3, 2015), was appropriately certified by the OCII Commission on November 3, 2015. Furthermore, the environmental review process for the proposed project has been conducted fully consistent with CEQA Guidelines Sections 15080 to 15097, including all aspects of public notification, public and agency consultation, and public review. Evidence of the completion of all procedural requirements are included as part of the project's administrative record, which is posted online and available for public review at the following website: http://gsweventcenter.com/. Because these specific comments by the appellant are generalized statements, with the exceptions noted below, no further response supporting the adequacy of the SEIR and CEQA process is necessary. Specific comments submitted by the commenter on individual issues supporting its assertions of the SEIR's inadequacy are responded to individually in this Exhibit D under the relevant topic code.

Comment O-MBA20L7-1 asserts that the RTC responses "conflate and confuse" the steps in the impact analysis. This is a misstatement. The RTC document contains responses to issues raised on the Draft SEIR and provides clarification and augmentation of the impact analyses where appropriate. Consistent with CEQA requirements and as described in SEIR Section 5.1.2, the overall process used and presented in the SEIR impact analysis consists of the following: description of proposed project; summary of relevant portions of 1998 Mission Bay FSEIR; identification of existing conditions (setting); identification of relevant laws and regulations; identification of significance threshold; description of approach to analysis and methodologies; and impact evaluation of both direct and cumulative impacts. For significant or potentially significant impacts, the impact discussion identifies feasible mitigation measures. There is no "conflation" or "confusion" in the analysis or documentation of the environmental impacts of the proposed project as presented in the SEIR.

As specified in CEQA Guidelines Section 15131, "economic and social effects of a project shall not be treated as significant effects on the environment….. The focus of the analysis shall be on the physical changes." This is the exact approach that was used in the SEIR. If the commenter has issue with OCII's approval of the project and the adoption of CEQA Findings, which may consider social and economic considerations, please see Response to Late Comment ERP-3, below, regarding CEQA Findings.

Comment O-MBA20L7-1 also cites RTC response NOI-2a as an example of the commenter's assertions. The specific response to those assertions are addressed under Response to Late Comment NOI-1.

Comment O-MBA22B4-3 asserts that the RTC is inadequate and references a number of cases. The adequacy of the RTC document is addressed above, and the commenter accurately cites cases relevant for general standards for responses to comments.

Issues Raised by Late Commenters on Tiering

This response addresses all or part of the following comments, which are quoted below:

O-MBA16S6-1

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1. Tiering

The FSEIR attempts to justify the City's decision not to provide any analysis of about half of the topics normally addressed in an EIR. The FSEIR initially reviews the conditions under which tiering under CEQA Guidelines section 15152 is permissible. Under section 15151, subdivision (g), impacts must "have been examined at a sufficient level of detail in the prior [EIR] to enable those effects to be mitigated or avoided . . . ."

The FSEIR also points out that the 1990 and 1998 EIRs were program EIRs under CEQA Guidelines section 15168, and that reliance on program EIRs is permissible in certain circumstances. Significantly, the FSEIR claims that the current project is within the scope of the Mission Bay Plan that was previously analyzed. Comments by the Alliance and others establish that the Notice of Preparation ("NOP")/Initial Study ("IS") inappropriately scoped out impacts for which there was inadequate analysis in the previous documents.

The FSEIR claims that the current project is consistent with the Mission Bay South Plan and/or within the scope of the program EIRs certified for the Mission Bay area. Yet comments from the public establish that, contrary to the City's assertions, the proposed arena and event center is inconsistent with the Mission Bay South Plan and inadequately analyzed in the prior EIRs. As such, this case is similar to *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307, 1320-1321, where a proposed gravel operation was found not to be within the scope of the long-term plan, and that a tiered EIR was required.

The FSEIR also attempts to refute the applicability of the fair argument standard. This discussion overlooks the major differences between the project described in the 1998 FSEIR (evaluating effects of developing Mission Bay plan area as described in 1998) and the Warriors Event Center and Mixed Use Development now being proposed, make this a new project, precluding reliance on the 1990 and 1998 environmental analyses. (See *Sierra Club v. County of Sonoma, supra*, 6 Cal.App.4th at 1320-1321.) Under separate cover, the Alliance has submitted additional analysis explaining: (1) why the project is inconsistent with the Mission Bay South Plan and would require an amendment; and (2) alternatively, why a variance would be necessary to locate the project within the Mission Bay South Plan area.

The case of *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1113 did not address a situation such as this where tiering is attempted for a new project that is inconsistent with the previously analyzed project. Thus it cannot stand for the proposition that the

analysis in the NOP/IS of impacts that were not addressed would be subject to the substantial evidence standard. The simple inclusion of the NOP/IS in the DSEIR does not address this issue.

Even if the substantial evidence standard applies, public comments on the DSEIR demonstrate there are changes in circumstances since the 1998 SEIR involving, and significant new information showing, new significant effects not previously identified in the 1998 SEIR and substantial increases in the severity of significant effects that were previously identified in the 1998 SEIR. For example, biological resources exist on the site now that were not present in 1990 or 1998; thus, destruction of these resources creates a new, potentially significant impact. Similarly, contaminated soils are now present on the site due to backfilling that were not there previously. Construction and operation of the project would expose receptors to levels that exceed those levels that are considered safe. Similarly, seismic safety standards are completely different than in 1990 or 1998; moreover, the use proposed is a public assembly use, which was also not contemplated in 1990 or 1998.

Thus, the FSEIR improperly tiers from the 1990 and 1998 EIRs with respect to several resource areas, as described in Alliance and other public comments. This error defeats the public disclosure requirements of CEQA and misleads the public. In particular, if the 1990 and 1998 EIRs had actually analyzed the currently proposed project, there would be no need for the reams of new analysis presented by the City on these topics, none of which are within the four corners of the FSEIR. (*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-1]*)

Response to Late Comment ERP-2: Tiering

This comment addresses the extent to which OCII relied on the 1990 and 1998 Program EIRs, and the application of tiering principles. Please refer to Response 13.3.8 in the Final SEIR, RTC document for a detailed discussion of tiering as relevant to the SEIR.

As a preliminary matter, the commenter errs from a factual standpoint in asserting that the Final SEIR does not "provide *any* analysis of about half of the topics normally addressed in an EIR." (Emphasis added.) It is simply not true that the Final SEIR, or the Draft SEIR before it, completely ignored entire topics. Rather, the Final SEIR and Draft SEIR include analysis of each and every topic contemplated by CEQA, either in the text of the Draft SEIR or in the Appendix in Volume 3 that contains the Initial Study prepared for the project. Where the commenter suggests that no analysis of any kind was prepared, the commenter is simply ignoring the analysis found in the Initial Study, as though it does not exist. Not only does such analysis exist, often in very considerable detail, the analysis was included within the SEIR itself (in an appendix), and was circulated for public review and comment along with the analysis found in the text of the Draft SEIR and Final SEIR.

In short, the commenter attempts to elevate form over substance, and does not acknowledge the depth of analysis set forth in the Initial Study. (See *Citizens for a Sustainable Treasure Island v. City and County of San Francisco* (2014) 227 Cal.App.4th 1036, 1047-1048 ["courts strive to avoid attaching too much significance to titles in ascertaining whether a legally adequate EIR has been prepared for a particular project"; "'[t]he level of specificity of an EIR is determined by the nature of the project and the 'rule of reason' … rather than any semantic label accorded to the EIR'"]; accord *City of Irvine v. County of Orange* (2015) 238 Cal.App.4th 526, 539-40.)

Importantly, the Initial Study is a very robust and detailed document, as is evident from even a quick review. By itself, the Initial Study includes 145 pages of background information, new analysis, and supporting documentation. For example, the discussion of Land Use issues consumes 10 pages of dense text, and addresses specific topics such as "Physical Division of an Established Community," "Land Use Plan or Policies," "Existing Character of the Vicinity," and Cumulative Impacts. Similarly, the analysis of Biological Resources consumes nine pages of text, and addresses specific topics such as "Special Status Species," "Sensitive Natural Communities," "Wetlands," "Wildlife" (including the subtopics "Breeding Birds" and "Avian Collisions with Buildings and Night Lighting"), "Biological Resources Polices or Ordinances," and Cumulative Impacts. In turn, Appendix A to the Initial Study includes two Special Status Species Tables.

Notably, moreover, the analyses in the Initial Study and SEIR treat "existing conditions" as the starting point (the environmental baseline) for impact analysis, as would be required if the Draft SEIR and Final SEIR were prepared independently of the 1990 and 1998 Program EIRs (see SEIR Section 5.1.2). (See CEQA Guidelines, § 15125, subd. (a).) An example of this approach can be seen in the analysis of Biological Resources, and in particular on pages 79 through 81, which discuss Impact B1-2 ("The proposed project would not have a substantial adverse effect, either directly or through habitat modification, on any special status species"). That discussion recounts a recent "site reconnaissance" conducted on August 28, 2014, and describes site conditions as they existed on that date. Based on this very recent site visit, the authors found that the "lack of suitable habitat or supportive vegetation communities" made the site unsuitable for sustained use by any of the 75 special-status species that had been "determined to have a moderate or high potential to occur on the proposed project site." Had this analysis been included in the text of the Draft SEIR, rather than in an appendix, the commenter presumably would have acknowledged its existence. The fact that the commenter asserts that the analysis simply does not exist is further evidence of an argument in which form is elevated far over substance.

After having erroneously asserted that the FSEIR lacks "any analysis of about half of the topics normally addressed in an EIR," the commenter does acknowledge the existence of the Initial Study, but only long enough to state that the document "inappropriately scoped out impacts for which there was inadequate analysis in the previous documents" (i.e., the 1990 and 1998 EIRs). Again, the commenter wrongly treats the detailed analysis in the Initial Study as though it does not exist at all.

The CEQA Guidelines demonstrate that any EIR, whether tiered or not, may use an Initial Study to address impacts that are found not to be significant. Specifically, CEQA Guidelines section 15128 provides that "[a]n EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR. Such a statement may be contained in an attached copy of an Initial Study." (See *Eureka Citizens for Responsible Government v. City of Eureka* (2007) 147 Cal.App.4th 357, 376 [upholding a city's use of an initial study to determine a project's aesthetic impacts would not be significant and use of the Final EIR to

respond to comments on alleged aesthetic impacts].) Therefore, a lead agency that prepares an EIR (as OCII did here) may elect to address significant effects determined not to be significant in an attached copy of an Initial Study. (CEQA Guidelines, § 15128.) Neither CEQA nor any published decision suggests that the editorial decision authorized in CEQA Guidelines section 15128 concerning where to address such impacts (i.e., in the body of the EIR or an attached Initial Study) affects the standard of review applicable to the analysis. The commenter's suggestion that these editorial decisions have such an impact is inconsistent with the general proposition that CEQA should not be interpreted to "elevate form over substance or to interpret CEQA in a manner that would lead to such absurd or oppressive burdens." (*North Coast Rivers Alliance v. Westlands Water Dist.* (2014) 227 Cal.App.4th 832, 877-878.)

On the specific subject of land use, the commenter also contends that the proposed project is not consistent with the Mission Bay South Redevelopment Plan and/or within the scope of the 1990 and 1998 certified Mission Bay EIRs. This assertion ignores the detailed discussion found on pages 27 through 28, and 30 through 32 of the Initial Study – again, as though it simply did not exist. For an additional detailed discussion of the consistency of the proposed project with the Mission Bay South Redevelopment Plan, please see also Response to Late Comment PP-1 in Section 6 of this Exhibit D, the testimony at the OCII Commission's hearing on November 3, 2015,[21] and the OCII Commission's findings on this issue.[22] OCII found that the proposed project is consistent with the Mission Bay South Redevelopment Plan. Please see OCII Executive Director, *Secondary Use Determination- Blocks 29-32, Mission Bay South* (November 3, 2015).[23]

The commenter states that, because the proposed project is not consistent with the Mission Bay South Redevelopment Plan, the current circumstances are analogous to those at issue in *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307. The premise of this comment is incorrect. OCII has determined that the proposed project is consistent with the Mission Bay South Redevelopment Plan, as discussed in numerous places within OCII's administrative record, as noted above.

In support of the commenter's contention that OCII wrongly "scoped out" certain issues from the Draft SEIR, the commenter draws an analogy between the circumstances at issue in *Sierra Club v. County of Sonoma* decision and the current circumstances. Although, as noted above, this issue is mainly one of form rather than substance, it is nevertheless appropriate to provide a brief summary of what occurred in that case, and to explain why the current circumstances differ.

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[21] City and County of San Francisco, Office of Community Investment & Infrastructure Commission, 2015. *Special Meeting. Reporter's Transcript of Proceedings Re the Golden State Warriors Event Center and Mixed-use Development at Mission Bay South Blocks 29-32*. Tuesday, November 3, 2015.

[22] Office of Community Investment and Infrastructure, 2015. Secondary Use Determination. Applicant: GSW Arena LLC. Site: Blocks 29-32, Mission Bay South Redevelopment Project Area. November 3, 2015.

[23] Ibid.

In *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307, the respondent county certified a program EIR for a long-term plan to manage aggregate resources. The county later adopted a negative declaration, amended the plan, and approved a use permit so that a gravel operation could expand. The litigation focused not on the adequacy of the program EIR, but on whether the expanded gravel operation was within the scope of the long-term plan. Because the proposed gravel mine expansion was not within the geographic area covered by the long-term plan, the court held that the county had to analyze the proposed mine's impacts anew, and could not tier its analysis off the program EIR. (*Id*. at pp. 1320-1321.) For this reason, the "fair argument" standard applied to the challenge to the county's negative declaration. The record contained conflicting information on whether the expanded gravel operation would cause significant environmental impacts. The county therefore erred in relying on a negative declaration, and should have prepared an EIR. (*Id*. at pp. 1321-1323.)

Sierra Club v. County of Sonoma illustrates the review that must occur, and the standard of review that applies, when a developer proposes a project that is outside the geographic area of a resource management plan for which the agency certified a program EIR. Under those circumstances, the "fair argument" standard applies, and the agency cannot rely on a negative declaration where the record contains substantial evidence that the proposal may result in significant environmental effects.

By contrast, if an agency determines that a project is within the scope of a plan for which the agency certified a program EIR, then the "substantial evidence" test applies to the agency's review of the proposal, and to the agency's conclusions regarding whether the proposal's impacts have been adequately addressed in the program EIR. (CEQA Guidelines, § 15168, subd. (c); *Citizens for Responsible Equitable Environmental Development v. City of San Diego* (2005) 134 Cal.App.4th 598, 615; *Concerned Dublin Citizens v. City of Dublin* (2013) 214 Cal.App.4th 1301, 1316.) Subdivision (d)(3) of CEQA Guidelines section 15168 further states that "[a] program EIR can be used to simplify the task of preparing environmental documents on later parts of the program. The program EIR can … [f]ocus an EIR on a subsequent project to permit discussion solely of new effects which had not been considered before." That is the approach taken here by OCII.

In this instance, *Sierra Club v. County of Sonoma* is distinguishable for two reasons. First, as noted above, OCII determined that the proposed project is consistent with the Mission Bay South Redevelopment Plan. The project is located within the Mission Bay South Redevelopment Plan Area and OCII has determined that the use is a permitted use under the Plan and otherwise complies with the Plan. The premise of the *Sierra Club v. County of Sonoma* analysis therefore does not exist in this case. Second, and importantly, OCII has not relied on a negative declaration. Instead, OCII prepared and certified an SEIR. For this reason, the "fair argument" standard of review does not apply; rather, the "substantial evidence" test applies. (See *North Coast Rivers Alliance v. Marin Municipal Water Dist. Bd. of Directors* (2013) 216 Cal.App.4th 614, 626-627 [noting distinction between "fair argument" standard of review applicable to negative declarations and "substantial evidence" standard of review applicable to EIRs]; see also *Protect the Historic Amador Waterways v. Amador Water*

Agency (2004) 116 Cal.App.4th 1099, 1113 [conclusion that a proposed project will not have significant effects will be upheld if supported by substantial evidence]; see also *Eureka Citizens for Responsible Government v. City of Eureka* (2007) 147 Cal.App.4th 357, 376.)

The commenter states there are "changed circumstances" since 1998 that require further analysis. The commenter cites three examples of new information that has become available. The new information cited by the commenter consists of the following:

(1) Biological resources are present on the site that did not exist in 1998. OCII has investigated whether the project site contains significant biological resources that were not present in 1998 the presence of which would result in new significant impacts under CEQA. Based on this investigation, OCII has determined that the project will not have a significant impact on biological resources. The information provided by commenter and its consultants does not constitute new information that was not considered by OCII. For further information on this issue, please see RTC Section 13.19. In particular, with respect to the presence (or absence) of wetlands or sensitive habitat on the project site, please see RTC Sections 13.19.5 and 13.19.6. For additional information on biological resources, please see Response to Late Comment BIO-1 in Section 15 of this Exhibit D.

(2) Contaminated soils are present on the site due to backfilling that occurred after 1998. This issue is discussed at length in RTC Section 13.22.4. The applicant has performed a Phase II investigation that characterizes the presence of any currently existing hazardous materials at the site, which would address any soils added to the site since 1998. Compliance with the Mission Bay Risk Management Plan and Article 22A of the San Francisco Health Code (Maher Ordinance), as well as San Francisco Health Code Article 22B (Construction Dust) will avoid potential impacts associated with the presence of hazardous materials at the site. In accordance with those existing requirements, the applicant has submitted a Site Mitigation Plan and a Dust Monitoring Plan to demonstrate how the site will be managed to avoid significant impacts associated with the presence of hazardous materials during project construction and operation. The City Health Department has reviewed and approved these plans as in compliance with Article 22A and Article 22B. For additional information, please see Response to Late Comment HAZ-1 in Section 18 of this Exhibit D.

(3) Seismic safety standards have changed since 1998, particularly with respect to uses that involve public assemblies. This issue is discussed at length in RTC Section 13.20.2. This response identifies the seismic standards with which the event center and other building plans must comply. Compliance with these standards will be determined by the San Francisco Department of Building Inspection based on a site-specific geotechnical evaluation required by the latest California Building Code requirements. Compliance with these requirements will ensure that seismic hazards are addressed. For additional information on geologic hazards, including seismicity, please see Response to Late Comment GEO-2 in Section 16 of this Exhibit D.

The comment letter states that "major differences" between the project described in the 1998 Mission Bay FSEIR and the proposed project preclude reliance on the 1990 and 1998 Program EIRs. This statement does not accurately reflect the approach taken in the Initial Study/Notice of Preparation (IS/NOP). The purpose of the IS/NOP is to address each resource area (air quality, biological resources, etc.), and to determine whether there is

anything about the proposed project that would give rise to the potential for physical environmental effects that have not previously been adequately addressed. Thus, for example, the IS/NOP determined that the proposed project may result in traffic impacts that were not anticipated in the 1990 and 1998 Mission Bay EIRs. For this reason, the SEIR contains extensive analysis of traffic impacts. (See IS/NOP, p. 58.) In other resource areas, the impacts of the proposed project are comparable to those that would occur in the event the project site is developed for the typical commercial or industrial uses envisioned in the Mission Bay South Redevelopment Plan, such as office buildings. An example would be impacts with respect to the presence of hazardous materials; those impacts would occur for any project involving construction activities, and would occur regardless of whether an event center or an office building is constructed on the site. In those instances, the IS/NOP explains why those impacts would not result in any new significant impacts or increase the severity of previously identified impacts. (See IS/NOP, pp. 111-115.)

The commenter states that OCII has relied on extensive information that is not located in the Final SEIR. CEQA does not preclude an agency from considering information that is not within the EIR itself. Rather, an agency's conclusions are based on the entire record before the agency, including (but not limited to) the EIR. (Pub. Resources Code, § 21082.1, subd. (a).) In this case, the Final SEIR includes citations to other documents relied upon in the preparation of the analysis. Because the proposed project is subject to AB 900, the cited documents have also been posted to the web page maintained by OCII. Thus, the public has been provided access to both the Final SEIR and to the documents cited therein.

Issues Raised by Late Commenters on CEQA Findings

This response addresses all or part of the following comments, which are quoted below:

O-MBA22B4-9	O-MBA24L9-6	O-MBA24L9-7	O-MBA24L9-8
O-MBA27S9-3	O-MBA27S9-6	O-MBA28L11-2	

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3. The Proposed Findings on Alternatives are Inadequate

The SEIR does not analyze the alternate site proposed by the Alliance near Pier 80, nor circulate that analysis for public comment and so has no basis to make conclusory findings rejecting the alternative. The reasons provided in OCII's proposed findings are unsupported and inadequate. The site is three times as large as would be required for the Event Center project and need not utilize any of the City-owned property nor any particular configuration of the privately-owned lots should there be an unwilling seller. There is no evidence provided that the site could not be acquired within a reasonable time period.

Further, case law confirms that potential zoning adjustments are not grounds for infeasibility, as they are within the City's power. It is self-evident that the claimed limits to transportation services under current schedules are easily remedied, and the findings do not provide any studies to back up conclusory statements regarding traffic, air quality, hydrology, or water quality impacts. Again, since only a third of the site is needed to accommodate the event center, all of the impacts (if shown to have concern after sufficient technical review) can be avoided or mitigated. As stated above and in

the Alliance letter proposing this site for consideration as an alternative, the EIR is inadequate for failing to consider an off-site alternative and must be revised and recirculated to do so before any findings of infeasibility can be made. The site near Pier 80 is suggested by the Alliance as potentially feasible and deserving of study. (*Mission Bay Alliance, Susan Brandt-Hawley, letter, November 3, 2015 [O-MBA22B4-9]*)

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4. CEQA Findings: General

The Commission cannot make any CEQA findings required by CEQA section 21081 or CEQA Guidelines 15091, 15093, 15096(f), because the Project SEIR does not comply with CEQA and is not certifiable, for the reasons described in the Alliance's comments on the SEIR. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 5, 2015 [O-MBA24L9-6]*)

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5. CEQA Findings: BAAQMD.

The Commission cannot find that "Impact AQ-4: Potential conflicts with BAAQMD's 2010 Clean Air Plan" is less than significant with mitigation because the City and Project Sponsor refuse to agree to BAAQMD's offset fees per Mitigation Measure M-AQ-2b. (See Exhibits 4 and 5.) There is also no evidence that the "Option 2" offset idea within Mitigation Measure M-AQ-2b is feasible. There are too many unanswered questions regarding Option 2, including lack of assured verification of offsets to ensure their effectiveness, and lack of assurance that offset sources are available in the quantity required. BAAQMD's offset program at least answers some, if not all, of these questions.

The Commission cannot find that all feasible mitigation measures that would substantially reduce "Impact AQ-1: Impacts of Criteria Air Pollutants from Construction" have been adopted as required by CEQA section 21081, because there is no evidence that paying the offset fees demanded by BAAQMD is infeasible. Also, as discussed above, there is no evidence that the "Option 2" offset idea within Mitigation Measure M-AQ-2b is feasible; therefore, it is not an adequate substitute for BAAQMD's offset program. This also applies to

- Impact AQ-2: Impacts of Criteria Air Pollutants from Project Operations"; Impact C-AQ-1: Project Contribution to Regional Air Quality Impacts;
- Impact C-AQ-1: Project Contribution to Regional Air Quality Impacts.

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 5, 2015 [O-MBA24L9-7]*)

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6. CEQA Findings: Pier 80 Alternate Site.

The Commission cannot find that feasible alternatives that would substantially reduce the Project's significant impacts have been adopted. The SEIR does not analyze the alternate site proposed by the Alliance near Pier 80, and did not circulate that analysis for public comment. Neither OCII nor this Commission has the basis to make conclusory findings rejecting the alternative. Among the relevant facts not considered in the findings is that the site is three times as large as would be required for the Event Center project and need not utilize any of the City-owned property nor any particular configuration of the privately-owned lots should there be an unwilling seller. There is no evidence provided that the site could not be acquired within a reasonable time period.

Case law confirms that assuring a site's consistency with city plans and zoning is within the City's power. Similarly, the scheduling of transportation services to the site can be increased, and the findings provide no studies to back up conclusory statements regarding traffic, air quality, hydrology, or water quality impacts. Since only a third of the site is needed to accommodate the event center, all of the impacts (if shown to have concern after sufficient technical review) can be avoided or

mitigated. As stated in the Alliance letter to OCII that proposes this site for consideration as an alternative, here incorporated by reference, the SEIR failed to consider a potentially-feasible off-site alternative and must be revised and recirculated to do so before findings of infeasibility may be considered or adopted. The site suggested by the Alliance is potentially feasible and deserving of study. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 5, 2015 [O-MBA24L9-8]*)

The CEQA findings adopted by the San Francisco Municipal Transportation Agency ("MTA") and being considered by this Commission are premature and unsupported, as explained in the Alliance's comments on the Draft Subsequent Environmental Impact Report ("DSEIR"), as well as letters submitted following the Final SEIR by this office and by Alliance co-counsel Thomas Lippe and Susan Brandt-Hawley. (*Mission Bay Alliance, Soluri Meserve, letter, November 10, 2015 [O-MBA27S9-3]*)

The Alliance requests that the Commission decline to make CEQA findings and decline to approve the Place of Entertainment Permit. (*Mission Bay Alliance, Soluri Meserve, letter, November 10, 2015 [O-MBA27S9-6]*)

The CEQA findings adopted by the OCII and the SFMTA are, therefore, premature and unsupported, as explained in the Alliance's comments on the Draft Subsequent Environmental Impact Report ("DSEIR"), as well as letters submitted following the Final SEIR. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 9, 2015 [O-MBA28L11-2]*)

Response to Late Comment ERP-3: CEQA Findings

These comments all relate to the OCII Commission's action to adopt the CEQA Findings in connection with the proposed project (OCII Resolution 70-2015, November 3, 2015).

Comment O-MBA22B4-9 and Comment O-MBA24L9-8

The commenter states that the SEIR is inadequate because the SEIR does not analyze an alternative site near Pier 80 proposed by the Mission Bay Alliance (MBA). The commenter is incorrect. First, the MBA submitted its request to OCII regarding the site near Pier 80 long after the close of the scoping period (over 9 months later) and well after the close of the public comment period on the Draft SEIR (over 2 months later). A lead agency may, although is not obligated to, respond to untimely comments. (Pub. Resources Code, § 21091, subd. (d)(1); CEQA Guidelines, § 15088, subd. (a); *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1110; see also *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 234 Cal.App.4th 214, 257-258 ["an EIR need only 'identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination'"].) Similarly, CEQA does not require a lead agency to make findings concerning the rejection of alternatives proposed after the close of the public comment period. (*South County Citizens for Smart Growth v. County of Nevada* (2013) 221 Cal.App.4th 316, 332-335 (*South County Citizens*).) Second, "CEQA does not require that an agency consider specific alternatives that are proposed by members of the public or other outside agencies. Rather, the EIR need only

discuss 'a range of reasonable alternatives.'" (*City of Maywood v. Los Angeles Unified School Dist.* (2012) 208 Cal.App.4th 362, 420-421.) Please also see Response to Late Comment ALT-1 in Section 19 of this Exhibit D for further discussion on the MBA-proposed site near Pier 80.

Nevertheless, OCII analyzed the MBA's proposed alternative. A memorandum from OCII staff and the Planning Department evaluated the site and detailed why it was not a feasible alternative. (See Sally Oerth, OCII, and Chris Kern, SF Planning Department, Letter to Tiffany Bohee, Re: Proposed Alternative at Pier 80, October 27, 2015 [hereafter, "Staff Memo"].) This analysis and its conclusion were further reflected in OCII's CEQA Findings. As the Staff Memo and CEQA Findings demonstrate, OCII relied on numerous reasons, each of which provide "sufficient independent grounds for rejecting this alternative location" as infeasible. (OCII CEQA Findings, p. 73, see also, Staff Memo.) The Staff Memo and OCII's CEQA Findings also explain that the MBA-proposed site near Pier 80 is similar to the Pier 80 or India Basin alternative site location identified in the SEIR, and the MBA-proposed site is infeasible for many of the same reasons discussed in Draft SEIR for the Pier 80 or India Basin site alternative. (Staff Memo, pp. 5-6; OCII CEQA Findings, p. 71; Draft SEIR, p. 7-113; see *Town of Atherton v. California High-Speed Rail Authority* (2014) 228 Cal.App.4th 314, 323 [rejecting the need for a lead agency to analyze an alternative that was "substantially similar to those already studied"]; see also *North Coast Rivers Alliance v. Marin Municipal Water Dist. Bd. of Directors* (2013) 216 Cal.App.4th 614, 655-656 [rejecting the need to recirculate an EIR to address an alternative that was neither considerably different from alternatives analyzed in the Draft EIR nor feasible]; *South County Citizens*, *supra*, 221 Cal.App.4th at pp. 328-332; *Beverly Hills Unified School Dist. v. Los Angeles County Metropolitan Transportation Auth.* (2015) – Cal.App.4th – [slip op. pp. 44-48].) OCII's infeasibility findings are entitled to great deference and are presumed correct. (*Town of Atherton*, *supra*, 228 Cal.App.4th at p. 358.)

In a brief two-paragraph argument, the commenter challenges a few of the reasons addressed in OCII's CEQA Findings.

First, the commenter states there is no evidence that the site, or a sufficient portion of it, could not be acquired within a reasonable period of time. OCII disagrees. As explained in the Staff Memo and OCII's CEQA Findings, the MBA-proposed site near Pier 80 is made up of approximately 12 separate lots owned by multiple public and private entities. In total, the site is approximately 21 acres. Acquiring a sufficient number of acres of the site to develop the proposed project (~10 acres) would require obtaining control of numerous lots owned by multiple entities that are each actively used by public facilities or existing businesses. The publicly owned lots are occupied by ongoing and expanding operations by SFMTA. SFMTA has been in the process of planning for, and incrementally acquiring these properties for its Islais Creek facility, since 1990. The $129 million project is being constructed in two phases: Phase I, which was completed in 2013, consisted of site preparation and construction of a new fuel and wash building, as well as bus parking facilities; Phase II, which recently broke ground at the southeast corner of the site, will include a maintenance and operations building with vehicle hoists to service buses, a brake shop, parts storeroom, administrative offices, and a community meeting space. Once complete, the Islais Creek facility will be

among SFMTA's largest facilities, capable of storing and servicing at least 165 buses and facilitating 300 employees, with 24/7 operations. Because the Islais Creek facility will replace older, outdated, or temporary SFMTA facilities, and will accommodate such a significant portion of SFMTA's fleet, these properties are considered "critical" to SFMTA's mission. The Port-owned property (1399 Marin Street, at the southeast corner of Marin and Indiana Streets) is too small to accommodate even just the Event Center portion of the proposed project. Therefore, OCII found that it would be infeasible to use these public lots to develop the proposed project.

The project sponsor does not currently own or control any of the private lots, which are owned by multiple property owners and are not listed for sale. These privately owned properties, which collectively account for a little more than 7 total acres arranged in a "L" shape, are also too small and disjointed to accommodate the proposed project. Thus, OCII found the MBA-proposed site properties could not be assembled in a successful manner by the project sponsor within a reasonable period of time taking into account existing development on the site as well as economic, legal, and environmental factors. (See CEQA Guidelines, § 15126.6, subd. (f)(1) [stating that, in considering the feasibility of alternatives, a lead agency may consider "whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)"].)

Second, the commenter suggests that it was improper for OCII to consider consistency with city plans and zoning in findings the alternative to be infeasible. CEQA permits a lead agency to take such factors into consideration. "[A]n EIR is not ordinarily an occasion for the reconsideration or overhaul of fundamental land-use policy." (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 573.) Therefore, a lead agency "may properly consider an inconsistent land-use designation in the general plan … in assessing the feasibility of a project alternative." (*Ibid*.; see also CEQA Guidelines, § 15126.6, subd. (f)(1) [stating that, in considering the feasibility of alternatives, a lead agency may take "general plan consistency, other plans or regulatory limitations, [and] jurisdictional boundaries" into consideration].)

Third, the commenter states OCII's conclusions regarding the potentially significant environmental impacts associated with developing the proposed project on the MBA-proposed alternative site are not supported by substantial evidence. As already noted, the Draft SEIR considered an alternative site in the Pier 80 or India Basin Area. (Draft SEIR, p. 7-113.) This alternative site was rejected, in part, because Pier 80 is less well served by Muni and therefore transportation and associated air quality and noise impacts would likely be the same or potentially more severe than those under the proposed project. As discussed in the Staff Memo and CEQA Findings, this substantial evidence also supports rejection of the MBA-proposed site, which is located across Third Street from Pier 80. Further, OCII consulted with its environmental consultants in evaluating potential environmental impacts of the alternative site. Based on its consultants' expertise, OCII determined that the MBA-proposed site near Pier 80 would likely result in increased transportation, air quality, and hydrology and water quality impacts compared to the proposed project. These additional

environmental impacts result, in part, from the site's location, which offers more limited transit and bicycle access than the project site, is included in an Air Pollution Exposure Zone (unlike the project site), and is directly adjacent to Islais Creek Channel thereby increasing the potential to result in adverse impacts on water quality and aquatic resources.

For these and the other independent reasons identified in the Staff Memo and OCII's CEQA Findings, OCII properly determined that the MBA-proposed site near Pier 80 is infeasible. As the MBA's late-submitted additional alternative is infeasible, CEQA would not have required the alternative to be included in the SEIR even if it were timely submitted during the public comment period. (*City of Maywood*, *supra*, 208 Cal.App.4th at p. 413 ["An EIR is not required to consider alternatives which are infeasible"], quoting CEQA Guidelines, § 15126.6, subd. (a).)

Comments O-MBA24L9-6, O-MBA27S9-3, O-MBA27S9-6, and O-MBA28L11-2

The commenter asserts that City's Responsible Agency CEQA findings fail to comply with CEQA because the project's SEIR does not comply with CEQA. All comments raised by this commenter and others on behalf of the MBA have been responded to as part of the administrative process associated with OCII's approval of the project, actions taken by the City as a responsible agency, and in response to the appeal of OCII's certification of the SEIR authorized by OCII to be filed with the Board of Supervisors. An assertion that CEQA findings are flawed because the SEIR is flawed constitutes a challenge to the adequacy of the SEIR rather than any specific alleged challenge to the findings and, as such, "has no independent merit." (*Habitat & Watershed Caretakers v. City of Santa Cruz* (2013) 213 Cal.App.4th 1277, 1307.)

More importantly, a responsible agency has no obligation to consider the adequacy of an EIR that has already been certified by a lead agency, but rather is expected to accept the document as legally adequate unless the document requires supplementation due to the occurrence of recognized grounds triggering supplemental review. (See CEQA Guidelines, § 15096, subds. (a), (e)(2), (f); and *City of Redding v. Shasta County Local Agency Formation Commission* (1989) 209 Cal.App.3d 1169, 1178-1181.) The only exception is where the responsible agency itself chooses to sue the lead agency over EIR certification within the applicable 30-day statute of limitations. (CEQA Guidelines, § 15096, subd. (e)(1).) Furthermore, no responsible agency, including the City, has objected either to OCII's certification of the Final SEIR or its actions approving the project, and no responsible agency has filed an appeal of OCII's action certifying the Final SEIR. The commenter is directed to the responses to substantive comments on adequacy of the SEIR. No further response is required to this comment.

Comment O-MBA24L9-7

The commenter states that the OCII cannot make CEQA findings because Impact AQ-4 is identified as less than significant with mitigation, based in part on implementation of Mitigation Measure M-AQ-2b, which the commenter asserts is inadequate. The commenter states that Mitigation Measure M-AQ-2b is inadequate because OCII, the City, and the

project sponsor refused to agree to BAAQMD's proposed offset fee. Mitigation Measure M-AQ-2b also provides another option under which the project sponsor may implements offset project(s) as an alternative to paying BAAQMD an offset fee. The commenter asserts without any supporting evidence that this second option is infeasible. OCII disagrees, and maintains that Mitigation Measure M-AQ-2b is feasible for the reasons described below (see also Response to Late Comment AQ-1 in Section 10 of this Exhibit D).

The comment is incorrect that the project sponsor and City have refused to pay the BAAQMD offset fee. The record establishes that OCII, the City, the project proponent, and the BAAQMD are involved in ongoing discussions regarding the fee amount necessary to offset ozone precursor emissions. The fee amount originally suggested in the SEIR was established in considerations of California Air Resources Board records for emission reduction offset transaction costs and Carl Moyer Memorial Air Quality Standards Attainment Program ("Carl Moyer Program") cost effectiveness standards. Specifically, the median (average) offset transaction cost per ton of hydrocarbon (analogous to ROG) and NOx in the Bay Area in 2014 was approximately $7,000 and $14,500 respectively. The cost effectiveness standard for the statewide Carl Moyer Program is $18,030. OCII and the City believe this data constitutes substantial evidence supporting the amount reasonably necessary to offset a ton of emissions. The SEIR utilized the higher Carl Moyer Program cost effectiveness standard amount ($18,030 per ton) as the amount anticipated to offset the project's ozone precursor emissions. This approach was conservative, in that it represents the highest figure based on available data regarding the cost of providing such offsets.

The BAAQMD does not have an ozone precursor offset purchasing program for development projects. However, BAAQMD has suggested that for it to implement a program, the cost to offset project emissions will exceed the amount determined to be cost effective under the Carl Moyer Program. In response to BAAQMD's November 2, 2015, comment letter, staff recommended, and the OCII Commission approved, an amendment to Mitigation Measure M-AQ-2b. As revised, Mitigation Measure M-AQ-2b provides:

> Upon completion of construction, and prior to issuance of certificate of occupancy, the project sponsor, with the oversight of OCII or its designated representative, shall either:
>
> 1) Pay a mitigation offset fee to the Bay Area Air Quality Management District's (BAAQMD) Strategic Incentives Division in ***an amount no less than*** $18,030 per weighted ton of ozone precursors per year requiring emissions offsets plus a 5 percent administrative fee to fund one or more emissions reduction projects within the San Francisco Bay Area Air Basin (SFBAAB). This fee is intended to fund emissions reduction projects to achieve reductions of 17 tons of ozone precursors per year, the estimated tonnage of operational and construction-related emissions offsets required. Documentation of payment shall be provided to OCII or its designated representative.
>
>   The project sponsor shall provide calculations to the satisfaction of OCII or its designated representative of the final amount of emissions from construction

activities based on the reporting requirements of Mitigation Measure M-AQ-1, which shall consider the final destination of off-hauled soil and construction waste materials by on-road trucks, contributions from Electrical Power Distribution System Expansion, and the degree of compliance with off-road equipment engine types that were commercially available. If the calculated construction emissions of ozone precursors require offsets in excess of 17 tons per year, then the applicant shall provide the additional offset amount commensurate with the calculated ozone precursor emissions exceeding 17 tons per year.

Acceptance of this fee by the BAAQMD shall serve as an acknowledgment and commitment by the BAAQMD to: (1) implement an emissions reduction project(s) within one year of receipt of the mitigation fee to achieve the emission reduction objectives specified above; and (2) provide documentation to OCII or its designated representative and to the project sponsor describing the project(s) funded by the mitigation fee, including the amount of emissions of ROG and NOx reduced (tons per year) within the SFBAAB from the emissions reduction project(s). If there is any remaining unspent portion of the mitigation offset fee following implementation of the emission reduction project(s), the project sponsor shall be entitled to a refund in that amount from the BAAQMD. To qualify under this mitigation measure, the specific emissions retrofit project must result in emission reductions within the SFBAAB that would not otherwise be achieved through compliance with existing regulatory requirements; or

2) Directly implement a specific offset project to achieve reductions of 17 tons per year of ozone precursors (or greater as described in item 1 above). To qualify under this mitigation measure, the specific emissions retrofit project must result in emission reductions within the SFBAAB that would not otherwise be achieved through compliance with existing regulatory requirements. Prior to implementation of the offset project, the project sponsor must obtain OCII's approval of the proposed offset project by providing documentation of the estimated amount of emissions of ROG and NOx to be reduced (tons per year) within the SFBAAB from the emissions reduction project(s). The project sponsor shall notify OCII within six months of completion of the offset project for OCII verification.

(Emphasis Added.)

The revision to Mitigation Measure M-AQ-2b clarifies that the amount of the BAAQMD offset fee is not capped. The fee required under Option 1 will be the fee determined by BAAQMD if and when the project proponent seeks to pay the fee under this first option. While the precise fee is not set by Mitigation Measure M-AQ-2b, the measure requires the fee to be no less than $18,030 per weighted ton of ozone precursors and an amount sufficient "to fund emission reduction projects to achieve reductions of 17 tons of ozone precursors per year." Pursuant to Mitigation Measure M-AQ-2b, the fee is not due until after completion of construction and after total construction emission have been calculated to confirm the emissions do not exceed 17 tons. Given that construction is anticipated to take approximately 26 months (Draft SEIR, p. 3-46), it is appropriate for the precise fee per ton to be calculated by BAAQMD in the future. While the final amount of the fee will be determined in the future, substantial evidence demonstrates that emissions can be offset

through implementation of an appropriate fee amount established by BAAQMD. The comments by both BAAQMD and this commenter support this conclusion. For example, BAAQMD's November 2, 2015 letter, page 1, states that 17 tons of precursor emissions (i.e., 4.4 tons for ROG and 12.6 tons of NOx) can be offset through the payment of $620,922. Similarly, the Comment O-MBA24L9-7 states BAAQMD offset mitigation is feasible mitigation. In the event this option is implemented, based on current information in the SEIR and from the BAAQMD, the fee paid to BAAQMD will be in the range of $321,835 to $620,922. (Both figures include an administrative fee of 5 percent; the sole difference in the totals is the cost per ton.) This option requires BAAQMD agreement on the amount of the offset fee.

As an alternative to paying BAAQMD offset fee, Mitigation Measure M-AQ-2b authorizes the project proponent to "[d]irectly implement a specific offset project to achieve reductions of 17 tons per year of ozone precursors…" There is nothing novel about air quality offsets, which are commonly purchased throughout areas of California in which existing ambient air quality is polluted enough to require new development projects to seek ways to mitigate expected increases in air pollution. Notably, successful air quality offset projects have previously been implemented within the City. For example, the 34th America's Cup and James R. Herman Cruise Terminal and Northeast Wharf Plaza Project EIR required construction of a long-term shoreside power facility to be developed at the Port's dry dock facility at Pier 70 to offset the project's emissions.[24] This facility provides electrical grid power for ships brought in for unscheduled maintenance, eliminating the need for auxiliary loads to be supplied by on-board diesel generators, which emit much greater amounts of air pollutants. Estimated reductions for year 2013 were 11 tons of reactive organic gases (ROG), 215 tons of nitrogen oxides (NOx), and 6 tons per year of particulate matter (PM_{10} and $PM_{2.5}$). The shoreside power facility offset project has since been successfully implemented, and continues to provide emissions reductions. Notably, the State of California has recently formulated an approach to offsets similar to the one proposed for this project, by which the project sponsor could either purchase offsets through an existing air district program or, as an alternative, could purchase its own offsets through an open-market transaction. [25] Therefore, abundant substantial evidence supports the conclusion that offset projects can be successfully implemented to offset emissions. Furthermore, should the project sponsor desire to comply with Mitigation Measure M-AQ-2b by implementing a specific offset project under option two, the project must first be approved by OCII in order to verify the amount of the offset that will be achieved by implementing the offset project.

Under either option included in Mitigation Measure M-AQ-2b, the project sponsor must achieve reductions of no less than 17 tons of ozone precursors per year, the estimated tonnage of operational and construction-related emissions offsets required for the project.

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[24] San Francisco Planning Department, 2011. *Final EIR on the 34th America's Cup & James R. Herman Cruise Terminal and Northeast Wharf Plaza.* Case No. 2010.0493E. State Clearinghouse No. 2011022040. Certified on December 15, 2011. See Vol. 6, Section 12.13, page 12.13-37.

[25] Department of Water Resources, December 2013, *Draft EIR/EIS for Bay Delta Conservation Plan*, pp. 22-52 – 22-56. State Clearinghouse No. 2008032062.

The mitigation measure further provides that the measure must be implemented after "completion of construction" and "prior to issuance of the certificate of occupancy." Therefore, certificates of occupancy will not be issued until the project proponent has paid BAAQMD's offset fee or directly implemented an offset project(s) approved by OCII to offset no less than 17 tons of ozone precursors per year. While it is anticipated that direct offset projects will be available to achieve this offset, if such offset projects are not available, then the project proponent would need to pay the offset fee required by BAAQMD in order to obtain certificates of occupancy. Therefore, the mitigation measure is enforceable and ensures project operations will not commence until project emissions have been offset.

In sum, based on the above, OCII believes Mitigation Measure M-AQ-2b is feasible and would reduce identified construction and operational air quality impacts described in SEIR Impacts AQ-1, AQ-2, and C-AQ-1.

The commenter asserts that Impact AQ-4 cannot be considered less than significant with mitigation because of the commenter's misinterpretation of the City and project sponsor's discussions with the BAAQMD regarding option 1 of Mitigation Measure M-AQ-2b and his assumption that option 2 of Mitigation Measure M-AQ-2b is infeasible. As described above, OCII, the City, the project sponsor, and the BAAQMD are involved in ongoing discussions regarding the fee amount necessary to offset ozone precursor emissions. The fee required under option 1 will be the fee determined by BAAQMD if and when the project sponsor seeks to pay the fee under this first option. Also, as described above, option 2 is clearly feasible, even though no specific offset emissions has been identified yet. Impact AQ-4 relates to the potential for the proposed project to conflict with, or obstruct implementation of, the *2010 Clean Air Plan*. The Final SEIR determined that this impact would be less than significant with mitigation because the project (1) includes mitigation measures that promote attainment of air quality standards and protection of public health in the Bay Area, and design measures to minimize greenhouse gases emissions; (2) includes applicable control measures from the air quality plan, including transportation control measures and energy and climate control measures; and (3) would not disrupt or hinder implementation of control measures identified in the Clean Air Plan. The proposed project includes feasible mitigation measures that would contribute towards achieving these goals, including Mitigation Measures M-AQ-1 (Construction Emissions Minimization), M-AQ-2a (Reduce Operational Emissions), and M-AQ-2b (Emissions Offsets). Therefore, this impact is appropriately determined to be less than significant with mitigation.

Issues Raised by Late Commenters on Public Comment

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-2 PH2-Lippe-3

General Comment 2. The October 23, 2015, notice of publication of the Response to Comments informed the public they would have no further opportunity to comment on the FSEIR/RTC. But the OCII hearing agenda for November 3, 2015 published on October 29, 2015, suggests that public comment on the FSEIR/RTC will be heard at the hearing. The October 23, 2015, notice of publication is inconsistent with CEQA section 21177(a), which contemplates public comment on EIRs up to the end of the hearing at which the project is approved. Therefore, the October 23, 2015, notice of publication has frustrated the ability of the public to comment. The OCII should remedy this misstep by continuing its November 3, 2015, hearing on this Project and re-noticing the hearing with full disclosure that the public may comment on the FSEIR/RTC. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-2]*)

And just on that point, we only had 11 days after your staff of 58 people had two months. (*Thomas N. Lippe, Transcript, November 3, 2015 [PH2-Lippe-3]*)

Response to Late Comment ERP-4: Public Comment

The commenter expresses confusion over the process for public comment on the Final SEIR and the RTC document. As stated in the OCII notice of publication of the RTC document, CEQA does not require a hearing to receive comments on the RTC document, and OCII Commission elected not to conduct a public hearing expressly for the purpose of receiving comments on the RTC document. However, as a matter of course, the OCII Commission meetings are open to the public, and at these meetings, the public is afforded the opportunity to make pertinent comments on any of the agenda items for that particular meeting. Therefore, as part of the November 3, 2015 OCII Commission meeting, there was an opportunity for public comment on any of the agenda items, including certification of the Final SEIR. OCII has thus fulfilled its obligation to provide an opportunity for public comment, and re-noticing of the hearing is not warranted. See also the earlier response to Comment O-MBA21L8-1.

Issues Raised by Late Commenters on SEIR Certification

This response addresses all or part of the following comments, which are quoted below:

O-MBA22B4-2

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1. The Final SEIR Must Be Certified by the Planning Commission

Approval of a CEQA document must comply with local ordinances as well as with California environmental law. (E.g., Citizens for the Restoration of *L Street v. City of Fresno* (2014) 229 Cal.App.4th 340.) While OCII is a separate legal entity with discrete responsibilities under redevelopment law, it is under the legislative control of the Board of Supervisors per state statutes and local ordinances. For CEQA purposes, OCII's duties align with those of the City of San Francisco. The Planning Department was thus identified as a co-lead agency in the CEQA process for the 1998 Mission Bay South Redevelopment Plan.

CEQA is a process-driven statute that must be followed to the letter. The Event Center's Subsequent EIR reflects its preparation by the City Planning Department and the City will consider many of the Event Center's required approvals. If the current SEIR is certified, the Board of Supervisors will decide administrative appeals of its inadequacy as the elected decision-making body. The Planning Code requires initial consideration of the certification of the Final SEIR to be conducted by the San Francisco Planning Commission, and that must happen before its consideration by OCII. The current process violates CEQA. (*Mission Bay Alliance, Susan Brandt-Hawley, letter, November 3, 2015 [O-MBA22B4-2]*)

Response to Late Comment ERP-5: SEIR Certification

The commenter asserts that the San Francisco Planning Commission must review the Final SEIR. The commenter is mistaken. As acknowledged by the commenter, "OCII is a separate legal entity with discrete responsibilities under the redevelopment law." (Brandt-Hawley Comment Letter, p. 1. But commenter is incorrect that "For CEQA purposes, OCII's duties align with those of the City of San Francisco." Under Health & Safety Code, § 34173, subd. (g), "[a] successor agency is a separate public entity from the public agency that provides for its governance and *the two entities shall not merge*." (Emphasis added.) As a separate legal entity from the City and County of San Francisco, OCII properly prepared, reviewed, and certified the Final SEIR for the GSW Event Center Project, a project in a redevelopment plan area for which the California Department of Finance ("DOF") has finally and conclusively determined completion of the Mission Bay South Owner Participation Agreement to be an enforceable obligation pursuant to the Redevelopment Dissolution Law. (See Letter, J. Howard, DOF, to T. Bohee, OCII, Re: Request for Final and Conclusive Determination (Jan. 24, 2014), available at http://www.dof.ca.gov/redevelopment/final_and_conclusive/Final_and_Conclusive_Letters/documents/San_Francisco_F&C_EO_Items_84-88_220_&_226.pdf.)

The commenter points out that the 1998 Redevelopment Plan for the Mission Bay South Redevelopment Project ("Plan") was jointly certified by the Planning Commission and the San Francisco Redevelopment Agency. But, under California Redevelopment Law, the Board of Supervisors had to approve the establishment of a redevelopment area and new redevelopment plan. (See Health & Safety Code, §§ 33007, 33346, 33351.) Once the ordinance approving the Plan was adopted and filed, the Redevelopment Agency was "vested with the responsibility for carrying out the plan." (Health & Safety Code, § 33372; see also SF Ordinance No. 335-98, § 6 (Nov. 2, 1998) (stating that "the Redevelopment Agency shall be vested with the responsibility for carrying out the [Mission Bay South] Redevelopment Plan").) Under the California Environmental Quality Act ("CEQA"), this statutory authorization to carry out the Plan established the Redevelopment Agency as the lead agency for purposes of implementation. (CEQA Guidelines, § 15051, subd. (a).)

Under Redevelopment Dissolution Law, Health & Safety Code § 34170 et seq., successor agencies "succeed[ed] to the organizational status of the former redevelopment agency" to complete approved enforceable obligations. (Health & Safety Code, § 34173, subd. (g).) Although the dissolution of redevelopment agencies precludes the establishment of new redevelopment areas, the Redevelopment Dissolution Law provides successor agencies with

the state authority to implement redevelopment plans for the purpose of completing those projects that survived the dissolution process. The Board of Supervisors, acting as the governing body of the separate legal entity that is the successor agency to the former San Francisco redevelopment agency, has delegated to the OCII Commission authority to "approve all contracts and actions related to the assets transferred to or retained by the Successor Agency, including without limitation, the authority to exercise land use, development and design approval authority for [Mission Bay]." (SF Ordinance No. 215-12, Section 6.)

The approval actions necessary for the GSW Event Center Project ("Project") to proceed - approval of amendments to the Mission Bay South Design for Development, approval of the major phase and basic concept schematic design applications, and approval of secondary use findings by the Executive Director - are all actions related to "land use, development and design approval." In this capacity, OCII is properly acting as the lead agency under CEQA because it is "the public agency which has the principal responsibility for carrying out or approving the project which may have a significant effect upon the environment." (Pub. Resources Code, § 21067.)

The Plan confirms the Redevelopment Agency's primary authority for implementation and provides the City with the limited role of cooperation with the Agency. The Plan unequivocally establishes that the Redevelopment Agency is the decisionmaker with the "powers, duties, and obligations to implement and further the program generally formulated in this Plan for the redevelopment, rehabilitation, and revitalization of the Plan Area." (Plan, Section 101; see also *id*. at Section 700 ["Except as otherwise specified in Section 600 … [which provides that 'The City shall aid and cooperate with the Agency in carrying out this Plan . . .'], the administration and enforcement of this Plan, including the preparation and execution of any documents implementing this Plan, shall be performed by the Agency"].) Thus the OCII, as the successor to the Redevelopment Agency, is the agency with principal responsibility under CEQA for carrying out or approving the GSW Event Center project.

The Plan does not require the City's Planning Commission to participate in OCII's review and approval of projects, except for the limited purpose of confirming the allocation of commercial office space under City law (Proposition M) and approving the design of office development projects. (Plan, § 304.11.) In fact, the Plan provides that the "Plan and the other Plan Documents, including the Design for Development, shall *supersede the San Francisco Planning Code* in its entirety, except as otherwise provided herein." (Plan, Section 101.) Therefore, the commenter is incorrect that the City's Planning Commission was required to review the SEIR, but it did play a role as a responsible agency in reviewing the office component of the project. Responsible agencies have no need to certify EIRs, but instead must "consider" Final EIRs as previously certified by lead agencies before the responsible agencies take their own actions with respect to those aspects of a project subject to their jurisdiction. (CEQA Guidelines, § 15096, subds. (a), (e)(2), (f); see also responses to comments O-MBA24L9-6, O-MBA27S9-3, O-MBA27S9-6, and O-MBA28L11-2.)

The commenter is correct that the City has a role in the approval process. As indicated in the Plan, the City is to cooperate with the Agency and to further such cooperation, the Plan provides for a cooperation agreement between the Agency and the City. (Plan, Section 102.) Subsequent approvals undertaken by the City and its various departments must be heard by the City, and various departments within the City, serving as a responsible agency under CEQA. (Pub. Resources Code, § 21069.) This division between OCII – as the lead agency – and the City – as a responsible agency – is fully consistent with the Redevelopment Dissolution Law and CEQA.

On June 2, 2015, OCII exercised its discretion to create a process with respect to Environmental Impact Reports ("EIRs") certified by OCII for Environmental Leadership Projects by which an interested party may file an appeal to the Board of Supervisors in its capacity as the state-authorized governing body of the Successor Agency. This appeal process exceeds the requirements of CEQA, and was not created as a means of complying with Public Resources Code section 21151, subdivision (c), which sets forth the CEQA requirement relating to administrative appeals where an elected decisionmaking body exists for a local lead agency. That statute does not apply here.

In general, the Board of Supervisors of the City and County of San Francisco is an elected body for the purpose of serving as the governing body of the City and County of San Francisco. In contrast, the successor agency is a separate legal entity from the City and County of San Francisco, created by the state legislature. The Board of Supervisors thus is not an elected body for the purpose of acting as the governing body of the successor agency. Further, as the governing body of the Successor Agency, it has no decisionmaking role over the Project's land uses or its compliance with the Plan. As pointed out above, the approval actions required by OCII for the GSW Event Center project do not involve any approval action by the Board of Supervisors acting in its capacity as the governing body of the successor agency. Accordingly, Public Resources Code section 21151(c) is not applicable to the GSW Event Center project SEIR certification.

In short, the successor agency does not have an elected decisionmaking body. While the Board of Supervisors serves as the successor agency, "[w]ell-established and well-recognized case law holds that the mere fact that the same body of officers acts as the legislative body of two different governmental entities does not mean that the two different governmental entities are, in actuality, one and the same." (*Pacific States Enterprises, Inc. v. City of Coachella* (1993) 13 Cal.App.4th 1414, 1424.)

This conclusion is consistent with the holding in *No Wetlands Landfill Expansion v. County of Marin* (2012) 204 Cal.App.4th 573 (*No Wetlands*). In *No Wetlands*, the court held that the Marin County Board of Supervisors did not constitute the elected decisionmaking body of the Marin County Environmental Health Services ("Marin EHS") for the purposes of CEQA. (*Id*. at p. 586.) In reaching this conclusion, the court noted that the Marin EHS was certified by California's Department of Resources Recycling and Recovery ("CalRecycle") pursuant to the California Integrated Waste Management Act of 1989 ("Waste Act") to implement the

Waste Act. (*Id*. at p. 578.) The court also explained that certain actions by Marin EHS were subject to review and concurrence by CalRecycle. (*No Wetlands*, *supra*, 204 Cal.App.4th at p. 581.) In consideration of relevant Waste Act provisions, the court determined:

> Marin EHS is the local enforcement agency under the Waste Act and the lead agency under CEQA. Marin EHS is a separate and distinct legal entity from Marin County. Marin EHS's decisionmaking body is its deputy director. Marin EHS has no elected decisionmaking body. While the Board of Supervisors is an elected governing body, it is not a decisionmaking body of Marin EHS.

(*No Wetlands*, *supra*, 204 Cal.App.4th at p. 584.)

As a result, the court held Public Resources Code section 21151 does not require "Marin EHS's EIR certification… [be] appeal[able] to the Board of Supervisors, which is not a decisionmaking body" with authority over projects approved by Marin EHS. (*Id*. at p. 586.)

As a result, the court held Public Resources Code section 21151 does not require "Marin EHS's EIR certification… [be] appeal[able] to the Board of Supervisors, which is not a decisionmaking body" with authority over projects approved by Marin EHS. (*Id*. at p. 586.)

The same conclusion is appropriate here. In this case, the Board of Supervisors serves as the successor agency solely under the Redevelopment Dissolution Law, in a separate and distinct capacity as an unelected body.

Further, as noted in *El Morro Community Assn. v. California Dept. of Parks & Recreation* (2004) 122 Cal.App.4th 1341, 1350, section 21151 does not apply to state agencies. CEQA includes no similar administrative appeal requirement for state agencies. Under Redevelopment Dissolution Law, successor agencies generally "succeed to the organizational status of the former redevelopment agency…" under the Community Redevelopment Law. (Health & Safety Code, § 34173, subd. (g); see also *id*., subd. (a) ["Except for those provisions of the Community Redevelopment Law that are repealed, restricted, or revised pursuant to the act adding this part, all authority, rights, powers, duties, and obligations previously vested with the former redevelopment agencies, under the Community Redevelopment Law, are hereby vested in the successor agencies"].)

The Community Redevelopment Law does not directly define redevelopment agencies as either a state or local agency; the Community Redevelopment Law only provides that "[t]here is in each community a public body, corporate and politic, known as the redevelopment agency of the community." (Health & Safety Code, § 33100.) The Supreme Court previously interpreted similar language under the Housing Authorities Law to mean that the "housing authority was created as a state agency, 'a public body corporate and politic' and is not an agent of the city in which it functions." (*Housing Authority of Los Angeles v. Los Angeles* (1952) 38 Cal.2d 853, 861, interpreting Health & Safety Code, § 34240 ["In each county and city there is a public body corporate and politic known as the housing authority of the county or city"].) Additionally, in *City of Cerritos v. State of California* (2015) 239

Cal.App.4th 1020, 1041, the court held successor agencies are not local agencies within the meaning of Proposition 1A. However, an agency may serve as a state agency for some purposes and a local agency for others. (*Lynch v. San Francisco Hous. Auth.* (1997) 55 Cal.App.4th 527, 534.)

Although CEQA classifies redevelopment agencies as local agencies for purposes of CEQA (see, e.g., Pub. Resources Code, § 21062), the intent and plain language of the Redevelopment Dissolution Law must control in the determination of whether successor agencies should be viewed as state agencies for the purposes of CEQA. The state created successor agencies "to expeditiously wind down the affairs of the dissolved redevelopment agencies and to provide the successor agencies with limited authority that extends only to the extent needed to implement a wind down of redevelopment agency affairs." (Stats 2011-2012 1st Ex Sess ch 5 § 1.) To achieve the state objective to dissolve redevelopment agencies, the Redevelopment Dissolution Law provides the state with substantial oversight over successor agencies. For example, if a city, county, city and county, or entity forming a joint powers authority does not elect to subsume the separate legal capacity as a successor agency, then the Redevelopment Dissolution Law authorizes the Governor to create an authority to serve as the successor agency. (Health & Safety Code, § 34173, subd. (d)(3); see also Health & Safety Code, § 34179, subds. (b), (k) [establishing a process by which the Governor may fill successor agency oversight board vacancies throughout the state].) Furthermore, a successor agency lacks the authority to "transfer any powers or revenues of the successor agency to any other party, public or private, except pursuant to an enforceable obligation on a Recognized Obligation Payment Schedule approved" by the State Department of Finance. (Health & Safety Code, § 34177.3, subd. (c); see also Health & Safety Code, § 34178, subd. (c) [prohibiting a successor agency from entering certain agreements with the local agencies unless relating to an obligation authorized by the State Department of Finance]; see also Health & Safety Code, § 34179, subd. (h) [with certain exceptions, successor agency oversight board actions must be submitted to the State Department of Finance and only become effective after the State Department of Finance has an opportunity to review the action].) Finally, the Redevelopment Dissolution Law gives the State Department of Finance the authority to dissolve successor agencies after all enforceable obligations have been retired or paid off, all real property has been disposed of, and all outstanding litigation has been resolved, if any. (Health & Safety Code, § 34187, subd. (d).) This state oversight demonstrates that successor agencies, unlike former redevelopment agencies, should be viewed as state agencies rather than local agencies for the purposes of CEQA.

Furthermore, while successor agencies succeeded to the organizational status of the former redevelopment agency under the Community Redevelopment Law, the Redevelopment Dissolution Law demonstrates that successor agencies did not automatically take on the status of redevelopment agencies for the purposes of other laws. For example, existing law establishes that redevelopment agencies are treated as local agencies for the purpose of the Ralph M. Brown Act (Chapter 9 (commencing with Section 54950) of Part 1 of Division 2 of Title 5 of the Government Code) ("Brown Act"). (See, e.g., Stockton Newspapers v.

Redevelopment Agency (1985) 171 Cal.App.3d 95, 105 [holding a redevelopment agency violated the Brown Act].) Nevertheless, the Redevelopment Dissolution Law provides that a successor agency is a "local entity" for the purposes of the Brown Act. (See, e.g., Health & Safety Code, § 34173, subd. (g).) If the Legislature intended that successor agencies automatically assume the status of redevelopment agencies for purposes of all laws, it would have been unnecessary for the Redevelopment Dissolution Law to define the status of successor agencies for the purposes of the Brown Act. (*Woodland Joint Unified School Dist. v. Commission on Professional Competence* (1992) 2 Cal.App.4th 1429, 1442 [when interpreting a statute "where possible, every clause and word of a statute should be given effect and meaning"].)

The Redevelopment Dissolution Law does not provide that a successor agency constitutes a "local entity" for any other purpose. The Legislature could have made successor agencies local agencies for the purposes of CEQA if it desired to do so. It must be presumed that the Legislature intended everything in a statutory scheme, and statutes must not be read to omit expressed language or to include omitted language. (*Tyrone W. v. Superior Court* (2007) 151 Cal.App.4th 839, 850; see also *Miklosy v. Regents of University of California* (2008) 44 Cal.4th 876, 896 ["when the Legislature uses a critical word or phrase in one statute, the omission of that word or phrase in another statute dealing with the same general subject generally shows a different legislative intent"].)

In consideration of the plain language of the Redevelopment Dissolution Law and the level of involvement and oversight by the state in the affairs of a successor agency, OCII concludes that successor agencies, unlike a redevelopment agencies, are properly viewed as state agencies for the purposes of CEQA. This conclusion is analogous to the holding in *County of Los Angeles v. Continental Corp.* (1952) 113 Cal.App.2d 207 (*Continental Corp.*). In *Continental Corp.*, the court concluded that the Los Angeles County Board of Supervisors, when serving in its separate role as the Los Angeles County Flood Control District, constituted a "state officer[], and any action taken by such board… [was] not action by the Board of Supervisors of the County of Los Angeles, as such, or of the county of Los Angeles." (*Id*. at pp. 219-220.)

For all of the above reasons, OCII finds that Public Resources Code section 21151 does not require an appeal be made available from OCII's action approving the project and certifying the Final SEIR to the Board of Supervisors either in its elected capacity as the governing body of the City and County of San Francisco or in its separate capacity as the successor agency. Nevertheless, while CEQA does not require an administrative appeal, OCII exercised its discretion to provide for an appeal to the Board of Supervisors in its capacity as successor agency with respect to EIR certifications for Environmental Leadership Projects to provide further opportunity for public participation in the administrative process.

Issues Raised by Late Commenters on General Comments on Environmental Topics

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-19 O-MBA20L7-31 O-MBA20L7-34 O-MBA20L7-38
O-MBA28L11-3

For the reasons stated in this letter we believe that the Event Center EIR, amended after the DSEIR review, continues to reflect significant shortcomings that will result in unmitigated, significant, and excessive air quality impacts during the project's construction and then across its operational lifetime. Due to serious issues with M-AQ-1's construction, we believe that it cannot practicably provide the emission reductions claimed for it, and that the benefit of emissions from trips already on the books and associated with the Oakland Oracle Arena, to reduce the complement of all new Event Center trip-related emissions, is not acceptable under CEQA. In addition, serious questions remain regarding costs, availability, and sustained durability of tons of emission credits, likely underestimated due to flaws noted in this letter, that will be needed by the project to reduce its ozone precursor impacts to less-than-significant levels. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-19]*)

Due to all of the foregoing and other issues not yet addressed in these comments, the SEIR transportation and circulation section is inadequate and unsuited for certification. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-31]*)

In general, these new analyses and discussions do not appear to support the conclusions and findings, or provide adequate responses to the prior public comments in these Sections. Given the short time available for these comments, we would recommend requesting an extension to be able to more fully review the Lead Agency responses and their analyses from a technical perspective to be able to provide comments on more sections or expand on our comments. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-34]*)

SUMMARY

In our opinion, the Responses by the Office of Community Investment and Infrastructure failed in part or in total to respond to our original analyses in several areas. In general, the biological elements of the Response (and provided supporting analyses) lacked technical foundation, ignored or misconstrued our analytical points, or conflated technically correct elements in such a way as to lead to incorrect interpretations. Response BIO-1, General Approach to the Analysis, was not addressed in detail since we believe that no substantive changes have been made to the Biology section and our prior comments still apply. Additional comments that relate back to the BIO-1 Response are also found in the following comments. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-38]*)

Please refer to the following letters previously submitted and incorporated by reference:

From the Law Offices of Thomas N. Lippe:

(1) November 2, 2015, letter to OCII and Planning Department re: Comments on Final Subsequent Environmental Impact Report for the Warriors Arena Project Re Air Quality, Transportation, Hydrology, Water Quality, Biological, and Noise Impacts, including:

(2) As Exhibit A thereto, a November 2, 2015, letter from John Farrow, including

(3) As Exhibit 1 to Exhibit A, November 2, 2015, letter report from Paul Rosenfeld and Jessie Jaeger of SWAPS to Thomas Lippe, re Comments on the Event Center and Mixed-Use Development Project at Mission Bay Blocks 29-32.

(4) As Exhibit C thereto, a November 2, 2015, report by Greg Gilbert, Autumn Wind Associates.

(5) As Exhibit F thereto, a November 2, 2015, letter from Dan Smith.

(6) As Exhibit G thereto, a November 2, 2015, letter from Larry Wymer.

(7) As Exhibit H thereto, a November 2, 2015, letter from Matt Hageman.

(8) As Exhibit I thereto, a November 2, 2015, letter from Erik Ringelberg and Kurt Balasek.

(9) As Exhibit J thereto, a November 2, 2015, letter from Erik Ringelberg.

(10) As ExhibitK thereto, a July 16, 2015, BSK TechnicalMemorandumRegardingtheProposed Warrior Arena Wetland Features by Erik Ringelberg and Kevin Grove.

(11) As Exhibit L thereto, an October 29, 2015, Draft Waters and Wetland Delineation Report Proposed Mission Bay Development, Blocks 29-32 San Francisco, California, by Erik Ringelberg and Kevin Grove of BSK Associates.

(12) November 2, 2015, letter to OCII re: Warriors Arena Project: Violation of Variance Requirement.

(13) November 5, 2015, letter to Planning Commission re: Warriors Arena Project: Planning Codes section 321 and 305, General Plan Inconsistency and CEQA Findings.

(14) July 24, 2015, letter regarding impacts on Hydrology, Water Quality, and Biological Resources, including:

(15) July 21, 2015, letter report authored by Matt Hageman, P.G., C.Hg., QSD, QSP;

(16) July 21, 2015, letter report authored by Erik Ringelberg, B.Sc., M.Sc., Ph.D candidate; and Kurt Balasek, PG, CHg, QSD.

(17) July 25, 2015, letter regarding impacts on Noise and Vibration, including:

(18) July 24, 2015, letter report authored by acoustic engineer Frank Hubach.

(19) July 26, 2015, letter regarding impacts on Air Quality, including:

(20) July 19, 2015, letter report authored by Greg Gilbert; and

(21) July 20, 2015, letter report authored by Paul Rosenfeld, Ph.D, and Jessie Jagger.

(22) July 27, 2015, letter regarding impacts on Transportation, including:

(23) July 23, 2015, letter report authored by traffic engineer Dan Smith; and

(24) July 21, 2015, letter report authored by traffic engineer Larry Wymer.

From the law firm of Soluri Meserve:

(25) November 3, 2015, Letter to the San Francisco Municipal Transportation Agency, Board of Directors regarding their November 3, 2015, Agenda Item No. 13.

(26) November 2, 2015, Letter to the OCH and San Francisco Planning Department regarding the Environmental Review for Warriors Event Center and Mixed-Use Development at Mission Bay Blocks 29-32.

(27) October 20, 2015, letter to the San Francisco Planning Department regarding Supplemental Comments on Environmental Review for Warriors Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 - Updated Soil and Screening Levels.

(28) October 7, 2015, Letter to the San Francisco Planning Department regarding Supplemental Comments on Environmental Review for Warriors Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 - Clean Water Act 404 and CZMA Consistency.

(29) July 9, 2015, Letter to the San Francisco Planning Department regarding Notice of Incomplete Record for Warriors Event Center Environmental Review.

(30) 9. July 26, 2015, letter regarding impacts on Geology and Soils, Recreation, Hazardous Materials, , Greenhouse Gases, Wind and Shadow, Utilities and Service Systems, Public Services, Energy and Urban Decay, including:

(31) July 22, 2015, letter report authored by air quality professionals Patrick Sullivan, CPP, REP A, and Joh Henkelman, regarding Greenhouse Gas Emissions;

(32) July 22, 2015, letter report authored by geotechnical engineer Lawrence Karp, CE, CEG, regarding Geology and Soils impacts;

(33) July 22, 2015, letter report authored by engineering geologist Marin Cline, CEG, and hydrogeologist Kurt Balasek, PG, CHg, QSD, regarding Geology and Soils impacts);

(34) July 22, 2015, letter report authored by geotechnical engineer Martin Cline, GEG and Kurt Balasek, PG, CHg, QSD, regarding Hazardous Materials; and (35) July 22, 2015, letter report authored by economist Philip King, Ph.D., regarding Urban Decay.

(36) June 29, 2015, letter regarding the City's failure to comply with AB 900 record keeping procedures and the resultant ineligibility of the Project for AB 900's litigation fast track procedures.

From the Brandt-Hawley Law Group:

(37) October 13, 2015, letter to the OCH the potentially-feasible alternate site adjacent to Pier 80.

(38) November 3, 2015, letter to the OCH regarding inadequate CEQA findings and inadequate SEIR responses to comments relating to land use plan inconsistencies, potentially-feasible project alternatives, and cultural resources.

(39) 8. July 26, 2015, letter regarding impacts on Land Use, Aesthetics, Cultural Resources, and Project Alternatives.

From Thomas Lippe, Susan Brandt-Hawley, Patrick Soluri, and Osha Meserve jointly:

(40) July 26, 2015, letter regarding EIR tiering;

(41) July 26, 2015, letter regarding litigation streamlining under AB 900.

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 9, 2015 [O-MBA28L11-3]*)

Response to Late Comment ERP-6: on General Comments on Environmental Topics

The comments in this category are general statements regarding overall concerns with the SEIR or potential impacts on various environmental topics. Due to the lack of specific information in these comments, the responses to those comments are incorporated in the specific responses to specific comments on the same topic.

Comment O-MBA20L7-19

Please refer to Section 9 of this Exhibit D regarding Response to Late Comments on Air Quality, as well as to RTC document Section 13.13.

Comment O-MBA20L7-31

Please refer to Section 8 of this Exhibit D regarding Responses to Late Comments on Transportation, as well as to RTC document Section 13.11.

Comment O-MBA20L7-34

This comment does not provide any specific information to support its claim, and the commenter is referred to this entire Exhibit D and the entire RTC document for responses to comments on the SEIR. Given that the commenter has submitted at least a dozen letters on the SEIR since publication of the RTC document, including on the order of 1,000 pages of comments, OCII believes that the commenter has had adequate time to review the RTC document and that no extension in review time is warranted.

Comment O-MBA20L7-38

Please refer to Section 15 of this Exhibit D regarding Responses to Late Comments on Biological Resources, as well as to RTC document Section 13.19.

Comment O-MBA28L11-3

OCII has received the various letters and exhibits listed by the commenter, and responses to all substantive comments in those letters are included in this Exhibit D and/or in the RTC document. Please see Table 1 in Section 1 of this Exhibit D for the appropriate comment letter codes for letters submitted at the time of or subsequent to publication of the RTC document. Please see Chapter 11 of the RTC document for the comment letter codes for comments included in the RTC document. Responses to all substantive comments, as designated by their comment code, are provided either in this Exhibit D and/or in the RTC document, organized by topic.

SECTION 4: RESPONSES TO LATE COMMENTS ON THE AB 900 PROCESS

The comments and corresponding responses in this section cover topics related to the Jobs and Economic Improvement through Environmental Leadership Act (Assembly Bill 900 or AB 900), which is discussed in SEIR Chapter 2, Introduction, Section 2.7, Assembly Bill 900, as augmented in RTC document Section 13.4. These include topics related to:

- Issue AB-1: AB 900 Administrative Record

Issues Raised by Late Commenters on AB 900 Administrative Record

This response addresses all or part of the following comments, which are quoted below:

O-MBA16S6-2

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2. AB900

Although the Project previously received certification from the Governor's office under AB 900, that law has very specific procedural requirements with which the City has failed to comply.

As previously noted, the City has failed to make the record of proceeding available online as required by Public Resources Code section 21186 ("Section 21186"). In response to clear evidence of the City's failure to post online all required documents as required by Section 21186, the City now takes the legal positon in the FSEIR that the City is somehow allowed to create two administrative records – one that is posted online as required by Section 21186, and a more expansive record that satisfies the requirements of Public Resources Code section 21167.6, subdivision (e)(10). This interpretation is contrary to the plain language of the Section 21186, which requires the City to timely post online all documents that will comprise the administrative record ultimately certified by the City. Any contrary interpretation would be absurd in light of the accelerated litigation briefing schedule provided by AB 900. Accordingly, the City's actions to flout its duties under AB 900 affirmatively prejudices any potential CEQA petitioner, and represents an intentional misuse of AB 900.

As the City knows full well, a motion to augment the record as provided by AB 900 will not adequately mitigate that prejudice where, as here, the lead agency knowingly and intentionally creates two separate administrative records – one for posting online and a second for ultimate certification – specifically in order to frustrate any future legal challenges. The only effective remedy in this instance is for the City to recirculate the DSEIR along with all documents comprising the administrative record in compliance with AB 900, which the Alliance calls upon the City to do. (*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [AR-O-MBA16S6-2]*)

Response to Late Comment AB-1: AB 900 Administrative Record

As acknowledged in Comment O-MBA16S6-2, the Governor certified, and the Joint Legislative Budget Committee concurred, that the project meets the requirements of the Jobs and Economic Improvement Act of 2011, Public Resources Code sections 21178, et seq. ("AB 900"). (Governor's Certification Granting Streamlining for the Golden State Warriors Event Center and Mixed Use Development at Mission Bay, April 30, 2015.) The project's eligibility for the AB 900 streamlining is not subject to further review. (Pub. Resources Code, § 21184(b)(1).)

Since certification of the proposed project as an environmental leadership development project by the Governor under AB 900, OCII has complied, and continues to comply, with the procedural requirements of AB 900. OCII published and continues to update the administrative record of proceedings for the project, which is available online, in a downloadable format, at http://www.gsweventcenter.com. This record includes the Draft SEIR and Response to Comments document, and all other documents submitted to or relied on by OCII in the preparation of the SEIR. Following release of the Draft SEIR for public comment, OCII has continued to update the record with additional documents that it has prepared, as well as those that it has received from the project sponsor, State agencies and City departments, and members of the public.

Contrary to the claim asserted by the commenter, OCII has not taken the position that it has created two separate administrate records. Rather, as discussed in Response AB-2 of the RTC document Section 13.4 (p. 13.4-16), in accordance with AB 900, OCII has posted the *complete* administrate record online. RTC Response AB-2 also provides specific responses to each document the commenter alleges was improperly excluded from the administrative record, and explains why each document is not within the scope of the CEQA administrative record for this project, as set forth in Public Resources Code Section 21167.6(e). Comment O-MBA16S6-2 (the November 2, 2015 letter from the commenter) does not identify any new or additional documents that were allegedly omitted from the record from what the commenter submitted in an earlier letter.

OCII will continue to update the administrative record with documents it prepares or receives through final approval of the project. These documents will continue to be posted online and available for download. Thus, the record, as ultimately certified, will comply with both the procedural requirements of Public Resources Code Section 21186, and the substantive requirements regarding the contents of an administrative record, as set forth in Section 21167.6(e). Finally, OCII notes that under AB 900, the remedy for an allegedly insufficient administrate record is not recirculation of the EIR as the letter alleges, but rather an order from the superior court to augment the record. (Pub. Resources Code § 21186(i).)

SECTION 5: RESPONSES TO LATE COMMENTS ON THE PROJECT DESCRIPTION

The comments and corresponding responses in this section cover topics discussed in SEIR Chapter 3, Project Description, as augmented in RTC document Section 13.5. These include topics related to:

- Issue PD-1: Project Assumption

Issues Raised by Late Commenters on Project Assumptions

This response addresses all or part of the following comments, which are quoted below:

O-MBA16S6-10 O-MBA23S7-1 O-MBA26S8-1 O-MBA27S9-4

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9. Flawed and Misleading Approach to Analyzing and Mitigating the Project's Transportation Impacts

Buried within the "project description" are *de facto* mitigation measures for the Project's impacts on transportation. More specifically, these mitigation measures include both one-time capital improvements and ongoing expenditures as set forth in the Transportation Management Plan ("TMP") and Transit Service Plan ("TSP"). The City's strategy of conflating analysis of the Project's design features and mitigation measures violates CEQA. (See, e.g., *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645; see comments by Smith Engineering and Management dated November 2, 2015, pp. 2-3.) The prejudice associated with the City's strategy, other than simply obscuring the City's massive public subsidy for the Project, is that the EIR "fail[s] to consider whether other possible mitigation measures would be more effective." (Id. at 657.)

The City also appears to rely on the incorporation of these plans into the project description in order to conceal from the public the City's failure to require full mitigation of the Project's impacts from the applicant. It is a bedrock principle of environmental law that development projects should mitigate their environmental impacts to the extent feasible. With respect to the Project's transportation impacts, however, the City deviates from this principle and instead adopts an odd, ad hoc "fair share" fee program to mitigate project-level impacts. (*Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173 ("*Anderson First*").) As a threshold matter, the SEIR never clearly discloses to the public that it essentially relies upon "fair share" payments from the Project in order to mitigate its project-level transportation impacts, which renders the SEIR defective as an informational document. Had the SEIR done so, it would have been apparent that the SEIR failed to disclose necessary information about this fair share program.

The payment of a "fair share" impact fees may constitute adequate mitigation if they "are part of a reasonable plan of actual mitigation that the relevant agency commits itself to implementing." (*Ibid*.) The *Anderson First* decision identified the information that is required in an EIR to establish the adequacy of a "fair share" mitigation measure, which includes the following:

(i) An identification of the required improvement;

(ii) An estimate of the cost of the required improvement;

(iii) Sufficient information to determine how much the project would pay towards the improvement; and

(iv) The fees must be part of a reasonable, enforceable plan or program sufficiently tied to the actual mitigation of the impacts at issue.

(*Anderson First, supra*, 130 Cal.App.4th at 1188-89.)

The SEIR fails to provide this necessary information. While the SEIR mentions the TMP and TSP as addressing the Project's transportation impacts, the SEIR fails to identify the total costs of the improvements, the Project's allocated contribution, and the enforceable plan or program to contribute the Project's "fair share."

The SFMTA spreadsheet entitled "Capital and Operating Cost Estimates for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 (The Project)," dated October 13, 2015, is instructive. (See Exhibit 5.) Considering only one-time "capital uses" and "capital uses allocation to project," (i.e., excluding ongoing costs to mitigate the Project's transportation impacts), it reveals that the total cost of these improvements is $64,663,474, and the Project's fair share allocation is $61,898,909. Of the amount "allocated" to the Project, however, only $27,390,335 will actually be paid by the project applicant. Thus, the Project is contributing less than 50% of its allocated fair share contribution that is necessary to mitigate the Project's transportation impacts. To make matters worse, only $19,434,536 is coming from an existing and enforceable impact fee program. The balance of the project applicant's contribution, approximately $7,955,799, is the result of the City's voluntary redirection of General Fund revenues.

In other words, rather than simply require the project applicant to be responsible for the capital improvements needed to mitigate its project-level impacts, the City establishes some fair share fee program and then does not even require the applicant to pay the fair share fee – instead voluntarily giving up General Fund revenues that are intended to support other Citywide programs and services. By cloaking this deficient mitigation strategy as a design feature of the Project, the City never engages in a meaningful analysis of potentially feasible mitigation measures involving the project applicant actually mitigating these project-level impacts.

A similar deficiency applies to the Project's ongoing costs to mitigate its project-level transportation impacts. Total ongoing annual costs to mitigate the Project's transportation impacts are estimated at $8,209,318 in FY18-18. Of this amount, $2,773,110 in revenue is not paid from an enforceable impact fee program but rather re-directed from the General Fund. What more, significant additional City revenues, which are not even generated by the Project but rather "allocated" to the Project such as off-site parking and hotel tax, will be re-allocated to pay for the Project's ongoing mitigation for project-level transportation impacts. These reallocations of General Fund revenues cannot constitute an enforceable plan that is subject to future discretionary actions by the Board of Supervisors. Even the future adoption of the so-called Mission Bay Transportation Improvement Fund is inadequate to ensure future reallocations of General Fund revenues because the present Board of Supervisors cannot bind by mere ordinance the discretion of future Boards. (*McMahan v. City and County of San Francisco* (2005) 127 Cal.App.4th 1368.)

In short, the City is inexplicably failing to require the applicant to bear responsibility for fully mitigating its own project-level impacts. Rather, the City is setting up a flawed *de facto* fair share fee program to pay for these project-level mitigations, and redirecting revenues generated by the Project and elsewhere to cover the funding gap for these mitigation measures. This deficiency is nowhere disclosed to the public in the SEIR. The City may not rely on the preparation of various "plans" as a smokescreen to conceal from the public the Project's failure to mitigate its own project-level impacts and massive public subsidy needed to make up for that deficiency. The SEIR is misleading, and fails as an informational document with respect to mitigation for transportation impacts.

The City's action to mitigate the Project's transportation impacts is also an undisclosed public subsidy that triggers substantive and procedural mandates by the City before committing to such subsidy. (See Exhibit 6, report by Marin Economic Consulting dated November 2, 2015.) More specifically, these subsidies include committing to direct General Fund revenues to pay for light rail cars, and "allocating" parking/hotel tax revenues from other properties to pay these expenses. California law requires the City to notice and hold a public hearing before committing to such subsidies. The City is also required to provide detailed information about the purpose, nature, extent and effect of such subsidies prior to commitment. The City has failed to comply with these

substantive and procedural mandates prior to approving this public subsidy. (*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-10]*)

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The Project's FSEIR is defective as an informational document with respect to the analysis and public disclosure of impacts and mitigation measures regarding transportation. Impermissibly buried within the "project description" are *de facto* mitigation measures for the Project's transportation impacts. These mitigation measures include both one-time capital improvements and ongoing expenditures as set forth in the Transportation Management Plan ("TMP") and Transit Service Plan ("TSP"). The City's strategy of conflating analysis of the Project's design features and mitigation measures violates CEQA. (See, e.g., *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645.) The prejudice associated with the City's strategy, other than simply obscuring the City's massive public subsidy for the Project, is that the EIR "fail[s] to consider whether other possible mitigation measures would be more effective." (Id. at 657.)

The City also appears to rely on the incorporation of these plans into the project description in order to conceal from the public the City's failure to require full mitigation of the Project's impacts from the applicant. It is a bedrock principle of the California Environmental Quality Act (Pub. Resources Code, §§ 21000 et seq. ("CEQA"), 21002; see also CEQA Guidelines, § 15126.4) that development projects should mitigate their environmental impacts to the extent feasible. With respect to the Project's transportation impacts, however, the City deviates from this principle and instead adopts an odd, ad hoc "fair share" fee program to supposedly mitigate project-level impacts. (*Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173 (*Anderson First*).) As a threshold matter, the SEIR never clearly discloses to the public that it essentially relies upon "fair share" payments from the Project in order to mitigate its project-level transportation impacts, which renders the SEIR defective as an informational document. Had the SEIR done so, it would have been apparent that the SEIR failed to disclose necessary information about this fair share program.

The payment of a "fair share" impact fees may constitute adequate mitigation if they "are part of a reasonable plan of actual mitigation that the relevant agency commits itself to implementing." (Id. at 1188-89.) The *Anderson First* decision identified the information that is required in an EIR to establish the adequacy of a "fair share" mitigation measure, which includes the following:

(i) An identification of the required improvement;

(ii) An estimate of the cost of the required improvement;

(iii) Sufficient information to determine how much the project would pay towards the improvement; and

(iv) The fees must be part of a reasonable, enforceable plan or program sufficiently tied to the actual mitigation of the impacts at issue.

(Ibid.)

The SEIR fails to provide this necessary information. While the SEIR mentions the TMP and TSP as addressing the Project's transportation impacts, the SEIR fails to identify the total costs of the improvements, the Project's allocated contribution, and the enforceable plan or program to contribute the Project's "fair share."

Although not included in the Project's CEQA documentation, some of this necessary information is contained in the Event Center Expenditure Plan, which the SFMTA is scheduled to review and approve on November 3, 2015 ("Expenditure Plan"). (See Enclosure 3 to Staff Report.) The Expenditure Plan reveals the legal deficiencies in the City's mitigation strategy for the Project's transportation impacts. Considering only one-time "capital uses" and "capital uses allocation to project," (i.e., excluding ongoing costs to mitigate the Project's transportation impacts), it reveals that the total cost of these improvements is $64,663,474, and the Project's fair share allocation is $61,898,909. Of the amount "allocated" to the Project, however, only $27,390,335 will actually be paid by the project applicant, over the course of several years with the City fronting the funds for the

improvements from the General Fund. Thus, the Project is contributing less than 50 percent of its allocated fair share contribution that is necessary to mitigate the Project's transportation impacts. To make matters worse, only $19,434,536 is coming from an existing and enforceable impact fee program. The balance of the project applicant's contribution, approximately $7,955,799, is the result of the City's planned redirection of General Fund revenues.

In other words, rather than simply require the project applicant to be responsible for the capital improvements needed to mitigate its project-level impacts, the City establishes a fair share fee program and then does not even require the applicant to pay the fair share fee – instead voluntarily giving up General Fund revenues that are intended to support other Citywide programs and services. By cloaking this deficient mitigation strategy as a design feature of the Project, the City never engages in a meaningful analysis of potentially feasible mitigation measures involving the project applicant actually mitigating these project-level impacts.

A similar deficiency applies to the Project's ongoing costs to mitigate its project-level transportation impacts. Total ongoing annual costs to mitigate the Project's transportation impacts are estimated at $8,209,318 in FY18-18. Of this amount,

$2,773,110 in revenue is not paid from an enforceable impact fee program but rather re-directed from the General Fund. What more, significant additional City revenues, which are not even generated by the Project but rather "allocated" to the Project from sources such as off-site parking and hotel tax, will be re-allocated to pay for the Project's ongoing mitigation for project-level transportation impacts. These reallocations of General Fund revenues cannot constitute an enforceable plan that is subject to future discretionary actions by the Board of Supervisors. Even the anticipated future adoption of the Mission Bay Transportation Improvement Fund ordinance is inadequate to ensure future reallocations of General Fund revenues because action by ordinance is cannot bind future Boards. (*McMahan v. City and County of San Francisco* (2005) 127 Cal.App.4th 1368.)

In short, the City fails without explanation to require the applicant to bear responsibility for fully mitigating its own project-level impacts. Instead, the City is setting up a flawed *de facto* fair share fee program to pay for this project-level mitigation, and redirecting revenues generated by the Project and elsewhere to cover the funding gap for these mitigation measures. This deficiency is nowhere disclosed to the public in the SEIR. The City may not rely on the preparation of various "plans" as a smokescreen to conceal from the public the Project's failure to mitigate its own project-level impacts and massive public subsidy needed to make up for that deficiency. The SEIR is misleading, and fails as an informational document with respect to mitigation for transportation impacts.

The City's action to mitigate the Project's transportation impacts is also an undisclosed public subsidy that triggers substantive and procedural mandates by the City before committing to such subsidy. The attached report by Dr. Jon Haveman explains that the redirection of General Fund and other revenues to mitigate the Project's impacts represents a loss of revenue to the City (see Exhibit 1), which in turn constitutes a public subsidy under California law. More specifically, these subsidies include committing to direct General Fund revenues to pay for light rail cars, construction of transportation improvements, public safety and traffic officers, etc., "allocating" parking/hotel tax revenues from other properties to pay these expenses.

Because the TMP and TSP are built into the project description, the City's approval of the Project commits the City to the subsidy as set forth in these plans, which is further reinforced by the City's approval of the Expenditure Plan. California law requires that the City must provide public notice and a public hearing, as well as detailed information about the purpose, nature, extent and effect of such subsidy, prior to making such a commitment. The City has failed to comply with these substantive and procedural mandates prior to approving this public subsidy for the Project. (*Mission Bay Alliance, Soluri Meserve, letter, November 3, 2015 [O-MBA23S7-1]*)

As explained in this firm's November 3, 2015, Letter to the San Francisco Municipal Transportation Agency ("MTA"), Board of Directors regarding their November 3, 2015, Agenda Item No. 13, the SEIR

is defective as an informational document with respect to the analysis and public disclosure of impacts and mitigation measures regarding transportation under the California Environmental Quality Act (Pub. Resources Code, §§ 21000 et seq. ("CEQA")). Specifically, the SEIR does not describe the approval of the Mission Bay Transportation Improvement Fund ("MBTIF") as a mitigation measure. Yet the MBTIF is essential to the City's attempts to mitigate the Project's transportation-related impacts. The City's strategy of conflating analysis of the Project's design features and mitigation measures violates CEQA. (See, e.g., *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645.) The prejudice associated with the City's strategy, in addition to obscuring the City's public subsidy for the Project, is that the EIR "fail[s] to consider whether other possible mitigation measures would be more effective." (Id. at 657.)

The City also appears to rely on the incorporation of the MBTIF into the Project description in order to conceal from the public the City's failure to require full mitigation of the Project's impacts from the applicant. A fundamental principle of CEQA is that development projects should mitigate their impacts to the extent feasible. (See, e.g., Pub. Resources Code, § 21002; see also CEQA Guidelines, § 15126.4.) With respect to the Project's transportation impacts, the City deviates from this principle and instead adopts an odd, ad hoc "fair share" fee program to mitigate Project-level impacts. (*Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173 (*Anderson First*).) As a threshold matter, the SEIR never discloses to the public that it essentially relies upon "fair share" payments from the Project in order to mitigate its Project-level transportation impacts, which renders the SEIR defective as an informational document. Had the SEIR described the Project's approach to mitigating transportation impacts, it would have been apparent that the SEIR failed to disclose necessary information about this fair share program.

The payment of "fair share" impact fees may constitute adequate mitigation if the payments "are part of a reasonable plan of actual mitigation that the relevant agency commits itself to implementing." (Id. at 1188-1189.) The *Anderson First* decision identified the information that is required in an EIR to establish the adequacy of a "fair share" mitigation measure, which includes the following:

(i) An identification of the required improvement;

(ii) An estimate of the cost of the required improvement;

(iii) Sufficient information to determine how much the project would pay towards the improvement; and

(iv) The fees must be part of a reasonable, enforceable plan or program sufficiently tied to the actual mitigation of the impacts at issue.

(Ibid.)

The SEIR fails to provide this necessary information, and never even mentions the MBTIF. While the SEIR does mention the Transportation Management Plan ("TMP") and Transit Service Plan ("TSP") as addressing the Project's transportation impacts, the SEIR fails to identify the total costs of the improvements, the Project's allocated contribution, and the enforceable plan or program to contribute the Project's "fair share." The new information contained within this Committee's agenda packet regarding the MBTIF and other related matters cannot substitute for full disclosure of the selected approach to mitigation of transportation related impacts in the SEIR.

In addition, the actions on November 6, 2015, by the MTA, and this Committee's planned actions today with respect to approval of the MBTIF and the grant of street and easement vacations are contrary to California public disclosure laws with respect to economic development subsidies. California law requires the City to provide public notice and a public hearing, as well as detailed information about the purpose, nature, extent and effect subsidies, prior to commitment. (Gov. Code, § 53083.) The Budget and Legislative Analyst's Memorandum ("BLA Memo"), along with the SFMTA Cost Estimate spreadsheet make clear that there is an estimated revenue shortfall of $29,916,666, which will be financed through sale of SFMTA revenue bonds or other City financing source. (BLA Memo, pp. 7-8.) Payment of these Project mitigation costs by the City is an economic development subsidy, even if the loan is eventually repaid. (Gov. Code, §53083, subd. (g)(l).) Moreover, the summary vacation of streets and easements likely has value, yet no value is disclosed.

Thus, the City must now comply with the substantive and procedural mandates of Government Code section 53083 prior to approving subsidies in the form of loans and other benefits included in the MBTIF and other related City actions and approvals, that provide transportation, infrastructure, public safety and other mitigation for Project impacts. (*Mission Bay Alliance, Soluri Meserve, letter, November 3, 2015 [O-MBA26S8-1]*)

As explained in this firm's November 3, 2015, letter to the MTA, Board of Directors regarding their November 3, 2015, Agenda Item No. 13, incorporated by reference, the SEIR is defective and cannot be relied upon as an informational document with respect to the analysis and public disclosure of impacts and mitigation measures regarding transportation under the California Environmental Quality Act (Pub. Resources Code, §§ 21000 et seq. ("CEQA")). Specifically, the SEIR does not describe the approval of the Mission Bay Transportation Improvement Fund ("MBTIF") as a mitigation measure. The MBTIF is essential to the City's attempts to mitigate the Project's transportation-related impacts and its omission from the SEIR precludes this Commission's consideration of a Place of Entertainment Permit. The City's strategy of conflating analysis of the Project's design features and mitigation measures violates CEQA. (See, e.g., Lotus v. Department of Transportation (2014) 223 Cal.App.4th 645.) (*Mission Bay Alliance, Soluri Meserve, letter, November 10, 2015 [O-MBA27S9-4]*)

Response to Late Comment PD-1: Project Assumptions

The commenter states that the Final SEIR's analysis of the proposed project conflates project design features with mitigation measures, in violation of the Court of Appeal's decision in *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645. In that case, the court determined that the discussion of certain impacts in an EIR was inadequate because, rather than identifying a standard of significance and describing the impacts, the EIR assumed that special construction techniques would be incorporated into the project and did not disclose whether there would be an impact without the incorporation of these special construction techniques; nor did the EIR disclose what standard would be used to determine whether residual impacts remaining after incorporating the construction techniques would be "significant" under CEQA.

That has not occurred here. In this instance, with respect to traffic impacts, the SEIR identifies the standards used to determine whether an impact is "significant." (Draft SEIR, section 5.2.5.1.) The Draft SEIR also describes the project. The project includes road and transit improvements that will be implemented as part of the project, and those that are already being implemented as part of the Mission Bay Plan. (Draft SEIR, section 5.2.5.2.) This approach is consistent with CEQA. (See, e.g., *Wollmer v. City of Berkeley* (2011) 193 Cal.App.4th 1329 [citing road improvements to support city's conclusion that project would not result in traffic impacts].) Because these improvements must be constructed, OCII appropriately incorporated these improvements into its analysis of the project's traffic impacts. (See, e.g., *Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal.4th 1086 [for purposes of CEQA analysis, city appropriately assumed project would be constructed as proposed].) OCII has not cited vague special construction techniques as a basis for foregoing

further traffic analysis, as occurred in *Lotus*. The description of traffic-related project improvements is concrete and specific.

The commenter is incorrect that the project involves a "massive" public subsidy triggering substantive and procedural mandates. Neither the project nor the special reserve fund for transit improvements in the vicinity, constitute the type of "economic development subsidy" to which the commenter presumably refers. "Economic development subsidies" are payments or credits "for the purpose of stimulating economic development." (Gov. Code, § 53083(g)(1).) The transit expenditures, in contrast, help accommodate the transit needs of the existing and anticipated development in Mission Bay, including the Project and surrounding neighborhoods. For example, the proposed ordinance that would adopt the Mission Bay Transportation Improvement Fund, provides that the fund is "for the purpose of safeguarding monies in the General Fund to pay for: City services and capital improvements to address transportation and other needs of the community" in connection with events at the project site. (San Francisco Board of Supervisors File No. 150995.) Moreover, the legislative history of Government Code section 53083 establishes that the Legislature did not intend economic development subsidies to include financing for public infrastructure improvements in redevelopment areas. In any case, in light of the numerous public hearings to consider the project and the Mission Bay Transportation Improvement Fund, and the information made available through the online administrative record for the Project (http://www.gsweventcenter.com), OCII has satisfied both the procedural and substantive requirements for adopting an "economic development subsidy" under section 53083.[1]

Citing financial figures derived from an attached report prepared by Marin Economic Consulting, the commenter also states the revenue and cost figures relied upon by OCII and SFMTA are inaccurate. Please see Response to Late Comment GEN-1 in Section 2 of this Exhibit D.

The commenter states that a bedrock principle of CEQA is that development projects should mitigate their environmental impacts to the extent feasible, citing CEQA Guidelines § 15126.4; the implication being that the CEQA analysis is flawed if mitigation is paid for by someone other than the developer. First, the developer is paying for mitigation; second, there is no such principle in CEQA or the cited CEQA Guidelines. Although the cited CEQA Guidelines limit mitigation that can be imposed on a developer to that proportional to the impact caused by the development, nothing in CEQA precludes a public agency from taking steps itself to undertake mitigation.

The commenter states the project improperly relies on an ad-hoc, "fair share" mitigation program, in violation of *Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173. This statement is incorrect.

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[1] Memorandum from Deputy City Attorney Brian F. Crossman to Adam Van de Water, Office of Economic and Workforce Development, regarding Economic Development Subsidies under Government Code Section 53083 (Nov. 6, 2015.)

Anderson First involved an EIR prepared for a proposed shopping center. The EIR assumed that certain road improvements would be constructed to address project-specific and cumulative traffic. The Court upheld this approach in most respects because the record contained evidence showing the necessary improvements would be constructed, either because the project could not proceed before they were completed, or because city policy committed to constructing them in the future. (130 Cal.App.4th at pp. 1186-1188.) The court rejected one such measure, however – the construction of a freeway interchange – because although the project had to contribute its fair share towards the cost of the interchange, no other funding had been secured, and no plan was in place to construct it; for this reason, the construction of the interchange was too speculative to rely upon to mitigate the traffic impacts of the project and other growth in the area. (130 Cal.App.4th at pp. 1188-1189. Compare *Save Our Peninsula Committee v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 141 [payment of adopted traffic impact fee upheld].)

In this case, the proposed project is subject to payment of an adopted fee for infrastructure, including transportation improvements. The payment of this fee – referred to as the "TIDF" – constitutes the proposed project's "fair share" towards the cost of the improvements funded by the fee. OCII's consultants have estimated that this fee will be approximately $17,436,000.

The commenter states the funding for implementation of the Transportation Management Plan ("TMP") is uncertain, such that implementation of the TMP is speculative. This statement is incorrect. The TMP has been proposed by the applicant as part of the project. (See Draft SEIR, pp. 5.2-55 – 5.2-69; see also Draft SEIR, Appendix TMP.) The TMP consists of various measures to provide safe and efficient access to the event center, to encourage transit use, and to provide facilities for pedestrians and bicyclists. The TMP establishes a specific performance standard that must be attained: to reduce single occupancy vehicle trips to/from the site, with a maximum auto mode split of 53 percent for event attendees during weekday peak event conditions (6:00 p.m. – 8:00 p.m.), and a maximum auto mode split of 59 percent for all trips during weekend peak event conditions (6:00 p.m. – 8:00 p.m.). The description of the TMP cannot credibly be described as skeletal; on the contrary, the Draft SEIR describes the TMP and its components in great detail.

The applicant is responsible for implementing the TMP. No public funds will be used for this purpose. Although the TMP is not a "mitigation measure," OCII has included implementation of the TMP in the Mitigation Monitoring and Reporting Program (MMRP) in order to track the applicant's implementation of the TMP. (See MMRP, Table D, approved November 3, 2015.) The TMP also includes monitoring and adaptation requirements to ensure the identified performance standard is met. No public subsidy of the TMP is required. Implementation of the TMP is not speculative.

The commenter states funding for capital improvements to the transportation network and for ongoing operational transit and traffic-control costs are speculative. The capital improvements consist primarily of expanding the existing Muni platform on Third Street immediately adjacent to the project site (as approved by OCII, referred to as the "Muni

UCSF/Mission Bay Station Platform Variant"), purchasing four Muni rail cars, upgrading the T Third Line, and installing signage and signals. The operational improvements consist of operating three special event shuttles to regional transit stations, increasing bus service along 16th Street, coordinating with other transit providers to provide increased special event service, deploying an expanded network of parking control officers, and implementing a plan to maintain access to the UCSF Mission Bay campus. Funding for these capital and operational costs is not speculative. The project is expected to result in $14.1 million in estimated project-generated tax revenues. The City has introduced legislation to create a special reserve account so that a portion of this revenue will be set aside to service the debt for capital costs, and to provide an ongoing source of revenue for operational costs. In approving the project, OCII and SFMTA have committed to the implementation of these measures. The record shows there will be sufficient revenue to cover these costs. The record therefore supports the conclusion that these measures will be carried out. (*Anderson First*, *supra*, 130 Cal.App.4th at pp. 1187-1188 [upholding adequacy of measure to address cumulative traffic as based on "a reasonable plan of actual mitigation that the relevant agency has committed itself to implementing."].)

The record provides ample evidence that OCII and SFMTA will follow through on the commitment to implement these measures. The record also contains information that project-related revenue will be sufficient to implement them. Under such circumstances, the record supports the conclusion that these measures will, in fact, be carried out. (See *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2007) 157 Cal.App.4th 149, 163 [agency did not have to identify funding source to carry out mitigation measures requiring remediation of contaminated wells; mitigation upheld absent an admission that funding would be inadequate]. Compare *Federation of Hillside & Canyon Associations v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1261-1262 [city violated CEQA by adopting mitigation measure requiring implementation of transportation plan, while admitting that revenue was insufficient to implement plan].) This commitment does not rely on revenue subsidies from other sources. Rather, the revenue required to implement these measures will be generated as a direct result of the proposed project.

Furthermore, the Supreme Court has made it clear that mitigation measures need not be perfect, and that each mitigation measure included in an EIR does not need to equate to an ironclad guarantee that impacts will be avoided. In *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376 (*Laurel Heights I*), the Supreme Court summarized the court's role in determining the adequacy of mitigation measures adopted under CEQA:

> [T]he question is only whether there is substantial evidence to support [the agency's] conclusion. [¶] In answering that question, the reviewing court must consider the evidence *as a whole.* That an EIR's discussion of mitigation measures might be imperfect in various particulars does not necessarily mean it is inadequate. …The proper judicial goal … is not to review each item of evidence in the record with such exactitude that the court loses sight of the rule that the evidence must be considered as a whole.

(*Laurel Heights I, supra*, 47 Cal.3d at pp. 407-408, italics original.) As further explained in *San Franciscans Upholding the Downtown Plan v. City & County of San Francisco*, "[w]ith regard to the discussion of mitigation measures, an EIR need not be exhaustive or perfect; it is simply 'required to describe feasible measures which could minimize significant adverse impacts.' [Citation.]" (102 Cal.App.4th 656, 696.) "[The court] reviews the EIR's discussion of mitigation measures by the traditional substantial evidence standard. It is not [the court's] task to determine whether adverse effects could be better mitigated."(*Ibid*., citing *Laurel Heights I, supra*, 47 Cal.3d at pp. 392-393.)

Thus, as the Supreme Court has affirmed, CEQA requires only that substantial evidence supports the agency's conclusion that the mitigation measures, as a whole, will mitigate (i.e., lessen, reduce, avoid) the significant impact. (*Laurel Heights I, supra*, 47 Cal.3d. at pp. 407-408; see also *id*. at p. 418 [upholding mitigation measure to reduce parking impact to less-than-significant level that required the university to "promote ongoing campus transportation systems, management programs, including promotion of transit, carpooling, vanpooling, and related activities"]; *Neighbors for Smart Rail v. Exposition Metro Line Const. Authority* (2013) 57 Cal.4th 439, 465-477 [upholding parking mitigation measure that required agency to monitor impact and work with local jurisdictions to implement permit program or other options, and which was considered sufficient to reduce impacts to less-than-significant levels]; see also *Environmental Council of Sacramento v. City of Sacramento* (2006) 142 Cal.App.4th 1018 [substantial evidence supported agency's findings that mitigation measures would be adequately funded and monitored despite some uncertainties regarding future conditions].

In reviewing the adequacy of mitigation measures, courts have emphasized that the "substantial evidence rule does not require certainty; substantial evidence is 'enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached."'(*Save Our Peninsula Committee v. Monterey County Board of Supervisors* (2001) 87 Cal.App.4th 99, 139, quoting CEQA Guidelines, § 15384, subd. (a); see also *Friends of Lagoon Valley v. City of Vacaville* (2007) 154 Cal.App.4th 807, 817-819 [rejecting Appellants' contention that there was no guarantee that mitigation measures would ever be constructed, holding "the project will contribute money to specific mitigation measures...all that is required by CEQA [] is that there be a reasonable plan for mitigation."]; *City of Marina v. Board of Trustees of California State University* (2006) 39 Cal.4th 341, 364-365 [uncertainties regarding the implementation of improvements do not render a fee-based mitigation plan inadequate].

Neighbors for Smart Rail, supra, 57 Cal.4th 439, is instructive. In that case, the respondent, a regional transportation agency, was required to address potential spill-over parking effects that might result from development of new transit facilities. Since the respondent lacked legal authority to regulate parking in affected areas, the EIR proposed (and the agency adopted) mitigation measures that contemplated that local municipal governments would, with assistance from the respondent, develop and implement permit parking programs or

other parking restrictions if monitoring proved that there was a problem. Project opponents objected that this mitigation was not legally enforceable. The Supreme Court responded that "CEQA, however, allows an agency to approve or carry out a project with potential adverse impacts if binding mitigation measures have been 'required in, or incorporated into' the project, or if [t]hose changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency." (*Id*. at 465, emphasis in original, internal citations omitted.) The Court noted that, while the lead agency "[could] not guarantee local governments will cooperate to implement permit parking programs or other parking restrictions, the record supports the conclusion these municipalities 'can and should' [citation] do so." (*Id*. at p. 519.) Thus, the question is not whether the lead agency can guarantee that impacts will be mitigated, but whether reasonable means for mitigating impacts are identified in the EIR, even if some uncertainty remains.

The commenter states that the current Board of Supervisors cannot enact an ordinance – in this case, the Special Reserve legislation – that limits the legislative discretion of future Boards. A future Board can always adopt policy decisions that reverse or modify the policy decisions of the current Board. That principle applies equally to decisions that are made as part of the CEQA process. (See *Napa Citizens for Honest Government v. Napa County Bd. of Supervisors* (2001) 91 Cal.App.4th 342 [agency has discretion to delete previously adopted mitigation measure].) The fact that a future legislative body may make policy decisions that differ from those of OCII, SFMTA, and the Board of Supervisors does not mean that the policy decisions made as part of the project are ephemeral. If that were true, then an agency could never cite its commitment to carry out a mitigation measure, based on the possibility that a future decision-maker could undo that commitment.

Even if there were some obligation to consider the possibility that the transportation-related commitments would not be carried out due to lack of funding, the SEIR provides that analysis. The SEIR analyzes the traffic impacts that would occur in the event SFMTA does not implement its "Muni Special Event Transit Service Plan" during peak evening events. (See DSEIR, pp. 5.2-191 to 5.2-208.) As the Draft SEIR explains:

> The City and County of San Francisco fully anticipates implementation of this plan and has identified sufficient funding. However, in order to provide a conservative CEQA analysis as well as information to the public and decision-makers, this group of impacts discloses the impacts of the proposed project if for some unknown reasons in the future, the City is unable to implement the Muni Special Event Transit Service Plan. This group of impacts analyzes only the Basketball Game scenario as the representative worst-case scenario.
>
> (Draft SEIR, p. 5.2-80.)

Further, as explained in the Draft SEIR, in the event the Transit Service Plan is not implemented, the Project Sponsor would be required to implement Mitigation Measure M-TR-18, which requires the project sponsor to implement specific transportation demand

management (TDM) measures that are intended to reach an auto mode share performance standard for different types of events.

Finally, in approving the proposed project, OCII and SFMTA both found that certain of the project's traffic-related impacts would be significant and unavoidable. OCII and SFMTA adopted this finding based in part on the possibility that a future Board of Supervisors or SFMTA Board could decline to provide adequate funding to implement these measures. In acknowledging this uncertainty, and adopting a "statement of overriding considerations" with respect to these potential impacts, OCII and SFMTA met their obligations under CEQA. (*Citizens for Open Government v. City of Lodi* (2012) 205 Cal.App.4th 296, 322; *Fairview Neighbors v. County of Ventura* (1999) 70 Cal.App.4th 238, 242.)

SECTION 6: RESPONSES TO LATE COMMENTS ON PLANS AND POLICIES

The comments and corresponding responses in this section cover topics discussed in SEIR Chapter 4, Plans and Policies, as augmented in RTC document Sections 13.5, 13.6, and 13.8. These include topics related to:

- Issue PP-1: Mission Bay South Redevelopment Plan and Variance Requirements
- Issue PP-2: Planning Code Section 321
- Issue PP-3: General Plan Consistency
- Issue PP-4: Plan Bay Area

Issues Raised by Late Commenters on Mission Bay South Redevelopment Plan and Variance Requirements

This response addresses all or part of the following comments, which are quoted below:

O-MBA17L5-2	O-MBA18L6-1	O-MBA19B3-1	O-MBA22B4-4
O-MBA24L9-2	O-MBA25L10-2	O-MAB27S9-1	O-MBA28L11-4
PH2-Lippe-1	PH2-Lippe-5	PH2-Hawley-1	

The November 17, 2014 Initial Study for the Project asserted the event center is an allowable secondary use under the Redevelopment Plan because "The proposed event center uses are considered 'nighttime entertainment uses.'"[1]

Then on July 26, 2015, Susan Brandt-Hawley, my co-counsel for the Alliance, submitted a letter to OCII arguing that "The Event Center is not 'Nighttime Entertainment' as Defined in the Mission Bay South Redevelopment Plan." (July 26, 2015, Brandt-Hawley Law Group letter, p. 3.)

Now, almost a year after the Initial Study and three months after Ms Brandt-Hawley's letter, the first suggestion that OCII might change its position on whether or how the event center is an allowable secondary use under the Redevelopment Plan is a short line in the Responses to Comments published on October 23, 2015, stating that "the Mission Bay Redevelopment Plan analyzed under the 1998 SEIR permits all of the project uses as either principally permitted uses (Office, Retail, Arts Activities, Open Recreation / Outdoor Activity Areas, Parking) or as secondary uses (Assembly and Entertainment Uses, including Nighttime Entertainment and Recreation building uses, as well as other uses such as Public Structures and Uses of a Nonindustrial Character)." (FSEIR/RTC, Volume 4, p. 13.3-27.)

Then, only three business days before the OCII hearing to determine this question, Ms. Bohee's memorandum for the first time publicly asserts a rationale for considering the event center an allowable secondary use as either a "recreation building" or a "public structure or use of a nonindustrial character." (See Attachment C, pp. 6-7.) Aside from the substantive inadequacy of the rationale, which will be the topic of separate correspondence, this short turnaround time on a question of this importance deprives the public, and my client, of a fair trial under subdivision (b) of section 1094.5 of the Code of Civil Procedure.

In addition, Attachment C states that the "determination" that the event center is a "public structure or use of a nonindustrial character" is "consistent with OCII precedent; for example, in approving the UCSF Medical Center the Executive Director found that it constituted a secondary use as a public structure notwithstanding those members of the public generally pay for medical services provided at the center." (Attachment C, p. 7.)

Footnote:

[1] "The proposed project would result in the construction and operation of an event center, office and retail uses, parking facilities and open space areas within the project site. The retail and office uses would be generally consistent with the previously proposed uses for the site, such that no new or more severe conflicts with land use character would occur. The proposed event center uses are considered "nighttime entertainment uses...." (Initial Study, p. 33)

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA17L5-2]*)

I write today regarding the OCII's failure to require a variance or "variation" for this Project under section 305 of the Mission Bay South Redevelopment Plan ("Plan"). The November 2, 2015, letter from Susan Brandt-Hawley, my co-counsel for the Alliance, demonstrates this Project is not an allowable secondary use under the Plan. Thus, a variance is not available because, as shown by Brandt-Hawley, the Project "will change the land uses on this Plan." (Plan, § 305.) However, in the alternative, if the Project is an allowable secondary use under the Plan, then the OCII must process this Project application as a variance and make the findings required by Plan section 305 before Project approval.

Both California and San Francisco planning law provide a process for landowners to obtain a "variance" from the "uniformity" of zoning limits that, while appropriate for the zone district in general, would impose undue hardship due to unique characteristics of a specific parcel. Government Code section 65906 governs the grant of zoning variances by municipalities and prohibits local agencies from granting "special privileges" to individual landowners. Similarly, San Francisco Planning Code, section 305, subdivision (a), provides that a variance permit must be approved for any exception to the requirements of the Planning Code. Subdivision (c) thereof mirrors the requirements of state law, and requires a finding that "owing to such exceptional or extraordinary circumstances the literal enforcement of specified provisions of this Code would result in practical difficulty or unnecessary hardship ...."

Similarly, the Plan includes a variance provision that reflects the same substantive requirements as Government Code section 65906 and Planning Code section 305:

> The Agency may modify the land use controls in this Plan where, owing to unusual and special conditions, enforcement would result in undue hardships or would constitute an unreasonable limitation beyond the intent and purposes of these provisions. Upon written request for variation from the Plan's land use provisions from the owner of the property, which states fully the grounds of the application and the facts pertaining thereto, and upon its own further investigation, the Agency may, in its sole discretion, grant such variation from the requirements and limitations of this Plan. The Agency shall find and determine that the variation results in substantial compliance with the intent and purpose of this Plan, provided that in no instance will any variation be granted that will change the land uses on this Plan.

(Plan, § 305.)

Because the Plan's variance provision imposes virtually identical requirements as Planning Code section 305, both apply. (Plan, §'s 101 ["Regardless of any future action by the City or the Agency, whether by ordinance, resolution, initiative or otherwise, the rules, regulations, and official policies applicable to and governing the overall design, construction, fees, use or other aspect of development of the Plan Area shall be (i) this Plan and the other applicable Plan Documents, (ii) to the extent not inconsistent therewith or not superseded by this Plan, the Existing City Regulations and (iii) any new or changed City Regulations permitted under this Plan"]; 304.9.C.(iv)).

Here, the Project creates at least sixteen inconsistencies with the Design for Development (D4D). The OCII now proposes to amend the D4D, the Owner's Participation Agreement (OPA), and other Plan documents to resolve these inconsistencies by, including but not limited to, raising maximum height limits from 90 to 135 feet, allowing a second 160+ foot tower, increasing bulk limits to accomodate the arena, and changing arena setbacks, street wall heights, view corridors, public rights of way, and parking standards. (See e.g., Draft SEIR, pp. 4-7 - 4-9, § 4.2.4; Proposed Resolution 2015,

exhibit A; Memorandum to the OCII from Executive Director Tiffany Bohee for Items 5(a), 5(b), 5(c), 5(d) & 5(e) the November 3, 2015, CCII meeting agenda, pp. 4, 22.)

Even if the Project's land uses are allowable secondary uses, these amendments "modify the land use controls in this Plan" as provided in Plan section 305. But the Project Sponsor has made no showing that due to "unusual and special conditions, enforcement would result in undue hardships or would constitute an unreasonable limitation beyond the intent and purposes of these provisions." (Plan, § 305.)

"Variances are, in effect, constitutional safety valves to permit administrative adjustments when application of a general regulation would be confiscatory or produce unique injury." (Curtin's California Land Use and Planning Law, p. 55.) Variance requirements also implement the State Planning and Zoning Law's requirement of "uniformity" of zoning rules within zoning districts.(See Gov. Code, § 65852 ["All such [zoning] regulations shall be uniform for each class or kind of building or use of land throughout each zone, but the regulation in one type of zone may differ from those in other types of zones;" *Neighbors in Support of Appropriate Land Use v. Cnty. of Tuolumne* (2007) 157 Cal.App.4th 997, 1008 (Neighbors).) The State Planning and Zoning Law also requires vertical consistency between local agencies general plans, zoning ordinances, and land use permits.(Gov. Code, § 65860, subd. (c) ["County or city zoning ordinances shall be consistent with the general plan of the county or city... ."]; see DeVita v. Cnty. of Napa (1995) 9 Cal.4th 763, 772 ["A general plan is a 'constitution' for future development [citation omitted] located at the top of 'the hierarchy of local government law regulating land use'"].)

California courts have vigorously enforced the requirements for granting a variance, and have developed extensive jurisprudence to corral the many stratagems local agencies have used to avoid its requirements. (See e.g., *Topanga Association v. County of Los Angeles* (1974) 11 Cal.3d 506, 511-12 (Topanga); *Orinda Assn. v. Board of Supervisors* (1986) 182 Cal.App.3d 1145, 1166 *(Orinda Assn*) ["A zoning scheme, after all, is similar in some respects to a contract ... If the interest of these parties in preventing unjustified variance awards for neighboring land is not sufficiently protected, the consequence will be subversion of the critical reciprocity upon which zoning regulation rests..."].)

Variance findings must focus on a comparison of the subject property to other properties in the zone district with which the variance is intended to bring it into parity, and the benefits to the community or "public interest" associated with a zoning exception are irrelevant. (*Orinda Assn, supra*, at p. 1166.) By amending the Plan documents to accommodate this Project, the OCII would cast these requirements aside and grant a "special privilege" to this Project Sponsor.

In *Neighbors*, rather than adopt a rezone or grant a variance, the County created a special exception to the zoning ordinance for one landowner by including it in a development agreement adopted under the development agreement law. (*Neighbors, supra*, 157 Cal.App.4th at p. 1003.) In rejecting this stratagem, the Court in *Neighbors* noted that there are limits on the power to rezone: "'The foundations of zoning would be undermined, however, if local governments could grant favored treatment to some owners on a purely ad hoc basis ... [R]ezoning, even of the smallest parcels, still necessarily respects the principle of uniformity." (Id. at pp. 1009-10.)

A similar result occurred in *Trancas Prop. Owners Assn. v. City of Malibu* (2006) 138 Cal.App.4th 172 (*Trancas*). In *Trancas*, the court held an exemption from a city's zoning requirements accomplished by contract functionally resembled a variance, and held that "such departures from standard zoning by law require administrative proceedings, including public hearings ... followed by findings for which the instant [density] exemption might not qualify... Both the substantive qualifications and the procedural means for a variance discharge public interests. Circumvention of them by contract is impermissible." (Id. at p. 182.)

In sum, the OCII's proposed grant of zoning exceptions to this Project by way of amending the Plan documents rather than by variance violates the Plan, the variance requirements of the San Francisco Planning Code and state law, and the uniformity requirement of state law. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA18L6-1]*)

The Mission Bay Alliance (the Alliance) contends that the Warriors' Event Center is unlawfully inconsistent with every use allowed by the Mission Bay South Redevelopment Plan (the Plan). Although the Alliance raised this issue in comments on the Draft Subsequent EIR (DSEIR), both the Responses to Comments in the Final SEIR and OCII's findings of project consistency remain materially inadequate.

The Plan designates uses allowed at a 'Commercial Industrial/Retail' site. The Alliance notes that while OCII now concedes that a sports arena is not within the scope of allowed 'principal uses' in that zoning, OCII contends that an arena is consistent with 'secondary uses.' As this letter will explain, all such secondary uses are similarly and demonstrably insufficient to permit the Warriors' sports arena.

Nighttime Entertainment. The Initial Study concluded, in error, that the DSEIR did not need to address land use issues — at all. It asserted that the entire Event Center, including the sports arena use, somehow met the secondary 'Nighttime Entertainment' use analyzed in the 1998 Plan EIR. Secondary uses were then generally referenced in the DSEIR (e.g., pp. 3-8, 3-51, 4-5, 5.2-115), but there was no discussion of which category of secondary use would be allocated to the Event Center, inferring acceptance of the Nighttime Entertainment category.

The Plan describes Nighttime Entertainment in terms of small-scale local uses like dance halls, bars, nightclubs, discotheques, nightclubs, private clubs, and restaurants. (Plan, p. 50.) At the time of the 1998 EIR, several small neighborhood bars occasionally offered nighttime entertainment, consistent with the secondary use category. Such minor uses were compatible with the 3rd Street Corridor and the waterfront. Clearly, no mammoth regional entertainment venue was anticipated in Mission Bay South and no such use was considered in the 1998 Plan EIR.

And while professional basketball games are held at night, the Event Center also projects 31 annual events "related to conventions, conferences, civic events, corporate events and other gatherings," with an estimated attendance of between 9,000 and 18,500 patrons. "[T]he majority of events are expected to occur during day time hours." Such events are not 'Nighttime Entertainment.'

The Director's currently---proposed findings that the sports arena is

'Nighttime Entertainment' contemplated as a secondary use in the Plan are unsupported. The findings fail to match the scope and impacts of a professional sports venue with the analysis or description of uses in the Plan or in the 1998 EIR. The findings are fatally conclusory; that somehow a professional sports venue would be "similar" to a nightclub or bar use in the 'Nighttime Entertainment' category "because" it will serve alcohol, provide amplified live entertainment, and provide a venue for evening gatherings. The findings fail to address the core inconsistency of a regional sports arena with the intent of the adopted Plan and the Design for Development, which focus on commercial entertainment uses in Mission Bay North to complement the Giants' ballpark.

OCII's reliance on the negative; to wit, that the 'Nighttime Entertainment' secondary use has no specific size limitations, is not enough. The Plan provides for the continued development of Mission Bay South as a walkable urban community intended to facilitate world-class medical and biotechnology development. The Event Center project violates the Plan Area Map carefully designed in classic, walkable Vara Blocks. (Plan, Attachment 2, p. 40.) Neither the Plan nor the Design for Development contemplate any uses comparable in scope or impact to the Event Center as 'Nighttime Entertainment.'

That being said, in fact in the Final SEIR and as reflected in the proposed Plan consistency findings, OCII now implicitly agrees with the Alliance that the 'Nighttime Entertainment' secondary use standing alone does not encompass a sports arena. Now, OCII additionally relies on the Plan's alternate 'secondary uses.' No such uses are consistent with the Plan, as explained below.

Recreation Building. One of the Plan's secondary use categories is for an undefined 'Recreation building.' (Plan, p. 15.) The Plan describes 'Outdoor Recreation' as "an area, not within a building, which is provided *for the recreational uses of patrons* of a commercial establishment." (Plan, p. 50, italics added.)

OCII's proposed findings as to the 'Recreation building' category stretch the regional sports arena use not only beyond what was contemplated by the Plan or studied in the 1998 EIR, but beyond logic. To state the obvious: there is a difference between 'recreation' and 'entertainment.' Both involve enjoyment and leisure, and may involve ancillary eating and drinking, and the Alliance has no quarrel with the Director's reference to recreation as "something people do to relax or have fun; activities done for enjoyment." (OCII Proposed Secondary Use Determination, p. 6.) But myriad dictionary definitions confirm and it cannot readily be denied that 'recreation' is commonly understood to involve one's personal physical activities while 'entertainment' refers to events or performances designed to entertain others.

None of the Plan's various references to 'entertainment' include athletic activities normally considered 'recreation:' Adult Entertainment [bookstore or theater], Amusement Enterprise [video games], Bar [drinking and theater], Theater [movies and performance]. (Plan, Attachment 5, pp. 44-51.) Consistently, the 1998 EIR's discussion of 'recreational' land uses focused in turn on open space, bicycles, parks, and water-based activities. (Mission Bay EIR, Volume IIB, pp. V.M. 15-28.).

In context, the Plan's reference to 'Recreation building' as a secondary use contemplates participatory recreational uses like the 'recreation facilities' referenced in the 1998 Plan EIR for the existing golf driving range and in-line hockey rink, with the expressed expectation that the size of recreational 'facilities' would decrease as redevelopment of the Plan area progressed. (OCII Proposed Secondary Use Determination, p. 6.)

Reliance on the secondary use of 'Recreation building' is unsupported.

Public Structure or Use of a Nonindustrial Character. As presented in the Plan, the category of "other secondary uses" labeled 'Public structure or use of a nonindustrial character' references one secondary use, not *two*. (Plan, p. 13.) The use is required to be public, and either a structure or a use.

The interpretation urged by the Director is, again, strained beyond the plain words of the Plan. 'Public' is not defined in the Plan and so its common meaning is assumed. But as proposed in the consistency findings, OCII interprets a 'public' use as simply requiring that the public be somehow 'served.' That would encompass every kind of principal and secondary use listed in the Plan, from child care to animal care to hotel, etc., and renders the category meaningless: i.e., "Any use is ok."

Instead, a public structure or use is commonly understood to be under the control and management of a public agency for the benefit of its constituency — such as the University of California1 or the City of San Francisco. The Plan provides a description of a range of anticipated public improvements in Attachment 4. This list includes both public buildings and public uses. None of the public improvements listed in Attachment 4 include anything like a private professional sports arena.

The Event Center is a private project and is not within the scope of the secondary use category for a public structure or use of a nonindustrial character.

Director's Findings. As explained, the sports arena uses that are the impetus for the Event Center project are not allowed by the Plan's allowed principal or secondary uses. An allowed use is prerequisite for a finding of Plan consistency. The Alliance will not belabor the myriad other inconsistencies with the Plan's objectives, design, incompatibility with UCSF, and creation of significant environmental impacts, as those have been described in the DSEIR comments and throughout the administrative record, but hereby objects to their insufficiencies and lack of supporting substantial evidence for the Plan consistency finding.

Consideration of the Event Center project must be preceded by amendment of the Plan to be consistent with the delineated principal and secondary uses and the adopted Plan Area Map of the Mission Bay South Redevelopment Plan. (*Mission Bay Alliance, Susan Brandt-Hawley, letter, November 2, 2015 [O-MBA19B3-1]*)

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a. Land Use. The Alliance submitted a letter from the undersigned counsel on November 2, 2015, reiterating in detail how the proposed Event Center's sports arena is not consistent with any of the principal or secondary uses allowed by the Mission Bay South Redevelopment Plan, including the secondary uses now being invoked by OCII for the first time in the Final SEIR. That letter is here incorporated by reference. The Draft SEIR did not address land use issues because the Initial Study and Notice of Preparation posited that all of the uses proposed by the Event Center were encompassed within the 'Nighttime Entertainment' secondary use that had been analyzed in the 1998 Mission Bay EIR.

That EIR's refusal to analyze the project's land use inconsistencies has not been cured by the Responses to Comments, which now fails and/or inaccurately responds to the Alliance's DSEIR comments about secondary use categories, the Event Center's conflicts with Mission Bay South design criteria, including Vara Blocks, and impacts to community character. The inadequate Responses to Comments as to these land use inconsistencies constitutes a separate ground of legal error.

The SEIR should be revised and recirculated after amendment of the Mission Bay South Redevelopment Plan to provide for a consistent principal or secondary use. (*Mission Bay Alliance, Name, letter, November 3, 2015 [O-MBA22B4-4]*)

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b. This Project is inconsistent with the Redevelopment Plan.

A basic premise of the Planning Commission decisions in Resolution 14702 and Motion 17709, and a fundamental rationale for "superseding" section 321's guidelines in favor of the Redevelopment Plan and Redevelopment Plan documents, were the Commission's findings that the Redevelopment Plan met standards set in section 321, the San Francisco Master Plan, the priority policies in Planning Code section 101.1, and the requirements of redevelopment law. In short, in order to be eligible for the office space allocation available under motion 17709, the Project must be consistent with the Redevelopment Plan.

This Project is inconsistent with the Redevelopment Plan because, as demonstrated in the November 2, 2015, letter from Susan Brandt-Hawley, my co-counsel for the Alliance (attached as Exhibit 1), this Project is not an allowable secondary use under the Redevelopment Plan. However, in the alternative, as shown in my November 2, 2015, letter (attached as Exhibit 2), if the Project is an allowable secondary use under the Redevelopment Plan, then it requires a variance under section 305 of the Plan before Project approval. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 5, 2015 [O-MBA24L9-2]*)

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2. The Project does not comply with the Mission Bay South Redevelopment Plan as discussed in my November 5, 2015, letter to the Planning Commission attached as Exhibit 1. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 6, 2015 [O-MBA25L10-2]*)

Consideration of the Place of Entertainment Permit is premature and unlawful because the entertainment uses proposed by the Warriors sports arena are not a primary or secondary use allowed under the Mission Bay South Redevelopment Plan, as explained by my co-counsel Susan Brandt-Hawley on behalf of the Alliance in submissions to the OCII in July, October, and November 2015, and testimony before the OCII on November 3, 2015. (*Mission Bay Alliance, Soluri Meserve, letter, November 10, 2015 [O-MAB27S9-1]*)

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2. The Project does not comply with the Mission Bay South Redevelopment Plan as discussed in my November 5, 2015, letter to the Planning Commission attached as Exhibit 1. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 9, 2015 [O-MBA28L11-4]*)

And a couple of points. First of all, on the secondary use finding, Susan Brandt-Hawley, my co-counsel, has sent a letter by E-mail yesterday, contesting the secondary use -- the appropriateness of finding that this as an allowable secondary use under the Redevelopment Plan. So, I would encourage you to take a look at that. She's also going to speak today to flesh out the reasons for that.

If it turns out that it is a proper secondary use, then you actually need a variance under the Redevelopment Plan. You can't just amend the Design for Development.

And I have a letter on that point, which I'd like to submit to you today, which I also E-mailed yesterday, and that is here. (*Thomas N. Lippe, Transcript, November 3, 2015 [PH2-Lippe-1]*)

And then, finally, I have a letter from my co-counsel, Soluri Meserve, on the noncompliance of the EIR by CEQA. (Letter submitted to staff.) (*Thomas N. Lippe, Transcript, November 3, 2015 [PH2-Lippe-5]*)

We all support the Warriors. That's not the issue here today, but the public looks to this Commission to follow the environmental laws in every way before approving this project or considering approval.

You've received a number of letters from me and others regarding environmental problems, and yet the Final EIR that we just received a little over a week ago, with thousands of pages, the approvals are being rushed through, which is unfair to the Commission and unfair to the public, because a lot of the environmental questions have not been solved.

I would like to turn in, for the record, just a few letters that I've sent to you. But these are hard copies, in case you don't have them yet. (Letters submitted to staff.)

I'd like to focus, in just this very short amount of time, on a really critical underlying issue and problem here that needs to be solved that we brought up in the Draft EIR comments in July -- that the EIR declined to study in any way the land-use consistency of this plan.

The South Mission Bay Redevelopment Plan sets out a very careful, planned community in these classic bare blocks to allow development of the biotech industry and other compatible uses.

The EIR did not study land use, claiming that this qualified as a secondary nighttime entertainment. And as I explained in my letter, none of the secondary uses -- nighttime entertainment, that's supposed to be for bars and small evening establishments; a recreation building, which is being claimed, when this is actually entertainment, which is not an active recreation, but it's, in fact, something that people watch; or a public structure or use, which, in fact, this is not, because it's not a public building.

You can fix this problem by considering amendment of the Redevelopment Plan. But right now, this project is directly inconsistent and does not qualify for -- as a secondary, much less a primary use.

So, we'd ask you to take some more time, look as the EIR comments that we've submitted, and, in particular, take a hard look at these findings that are not supportable regarding the secondary use.(*Susan Brandt-Hawley, Transcript, November 3, 2015 [PH2-Hawley-1]*)

Response to Late Comment PP-1: Secondary Uses under the Mission Bay South Redevelopment Plan and Variance Requirements

The commenter asserts that the Project should seek a variation under Section 305 of the Mission Bay South Redevelopment Plan ("Plan") to approve the Project and equates the Plan's variation procedure with the separate and distinct state and local planning standards governing variances. The commenter also states that variance findings could not be made in any event because a variance is not authorized pursuant to the Section 305 of the San Francisco Planning Code and Government Code section 65906. The commenter also asserts that approval of the Project is inconsistent with the requirement of Government Code section 65852 relating to the uniformity of zoning rules within zoning districts.

The Plan establishes the "basic land use controls within which specific redevelopment activities in the Plan Area will be pursued." (Plan, § 101.) The Plan also provides that OCII may "modify the land use controls in this Plan where owing to unusual and special conditions, enforcement would result in undue hardships or would constitute an unreasonable limitation beyond the intent and purposes of these provisions." (Plan, § 305.) Significantly, the Project did not seek, and does not need, a modification to the land use controls in the Plan.

The Project conforms with the planning and design controls described in Section 300 (in particular, Sections 302.4 and 304) of the Plan, the Land Use Map (Attachment 3 to the Plan), and the Zone Map (Attachment 3a to the Plan). The Plan's land use controls establish permitted uses, a maximum height limitation of 160 feet, the amount of leasable square footage that can be developed in each land use district, and floor area ratio. The Project complies with all of the maximum development standards established under the Plan. The Project, however, does require modification to the Mission Bay South Design for Development ("D for D"), which provides ancillary design standards and guidelines that must be consistent with the Plan and that are subject to amendment by the Commission on Community Investment and Infrastructure ("CCII") in its sole discretion. On November 3, 2015, CCII approved, by Resolution 71-2015, D for D amendments that are consistent with the Plan's land use controls and the authority granted to OCII under Section 306 of the Plan to establish "development and design controls necessary for the proper development of both private and public areas within the Plan Area." To the extent that the Project requires D for D amendments and those amendments are consistent with the Plan, OCII need not consider a variation under Section 305 to approve the Project. OCII determined, by Resolution No. 71-2015 (Nov. 3, 2015), that the D for D amendments "comply with the land use controls of the Plan and are consistent with the Plan's redevelopment objectives."

Moreover, the commenter's reliance on state and local planning standards regarding variances is inapposite. In reviewing and approving the Project, OCII exercises its state authority under the Community Redevelopment Law, Cal. Health & Safety Code Sections 33000 et seq., as modified by the Redevelopment Dissolution Law, Cal. Health & Safety Code Sections 34170 et seq. Under this authority, OCII must apply, among other things, the Plan's land use controls to fulfill the state mandate to wind down redevelopment projects by

expeditiously completing enforceable obligations, such as the Mission Bay South Owner Participation Agreement, that pre-date redevelopment dissolution. In completing these obligations, OCII, as the successor agency to the former redevelopment agency, exercises state—not local—authority.

The Planning and Zoning Law (including Government Code sections 65906 and 65852), which are referenced in the comment, are not applicable to OCII's efforts to implement the Plan. The Planning and Zoning Law (§ 65000 et seq.) states that its provisions regulating zoning apply to counties and general law cities, but not to charter cities (such as the City and County of San Francisco). (Gov. Code, § 65803.) Both former redevelopment agencies and successor agencies to former redevelopment agencies are "separate legal entit[ies] from the city or county that established it." (*City of Cerritos v. State of California* (2015) 239 Cal.App.4th 1020, 1028; see also Health & Safety Code, § 34173, subd. (g).) Therefore, the Planning and Zoning Law does not apply to a redevelopment agency's development of, or modifications to, documents implementing a redevelopment plan. (*PR/JSM Rivara LLC v. Community Redevelopment Agency* (2009) 180 Cal. App. 4th 1475, 1482-1483.)

Furthermore, Section 305 of the San Francisco Planning Code is not applicable to projects proposed within the Plan Area. As set forth in the Plan, the "Plan and the other Plan Documents, including the D for D, shall supersede the San Francisco Planning Code in its entirety, except as otherwise provided herein." (Plan, § 101.) Therefore, the commenter is incorrect that Section 305 of the San Francisco Planning Code applies to OCII's action on the Project.

The commenter cites to a number of published decisions concerning variance and uniformity requirements under the Land Use and Planning Law. (*Neighbors in Support of Appropriate Land Use v. Cnty. of Tuolumne* (2007) 157 Cal.App.4th 997, 1008; *DeVita v. Cnty. of Napa* (1995) 9 Cal.4th 763, 772; *Topanga Association v. County of Los Angeles* (1974) 11 Cal.3d 506, 511-12; *Orinda Assn. v. Board of Supervisors* (1986) 182 Cal.App.3d 1145, 1166; *Trancas Prop. Owners Assn. v. City of Malibu* (2006) 138

Cal.App.4th 172, 182.) As the Land Use and Planning Law issues addressed in those decisions are not applicable to implementation of a redevelopment plan by successor agencies to former redevelopment agencies, the decisions are distinguishable. Notably, these decisions illustrate that changes to land use controls may generally be implemented through a variety of methods, including rezoning, text changes to land use controls, variances, or conditional use permits where authorized. The Plan does not limit the manners in which OCII may exercise its discretion to implement changes to the D for D. Therefore, neither the Plan nor the case law cited by the commenter, support the conclusion that OCII was required to approve a variation pursuant to Section 305 of the Plan in order to approve the Project.

Although – as discussed above – Government Code section 65852 and its uniformity requirement is not applicable to the successor agency, if it were applicable, OCII's approval

of the Project would be consistent with that requirement. Government Code section 65852 provides that zoning regulations "shall be uniform for each class or kind of building or use of land throughout each zone, but the regulation in one type of zone may differ from those in other types of zones." The Project is located in the "Commercial Industrial / Retail" land use district. (Plan, § 302.4.) The district includes an expansive list of secondary uses that may be permitted within the land use district provided that the Executive Director finds that the secondary use, at the size and intensity contemplated and at the proposed location, will provide a development that is necessary or desirable for, and compatible with, the neighborhood or the community. (Plan, §§ 302, 302.4(B).) The Project was approved following the uniform procedures set forth in the Plan to approve a secondary use. (See Secondary Use Findings.) Therefore, the Project was not provided any exemptions from the standard requirements set forth in the Plan for a project seeking to develop a secondary use.

The commenter asserts that the event center component of the Project does not qualify as principal use or secondary use as nighttime entertainment, a recreation building, a public structure, or a use of a nonindustrial character. OCII disagrees.

The commenter states that OCII concluded that the event center does not constitute a principal use authorized within the "Commercial Industrial / Retail" land use district. The commenter is incorrect. As demonstrated in OCII's secondary use findings, a number of uses of the event center qualify as principal uses. Principal uses include office use, retail sales and services, restaurants, arts activities, art spaces, and outdoor activity areas. (Secondary Use Findings, Table 1.) In addition to these principal uses, OCII's secondary use findings demonstrate that the event center qualifies as a secondary use under four separate secondary uses authorized within the "Commercial Industrial / Retail" land use district: nighttime entertainment, recreation building, public structure, and a use of a nonindustrial character. OCII's secondary use findings conclude that the event center is permissible as a secondary use under each of these four separate secondary use categories.

Nighttime Entertainment

The commenter states that the event center does not constitute a nighttime entertainment secondary use. First, the commenter asserts that nighttime entertainment uses are intended to cover "small-scale" and "minor" uses and does not encompass larger uses such as the event center. There are no size limitations on nighttime entertainment, and, in fact, some of the illustrative categories of nighttime entertainment uses included in the Plan could be very large.

Second, the commenter alleges that the event center cannot be considered a nighttime entertainment use because the majority of events at the event center will occur during daytime hours. The commenter is incorrect that the majority of events will occur during daytime hours. As discussed in the SEIR, pp. 3-38 to 3-42, the majority of events anticipated at the Event Center would occur in the evening hours. While some events will occur during the day, many of those events would be principally permitted as Arts Activities (such as Disney on Ice). Moreover, nighttime entertainment does not prohibit daytime activities. The Nighttime Entertainment subcategory of Assembly and Entertainment uses only requires

the use be "evening-oriented." (Plan, Attachment 5.) As discussed in the Final SEIR and OCII's secondary use findings, because the majority of events are anticipated to occur in the evening hours, the event center is considered an evening-oriented use. (See, e.g., Secondary Use Findings, p. 5.)

Third, the commenter states that an event center is not similar to a nightclub or bar and, thus, does not qualify as a nighttime entertainment use. The Plan includes an illustrative list of uses that may constitute nighttime entertainment uses. The Plan does not limit the definition of nighttime entertainment uses. The Plan provides that nighttime entertainment includes "other similar evening-oriented entertainment activities, excluding Adult Entertainment, which require dance hall keeper police permits or place of entertainment police permits which are not limited to non-amplified live entertainment…" (Plan, Attachment 5.) As explained in OCII's secondary use findings, the Project proposes evening-oriented entertainment activities that require a place of entertainment permit and include amplified live entertainment. Therefore, the event center component of the Project qualifies as a nighttime entertainment pursuant to the Plan.

Fourth, the commenter asserts that the event center cannot constitute an authorized nighttime entertainment use because it violates the Plan Area Map which was designed in walkable vara blocks. The Project includes amendments to the D for D, including amendments to reconfigure the on-site varas. This request does not violate the Plan. The Plan does not require that all streets identified on the Plan Area Map must be constructed. Both the Plan (Attachments 2, Plan Area Map, and Attachment 3, Redevelopment Land Use Map) and the D for D (Map 3, Plan Boundary, Development Block and street Grid Map) illustrate the Mission Bay South street grid system, but both documents provide flexibility regarding specific street alignments. The Plan Area Map included as Attachment 2 to the Plan notes that "[s]treet alignments… are indicated for illustrative purposes." (Plan, Attachment 2.) The Plan expressly states that "changes in the existing street layout within the Plan Area . . . shall be in accordance with the objectives of this Plan." (Plan, § 303.1.) Similarly, the D for D states: "Specific roadway locations and alignments may vary." (D for D, Map 3.) Significantly, the D for D Design Guidelines encourage the development of publicly-accessible open space and walkways to enhance the pedestrian experience. (D for D, p. 75.) Although the Project reconfigures the varas illustrated in the Plan and D for D, it provides roughly equivalent privately-owned but publically accessible pedestrian access and open space. As demonstrated in OCII's secondary use findings, the Project including the event center, conforms to these objectives of the Plan and D for D. (Secondary Use Findings, p. 25.)

Therefore, OCII disagrees with the commenter. As discussed in further detail within OCII's secondary use findings, the event center constitutes nighttime entertainment use. (Secondary Use Findings, pp. 5-6.)

Recreation Building

The commenter argues that the event center cannot be considered a recreation building because "recreation" and "entertainment" are distinct uses. While the commenter does not

believe the event center should constitute "nighttime entertainment," the commenter argues that the event center is an "entertainment" use and, thus, it is necessarily not a "recreation" use. The commenter's opinion cannot be reconciled with the plain language of the Plan. One of the secondary use categories authorized within the "Commercial Industrial / Retail" land use district is "assembly and entertainment" uses. (Plan, § 302.4(B).) "Recreation buildings" are listed as a subset of "assembly and entertainment" secondary uses within the "Commercial Industrial / Retail" land use district. (*Ibid*.) Therefore, by definition, a "recreation building" is an "assembly and entertainment" use within the context of the Plan.

The commenter also suggests that the "recreation building" secondary use category only covers "participatory recreation uses." The Plan includes no such limitation. OCII reviewed the Mission Bay SEIR and related materials associated with approval of the Plan. OCII disagrees that the intent, in adopting the Plan, was to narrowly limit the definition of a "recreation building" to only cover participatory recreation uses. This conclusion is consistent with the Plan's discussion of "outdoor recreation spaces." Specifically, the Plan demonstrates that outdoor recreation spaces are not limited to participatory recreation spaces; outdoor recreation spaces include "passive recreation spaces." (Plan, § 104(C) [Neighborhood Environment Objective 5, Policy 6].)

Therefore, OCII disagrees with the commenter. As discussed in further detail within OCII's secondary use findings, the event center constitutes recreation building use. (Secondary Use Findings, p. 6.)

Public Structure or Use of a Nonindustrial Character

The commenter asserts that to qualify as a secondary use under the "other uses" category, a project must constitute a public structure *and* a use of a nonindustrial character. OCII disagrees with the commenter's interpretation of the Plan. The Plan states the "other uses" category within the "Commercial Industrial / Retail" land use district includes a "public structure *or* use of a nonindustrial character." (Plan, § 302.4(B) (emphasis added).)

While the two uses are listed on one line in the Plan, the formatting of the listing of "other uses" was not intended to require that a project meet both definitions in order to qualify as a secondary use. This conclusion is supported by the fact that the Plan includes other examples of multiple uses being listed together on a single line. For example, principal uses within the "Commercial Industrial" and "Commercial Industrial / Retail Land Use Districts" include either a "greenhouse or plant nursery." (Plan, §§ 302.3(A), 302.4(A).) Similarly, within the UCSF Land Use District an "elementary school or secondary school" is permitted. (Plan, §§ 302.5; see also Plan, § 303.3(A) [authorizing any of the following temporary uses: "exhibition, celebration, festival, circus or neighborhood carnival"].) A school is not required to be both an elementary school *and* a secondary school to be permitted. OCII interprets "public structure or use of a nonindustrial character" in the same manner. A use that is either a public structure or a use of a nonindustrial character may be authorized as a secondary use within the "Commercial Industrial / Retail" land use district.

However, even if a project was required to be a public structure *and* use of a nonindustrial character to qualify under the "other uses" category, OCII's secondary use findings demonstrate that the event center is both a public structure and a use of a nonindustrial character. The commenter asserts that the event center is not "public" because the term requires the use to be under the control and management of a public agency for the benefit of its constituency. OCII disagrees. "Public structures" often include privately owned or operated buildings. For example, museums are frequently owned by private entities and the Moscone Center, while publicly-owned, is operated by a private contractor. OCII determined that the event center is a "Public Structure" because it will serve as a new, civic landmark that will host a variety of entertainment, convention, conference, cultural, and civic events.

The commenter states that the list of "proposed public improvements" included in Attachment 4 to the Plan demonstrates the "public structures" permitted as a secondary use within the "Commercial Industrial / Retail" land use district do not include uses such as the event center. The commenter is confusing "public improvements" permitted pursuant to the Plan and "public structures" authorized as secondary uses within the "Commercial Industrial / Retail" land use district. Attachment 4 to Plan lists various "public improvements" anticipated within the Plan Area. Those public improvements are not considered secondary uses within the Plan Area. Public improvements included in Attachment 4 to the Plan are authorized uses pursuant to Section 408 of the Plan. Those public improvements are separate and distinct from "public structures" that may be authorized as principal or secondary uses in a land use district.

Therefore, OCII disagrees with the commenter. As discussed in further detail within OCII's secondary use findings, the event center constitutes both a "public structure" and a "use of a nonindustrial character," both of which are secondary uses within the "Commercial Industrial / Retail" land use district. (Secondary Use Findings, pp. 7-8.)

The commenter states the event center is inconsistent with the Plan's objectives and that the secondary use findings are generally inadequate. OCII disagrees. As the commenter did not identify any alleged inconsistencies other than those discussed above, OCII cannot provide a further response. However, OCII directs the commenter to the secondary use findings which provide a detailed discussion of the event center's compatibility with Plan.

The commenter asserts that the Draft SEIR should have disclosed the Project's inconsistencies with the Plan and that the responses to the Alliances comments concerning Plan consistency included in the Final SEIR does not address this deficiency. The commenter's position is premised on the conclusion that the Project is inconsistent with the Plan. As discussed in the Final SEIR, OCII's CEQA Findings, and the Secondary Use Findings, the Project is not inconsistent with the Plan.

CEQA only requires an EIR to include a discussion of an applicable plan if the project is inconsistent with the plan; it does not require a discussion of reasons a "project is consistent

with the relevant plans." (*City of Long Beach v. Los Angeles Unified School Dist.* (2009) 176 Cal.App.4th 889, 918-19; CEQA Guidelines, § 15125, subd. (d); see also *Pfeiffer v. City of Sunnyvale City Council* (2011) 200 Cal.App.4th 1552, 1566.) Because the Project is not inconsistent with the Plan, there is no merit to the commenter's position that the Draft SEIR should be recirculated in order to discuss inconsistencies between the Project and the Plan.

The commenter states the Project conflicts with design criteria, including vara blocks, and creates impacts on the character of the community. Please see response to Comment O-MBA18L6-1 regarding amendments to the Mission Bay South Design for Development and response to Comment O-MBA-19B3-1 regarding vara blocks and street alignments. Please see pages 32 through 34 of the Initial Study and pages 26 through 28 of OCII's Secondary Use Findings for a discussion of the Project's impact on the existing character of the area surrounding the project site. OCII considered whether the Project, including its secondary uses, conforms to the Plan's redevelopment objectives and planning and design controls. OCII's secondary use findings demonstrate that the Project is consistent with the Plan, its redevelopment objectives, and its planning and design controls.

The commenter asserts that the Project does not comply with the Plan for the reasons set forth in Mr. Lippe's November 5, 2015, letter to the Planning Commission. See response to Comment O-MBA24L9-2.

The commenter asserts that the event center is not authorized as a principal or secondary use within the Plan. See response to Comment O-MBA19B3-1.

Issues Raised by Late Commenters on Planning Code Section 321

This response addresses all or part of the following comments, which are quoted below:

O-MBA24L9-1 O-MBA24L9-3 O-MBA25L10-4 O-MBA28L11-6

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1. The Project is ineligible for any office space allocation under Planning Code section 321 and Motion 17709.

a. This Project does not comply with the Design for Development.

Resolution 14702 and Motion 17709 require that any project in the Alexandria District must comply with the Mission Bay South Design for Development in order to be eligible for any office space allocation. (See Motion 17709, p. 9, Finding 9,[1] Finding 10[2].

This Project does not comply with the Design for Development, as evidenced by the many amendments that the Successor Agency made to the Design for Development to accommodate the Project. Therefore, it is ineligible for allocation of any office space under Planning Code section 321 and Motion 17709.

Footnotes:

[1] "This schedule of phased authorization will ensure that, in accord with Resolution 14702, adequate office space can be allocated to those projects within the Development District that are determined to be in compliance with the D

for D requirements, while also complying with Section 321 of the Planning Code forbidding exceedance of the square footage available for allocation in any given annual cycle."

[2] "Pursuant to Resolution 14702, the Commission is charged with determining whether a project seeking authorization conforms to applicable standards in the D for D Document, which supersedes the criteria set forth in Section 321 and other provisions of the Code except as provided in the MBS Plan. The projects previously approved were determined to have met the MBS Redevelopment Plan and the D for D Document standards and guidelines, and requirements for childcare, public art, and other provisions of the Plan Documents, and retain that design approval, along with all previously imposed conditions of approval. Future projects requesting authorization will be brought before the Commission for design review in accord with Resolution 14702, and upon determination by the Commission that such proposals are in conformity with the D for D and other applicable requirements, office space may be allocated for such new structures from the unassigned amount available in the Development District."

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 5, 2015 [O-MBA24L9-1]*)

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2. The office space allocation requested for this Project exceeds the amount authorized for the Alexandria District.

In 1986, San Francisco voters passed Proposition M, a referendum limiting the amount of office space that can be approved each year. Codified as Section 321 of the San Francisco Planning Code, it provides that "[n]o office development may be approved during any approval period if the additional office space in that office development, when added to the additional office space in all other office developments . . . would exceed 950,000 square feet." (San Francisco Planning Code §321(a)(1).) Office space is defined to mean "construction . . . of any structure" that has the "effect of creating additional office space."

The current Project plans call for the construction of two office towers on Mission Bay South Parcels 29 and 31, comprising 309,436 square feet and 267,486 square feet of office space, respectively, for a total of 576,922 square feet of office space. (Executive Summary, p. 2.)

In 2008, the Planning Commission adopted Motion No. 17709. Motion 17709 approved a cumulative total office space allocation for all projects within the Alexandria Development District of 1,350,000 gross square feet. (Motion 17709, p. 9, Finding 9.) Of that amount, 1,222,980 was allocated before the adoption of Motion 17709. (Motion 17709, p. 5, Finding 4, Table 1.) Therefore, at the time Motion 17709 was proposed, 227,020 gsf of unallocated office remained for allocation.(Motion 17709, p. 9, Finding 9, Table 4.)

According to Motion 17709, there were three pending projects at that time, at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street. Motion 17709 states that these projects represented 665,880 square feet of "potential office space." (Motion 17709, p. 5, Finding 5, Table 2.) Motion 17709 also states an intent to authorize only 57% of "potential office space" for actual office space after 10/18/09, 53% of "potential office space" for actual office space after 10/18/10, and 50% of "potential office space" for actual office space after 10/18/11.

Motion 17709 does not state how much actual office space was approved for the three pending projects at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street. The Planning Department's Office Development Annual Limitation Program record (attached as Exhibit 3) shows "0*" in the "size" column for these projects. (Exhibit 3, p. 19.) Assuming the Planning Commission allocated office space to these projects at the 57% ratio, that amount is 379,552 gsf (665,880 x .5). **This amount exceeds the remaining office space available for allocation at that time (i.e., 227,020 gsf).**

According to Motion 17709, there were two additional areas where the applicant indicated an intent to develop "potential office space," namely, MB South Blocks "29 and 31" and "33-34." (Motion 17709, p. 5, Finding 6, Table 3.) Motion 17709 states that these possible future projects represented 915,700 square feet of "potential office space," with Blocks "29 and 31" at 515,700 GSF. (Motion 17709, p. 5, Finding 6, Table 3.)

Assuming, again, that the Planning Commission allocated office space to these areas at the 50% ratio, that amount is 457,850 GSF (915,700 x .5), with 257,850 allocated to Blocks "29 and 31" at 257,850 gsf (515,700 x .5).

The Draft Motion proposed for adoption at today's hearing states that "Blocks 29-32 are included in the Development District and have been allocated a total of 677,020 sf of office space pursuant to Motion No. 17709." (Draft Motion, p. 3.) This is incorrect in at least four ways.

First, it is unclear and unstated how Planning staff derived the 677,020 gsf number.

Second, after approval of the office space allocation for the three pending projects at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street, there was no office space left in the Alexandria District to allocate - as discussed above.

Third, even if one adds together the "potential office space" numbers for Blocks 29-32 in Motion 17709, the sum is 1,119,999 gsf, and 50% of that is only 560,000 gsf. The two office towers proposed for this Project require 576,922 gsf. (See Executive Summary, pp. 1-2: 309,436 gsf in the South tower and 267,486 gsf in the 16 Street tower). This number exceeds 560,000 gsf.

Fourth, when one adds the 25,000 gsf for office space in the arena building (see SEIR p. 3- 17), the office space for this project totals 601,922 gsf (i.e., 576,922 plus 25,000), which also exceeds 560,000 gsf.

Fifth, to the extent there was any office space left for Motion 17709 to allocate after approval of the office space allocation for the three pending projects at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street, Motion 17709 allocated only 257,850 gsf to Blocks 29 and 31 (i.e., 50% of 515,700) pursuant to Finding 6, Table 3. **The 576,922 gsf of office space in the two office towers for this Project are located in Blocks 29 and 31; and the total of 576,922 gsf vastly exceeds the 257,850 gsf that may arguably be available.**

Because the office towers called for in the Project exceed the allowable office space cap, Section 321(a)(1) and Motion 17709 require the Planning Commission to deny approval of the Project and of the requested allocations of office space. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 5, 2015 [O-MBA24L9-3]*)

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4. The Project does not comply with Proposition M, as codified at Planning Code Section 320 et seq and Planning Commission Motion 17709 , and is it is ineligible for allocation of any office space under Planning Code section 321 and Motion 17709, as discussed in my November 5, 2015, letter to the Planning Commission attached as Exhibit 1. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 6, 2015 [O-MBA25L10-4]*)

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4. The Project does not comply with Proposition M, as codified at Planning Code Section 320 et seq and Planning Commission Motion 17709 , and is it is ineligible for allocation of any office space under Planning Code section 3 21 and Motion 17709, as discussed in my November 5, 2015, letter to the Planning Commission attached as Exhibit 1. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 9, 2015 [O-MBA28L11-6]*)

Response to Late Comments PP-2: Planning Code Section 321

The commenter states that the two commercial office buildings that are components of the Project do not qualify for office space allocation under Section 321 of the Planning Code because OCII amended the Mission Bay South Design for Development ("Design for Development" or "D for D"). The commenter misinterprets the authority of the Planning

Commission review of the design of the office development under Section 321 and the scope of the Design for Development amendments, which primarily relate to the Event Center – not to the office development - component of the Project.

The Redevelopment Plan for the Mission Bay South Redevelopment Project ("Redevelopment Plan") states unequivocally that it and the Design for Development "supersede the San Francisco Planning Code in its entirety, except as otherwise provided herein." Redevelopment Plan, Section 101. Under the Redevelopment Plan, OCII has the sole discretion to amend the Design for Development so long as the amendments are consistent with "the limits, restrictions and controls established in [the Redevelopment] Plan." Redevelopment Plan, Section 306. In a few instances, the Redevelopment Plan incorporates standards from the Planning Code into its basic land use controls, but this reliance on Planning Code standards does not change the ultimate authority of OCII over project approval.

OCII amended, by Resolution No. 71-2015 (Nov. 3, 2015), the D for D to accommodate the Event Center and found that the amendments "comply with the land use controls of the [Redevelopment] Plan and are consistent with the Plan's redevelopment objectives." These D for D amendments primarily address the unique characteristics of an Event Center building and made only minor changes to the specific standards and guidelines for the design of individual office buildings. The changes affecting office buildings are the designation of a fourth tower location on Blocks 29 or 31 and the addition of minimum tower separation requirements between a tower and an Event Center building. The D for D amendments, however, do not change other aspects of office development design standards, such as height, bulk, setbacks, and parking, and did not change the commercial industrial guidelines applicable to office buildings.

The Redevelopment Plan refers to specific Planning Code standards for office development and establishes, in Section 304.11, that the Redevelopment Plan's authorization of up to 5.9 million square feet of commercial/industrial space, including office space, over the Plan's thirty year life complies with those standards (Planning Code, §§ 320-325) so long as the annual limitation of office development is not exceeded. Furthermore, Section 304.11 provides a limited role for the Planning Commission in the review of office development to confirm that commercial office development is well-designed; it incorporates Planning Commission Resolution No. 14702 (Sep. 17, 1998), which states:

The design guidelines for the South Plan Area are set forth in the Design for Development. This Planning Commission has reviewed the design standards and guidelines and finds that such standards and guidelines will ensure quality design of any proposed office development. In addition, the Planning Commission will review any specific office development subject to the terms of Planning Code §§ 320-325 to confirm that the design of that office development consistent with the findings herein. Planning Commission Resolution No. 14702, p. 6.

Contrary to the commenter's suggestion, this standard does not limit the authority of OCII to amend the D for D or to approve a project, but rather requires the Planning Commission to determine that a particular office building is of a "quality design" consistent with the then-applicable design standards and guidelines. Any suggestion that the original version of the 1998 Design for Development is frozen in time through Planning Commission Resolution No. 14702 is inconsistent with OCII's land use authority.

Nonetheless, the Planning Commission has the opportunity, through its design review of office buildings, to consider whether the application of D for D amendments to a proposed office building results in a well-designed building. In approving the two office buildings that are part of this Project, the Planning Commission found that: "(1) the MBS D for D standards and guidelines will ensure a quality design, (2) the proposed project is consistent with the MBS D for D and the findings set forth in Commission Resolution 14702, and (3) approval of the design of the proposed project would promote the health, safety and welfare of the City." Motion No. 19502 (Nov. 5, 2015). Finally, this Planning Commission finding supersedes Motion No. 11709 (Oct. 2, 2008) to the extent that the prior motion covered office development at the Project site.

Accordingly, both OCII and the Planning Commission have determined that the office building component of the Project complies with the Design for Development**.**

The commenter asserts that the Planning Commission approval on November 5, 2015, of the office design for the two office towers on Mission Bay South Parcels 29 and 31, comprising a total of 576,922 square feet of office space exceeded the amount of available office space under Planning Code Section 321. The commenter is mistaken, as explained in a letter and attachments from the Planning Director, John Rahaim, to the OCII Executive Director, Tiffany Bohee, and the Director of Public Works, Mohammed Nuru, *et al.*, dated November 16, 2015.[2]

As explained in the letter, the Planning Commission by Motion 17709 allocated a total of 1,350,000 square feet of office space to the Alexandria Mission Bay Life Sciences and Technology Development District ("District") in 2008. The District includes all of the parcels in the GSW Event Center project. Motion 17709 authorized Alexandria to allocate the total square feet of office space to any property in the District and to transfer property to another owner with any portion of the allocated space, so long as the transfers did not exceed the total allocation granted to the District. Since 2008, Alexandria has transferred 1,100,000 square feet of the total allocation to other owners of property in the District and retained 250,000 square feet in property that it owns. Alexandria transferred the GSW Event Center project parcels (Parcels 29, 30, 31 and 32) with 677,020 square feet of the total office space allocation. The two office towers proposed on Mission Bay South Parcels 29 and 31 are less than the 677,020 square feet of office space allocated to those parcels. Sufficient office space

[2] Memorandum from John Rahaim, Director, San Francisco Planning Department to Tiffany Bohee, Executive Director, Office of Community Investment and Infrastructure; Mohammed Nuru, Director, San Francisco Public Works; and Bruce Storrs, San Francisco City and County Surveyor, November 16, 2015.

exists in the previously approved District to support the Planning Commission's action, and no further allocation is needed.

The commenter also questions why 25,000 square feet of office space in the event center building was not included in the calculation of office space requiring an allocation. As explained in the letter, the arena building office space is a minor accessory use to the event center use and not a separate office component requiring an office space allocation under the Planning Code.

Issues Raised by Late Commenters on General Plan Consistency

This response addresses all or part of the following comments, which are quoted below:

O-MBA24L9-4 O-MBA25L10-3 O-MBA28L11-5

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3. General Plan Inconsistency: BAAQMD.

San Francisco Master Plan Policy 4.1 states:

> Support and comply with objectives, policies, and air quality standards of the Bay Area Air Quality Management District.
>
> Regionwide monitoring of air quality and enforcement of air quality standards constitute the primary means of reducing harmful emissions. The conservation of San Francisco's air resource is dependent upon the continuation and strengthening of regional controls over air polluters. San Francisco should do all that is in its power to support the Bay Area Air Quality Management district in its following operations:
>
> - Monitoring both stationary and mobile sources of air pollution within the region and enforcing District regulations for achieving air quality standards.
> - Regulating new construction that may significantly impair ambient air quality.
> - Maintaining alert, permit, and violations systems.
> - Developing more effective controls and method of enforcement, as necessary

The attached letter from the Bay Area Air Quality Management District (Exhibit 4) and the City's response (Exhibit 5) show that this Project does not comply with this policy. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 5, 2015 [O-MBA24L9-4]*)

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3. The Project does not comply with the San Francisco General Plan as discussed in my November 5, 2015, letter to the Planning Commission attached as Exhibit 1. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 6, 2015 [O-MBA25L10-3]*)

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3. The Project does not comply with the San Francisco General Plan as discussed in my November 5, 2015, letter to the Planning Commission attached as Exhibit 1. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 9, 2015 [O-MBA28L11-5]*)

Response to Late Comments PP-3: General Plan Consistency

The commenter asserts there is a project inconsistency with the San Francisco General Plan, citing Policy 4.1 which addresses support and compliance with objectives, policies, and air quality standards of the Bay Area Air Quality Management District.

First, as discussed in SEIR Chapter 4, Plans and Policies, on September 17, 1998, by Resolution No. 14702, the Planning Commission determined that the Mission Bay South Redevelopment Plan provides for a type, intensity, and location of development that is consistent with the overall goals, objectives, and policies of the *General Plan*. Therefore, the project's consistency with the Mission Bay South Redevelopment Plan would ensure that the project would not obviously or substantially conflict with *General Plan* goals, policies, or objectives. (See, e.g., *PR/JSM Rivara LLC v. Community Redevelopment Agency* (2009) 180 Cal.App.4th 1475, 1482-1483 [distinguishing between "adopting a redevelopment plan and implementing one" and stating that while "the redevelopment agency must find that the redevelopment plan conforms to the general plan, that determination is made prior to the *adoption* of the plan"] (original emphasis).) As discussed in Final SEIR Section 13.5.2 (Response PD-1), evidence supports the conclusion that the project is consistent with the objectives and policies set forth in the Mission Bay South Redevelopment Plan. The ultimate determination of consistency is made by the designated decision-maker, in this case, the OCII Executive Director.

Nevertheless, with respect to November 2, 2015 BAAQMD letter cited by the commenter, the commenter is referred to the Response to Late Comment AQ-1 in Section 10 of this Exhibit D. The BAAQMD's November 2, 2015 letter does not establish that the CARB cost effectiveness criteria are inappropriate for determining the offset costs under Mitigation Measure M-AQ-2b. Based on the information and analysis presented in the Draft SEIR, the Responses to Comments and supporting technical analyses, Planning Department and OCII staffs continue to believe that the offset fee established in Mitigation Measure M-AQ-2b is sufficient to achieve the required emissions offsets. In addition, as discussed in the Responses to Comments document, Mitigation Measure M-AQ-2b has been revised since publication of the Draft SEIR to allow the project sponsor to directly implement an emissions offset project as an alternative to entering into an agreement with the BAAQMD.

Accordingly, the BAAQMD letter does not result in the project not being consistent with the San Francisco Master Plan Policy 4.1 for supporting and complying with objectives, policies, and air quality standards of the BAAQMD. In addition, the BAAQMD letter does not result in the project not being consistent with supporting BAAQMD in its monitoring of air pollution sources; regulating new construction; maintaining its alert, permit and violation systems; or developing more cost effective controls and methods of enforcement. Furthermore, the letter from the BAAQMD does not alter the analysis or conclusions reached in the Final SEIR.

Issues Raised by Late Commenters on Plan Bay Area

This response addresses all or part of the following comments, which are quoted below:

A-MTC-2

Plan Bay Area & Priority Development Areas

As discussed in Plan Bay Area, the Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, prepared by MTC and the Association of Bay Area Governments (ABAG), Mission Bay is included within one of San Francisco's Priority Development Areas (PDAs). PDAs are, in short, "transit-oriented, infill development opportunity areas." (Plan Bay Area, p. 77.) The Plan Bay Area anticipates that the majority of future development within the San Francisco Bay Area, including 78 percent of new housing and 62 percent of new jobs, will occur within the region's PDAs. (Plan Bay Area, pp. 26, 57.) Development of the Project within Mission Bay is consistent with Plan Bay Area's goal to promote infill development and the creation of jobs within the region's PDAs.

To encourage more development near high-quality transit and reward jurisdictions that produce housing and jobs, Plan Bay Area proposes to target transportation investments in PDAs and to support planning efforts for transit-oriented development in PDAs. For example, in May 2012, MTC approved a new funding approach that directs specific federal funds to support more focused growth in the Bay Area. MTC committed $320 million through 2017 (and $14.6 billion through 2040 - the life of the plan), from federal surface transportation legislation currently known as MAP-21 (Moving Ahead for Progress in the 21st Century) towards the One Bay Area Grant (OBAG) program. (Plan Bay Area, p. 76.) The OBAG program allows communities flexibility to invest in transportation infrastructure that supports infill development by providing funding for bicycle and pedestrian improvements, local street repair, and planning activities. Within San Francisco, at least 70 percent of OBAG investments must be directed to the City's PDAs. In short, Plan Bay Area is designed to provide the transportation investments necessary to allow PDAs to accommodate the dense land use development envisioned by the Plan. (*Metropolitan Transportation Commission, Ken Kirkey, letter, October 30, 2015 [A-MTC-2]*)

Response to Late Comments PP-4: Plan Bay Area

The commenter indicates Mission Bay is included within one of the San Francisco Priority Development Areas (PDAs), and that development of the project within Mission Bay is consistent with the Plan Bay Area's goal to promote infill development and the creation of jobs within the region's PDAs. These comments are noted. The SEIR also acknowledges the City has designated the Mission Bay South Redevelopment Plan Area as a PDA (see SEIR Chapter 3, Project Description, page 3-10); that Plan Bay Area calls for concentrating housing and job growth around transit corridors, particularly within areas identified by local jurisdictions as PDAs (see SEIR Chapter 4, Plans and Policies, page 4-9); and that the project would not substantially conflict with, and in fact would be consistent with, Plan Bay Area (see Initial Study Section E.1, Land Use and Land Use Planning, Impact LU-2, page 31; Response to Comments Document Section 13.5, Project Description, Response PD-4, page 13.5-18; and Response to Comments Document Section 13.8, Land Use, Response LU-1, page 13.8-6).

The commenter indicates that in San Francisco, at least 70 percent of MTC's One Bay Area Grant (OBAG) program investments must be directed to the City PDAs, and as such, Plan Bay Area is designed to provide the transportation investments necessary to allow PDAs to accommodate the dense land use development envisioned by the Plan. This comment is noted. The project also proposes substantial transportation improvements within the Mission Bay South PDA as described in detail in SEIR Chapter 3, Project Description; Chapter 5.2, Transportation and Circulation; and Chapter 12, Project Refinements and New Project Variant, Section 12.2.3, Transportation Improvements. This includes, but is not limited to, a number of physical transportation infrastructure improvements adjacent to the project site, as well as transit service improvements including the expansion of the Mission Bay TMA shuttle system, provision of the Muni Special Event Transit Service Plan, and a Transportation Management Plan (TMP) for operations of the proposed project.

SECTION 7: RESPONSES TO LATE COMMENTS ON ARCHAEOLOGICAL RESOURCES

The comments and corresponding responses in this section cover topics analyzed in the Initial Study, Section E.4, Cultural and Paleontological Resources (included in Appendix NOP-IS of the SEIR), as augmented in RTC document Section 13.10. These include topics related to:

- Issue CULT-1: Archeological Resource

Issues Raised by Late Commenters on Archaeological Resources

This response addresses all or part of the following comments, which are quoted below:

O-MBA22B4-8

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c. Cultural Resources. In response to the Alliance's references to new information regarding archaeological impacts and inadequate studies, the SEIR provides a conclusory reference to new archaeological study in October 2015 that resolves concerns. As with the other new studies provided within the 11-day review period for the SEIR Responses to Comments, the public has not had sufficient opportunity to review the technical information. Further, the Responses to Comments is insufficient as an informational document because it fails to provide analysis regarding its conclusory dismissal of archaeological concerns based on the referenced new studies. There is thus insufficient basis for findings that archaeological impacts are infeasible. (*Mission Bay Alliance, Susan Brandt-Hawley, letter, November 3, 2015 [O-MBA22B4-8]*)

Response to Late Comments CULT-1: Archaeological Resources

The commenter claims that Final SEIR provides a conclusory reference to the new archaeological study completed in October 2015 that resolves concerns. To the contrary, the Final SEIR Section 13.10.2, Archaeological Resources (Response CULT-1) describes that subsequent to the publication of the Draft SEIR, archaeological testing was conducted at Blocks 29-32 consistent with the requirements of the approved and adopted 1998 Mission Bay FSEIR Mitigation Measures D.3 and D.4. As required by these mitigation measures, an archaeological testing program was conducted in accord with an archaeological testing plan[3] by an archaeological consultant on the San Francisco Planning Department Qualified Archaeological Consultant List (QACL). The results of the archaeological testing program are reported in an *Archaeological Testing Results Report* that was approved by the City Archaeologist in October 2015. (The *Archaeological Testing Results Report* is not available for general public review, however, is on file with, and available for review by qualified individuals at, the San Francisco Planning Department, Environmental Review Division.) The archaeological testing program determined that no archaeological deposits or potential stable land surfaces available for occupation by prehistoric populations (palesols) were

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[3] Environmental Science Associates. *Event Center and Mixed Use Development at Mission Bay Blocks 29-32 Archaeological Testing Plan.* May 1, 2015.

identified in the archaeological testing program, confirming the finding of no potential effect to legally-significant archaeological resources by the proposed project. As such, the proposed project would not result in any new or substantially more severe impacts on archaeological resources than were analyzed and disclosed in the Mission Bay FSEIR.

SECTION 8: RESPONSES TO LATE COMMENTS ON TRANSPORTATION

The comments and corresponding responses in this section cover topics analyzed in SEIR Section 5.2, Transportation, as augmented in RTC document Section 13.11. These include topics related to:

- Issue TR-1: Methodology, Analysis Scenarios
- Issue TR-2: Methodology, Analysis Locations
- Issue TR-3: Methodology, Baseline Conditions
- Issue TR-4: Methodology, Trip Generation
- Issue TR-5: Methodology, Travel Modes
- Issue TR-6: Methodology, Traffic LOS
- Issue TR-7: Methodology, Transit Capacity Utilization
- Issue TR-8: Methodology, Cumulative Analysis Year and Context
- Issue TR-9: Methodology, Adequacy of Transportation Analysis
- Issue TR-10: Traffic Impacts
- Issue TR-11: Transit Impacts, BART
- Issue TR-12: Loading Impacts
- Issue TR-13: Emergency Vehicle Access Impacts
- Issue TR-14: Construction-related Transportation Impacts
- Issue TR-15: Parking
- Issue TR-16: Helipad Impacts
- Issue TR-17: Off-site Parking Mitigation

Issues Raised by Late Commenters on Methodology, Analysis Scenarios and Trip Generation

This response addresses all or part of the following comments, which are quoted below:

A-Caltrans2-1 O-MBA20L7-20

Reply to Response TR-2a

Caltrans notes that the RTC Document addresses turning traffic volumes under 2015 Existing Plus Convention Event and 2015 Existing Plus Basketball Game. Yet, traffic analysis under Basketball Game Only and Convention Only Conditions are not provided. As mentioned in Caltrans' previous letter, we recommend the report include traffic turning movement per study intersection under Basketball Game Only and Convention Only Conditions separately for complete comparison review purposes. (*California Department of Transportation (Caltrans), Patricia Maurice, letter, November 2, 2015 [A-Caltrans2-1]*)

Section 13.11.3, Response TR-2a

This section, in part, replies to our comments now labeled by the City as O- MBA10L4-15 and O-MBA10L4-17.

Re MBA10L4-15:
MBA10L4-15 points out that while the DSEIR evaluated the Project's transportation with implementation of a Special Events Transit Service Plan in the context of six different event

scenarios, it only evaluates the Project's transportation impacts *without* the a Special Events Transit Service Plan in the context of *only one* event scenario (without Giants game but with Basketball game). It requests the analysis *without* the a Special Events Transit Service Plan in the context of for *all six* of the event scenarios that were evaluated assuming the Special Events Transit Service Plan was in place.

There are several problems with the City's reply to this comment.

- The reply claims that the scenario of an overlapping evening game at AT&T Park with a Basketball event at the proposed Project without the Special Event Transit Services Plan taking place is a "worst-of-the-worst scenarios" that could only happen about 9 times a year, and then only if Muni were unable to deliver those services. However, with the Project located just a block from the emergency entrances to the UCSF hospitals, "worst-of-the-worst scenarios" are germane considerations for potential impacts on patient access to emergency facilities and the ordinary or special access/egress of emergency service providers.
- Despite the City's assertion that funding of Muni's Special Event Transit Services Plan is guaranteed, this funding is dependent on allocation of General Funds and discretionary transportation funds to this purpose, with such future allocations not guaranteed.
- The response also points to Mitigation Measure M-TR-18: Auto Mode Share Performance Standard and Monitoring as providing measures that could be implemented in the event Muni's Special Event Transit Services Plan is not implemented. However, many of the potential action measures in M-TR-18 are vague and conditional, and strict monitoring and enforcement is unlikely if the City through Muni has failed to deliver its promised Special Event Transit Services Plan.
- The response, although admitting no quantitative analysis of an overlapping Giants event at AT&T Park with an evening Basketball event at the Project and without implementation of the Muni Special Event Transit Services Plan was prepared, claims that the DSEIR essentially covers this situation for intersections and freeway ramps by having quantitatively analyzed the scenario of an evening Basketball Event with no Giants Event and no Special Event Transit Services Plan (Impacts TR-18 and TR-19) by virtue of having stated that these impacts would be additive to impacts in the "existing conditions without evening Giants event scenario" (Impacts TR-2 and TR-3) or to Impacts TR-11 and TR-12 (existing conditions with a Giants Event at AT&T Park). The problem with this is that the simple statement that the impacts are additive provides the public with no measure of the severity of the combined impacts.
- The response also notes that Impact TR-20 presents Muni transit impacts for the weekday evening Basketball scenario without an overlapping Giants game or implementation of the Muni Special Event Transit Services Plan and adds text stating as follows: "Impacts to the T Third and 22 Filmore [sic] would be in addition to the significant impacts identified for the proposed project with implementation of the Muni Special Event Transit Services Plan in Impact TR- 13 for conditions with an overlapping SF Giants evening game." It then concludes, "The revision does not change the analysis or conclusions presented in the SEIR." The problem with this part of the response, like that related to the impacts on intersections and freeway ramps is that the simple statement that the impacts are additive fails to inform the public of the extent of the change in severity of the impacts.
- With regard to failure to consider cumulative scenarios that lack implementation of the Muni Special Event Transit Services Plan, this failure is not remedied by addition of text to the SEIR that specify that cumulative analysis for the Basketball game scenarios include assumption of implementation of the Muni Special Event Transit Services Plan. Since the SETSP is not guaranteed funding in perpetuity and there is no assurance that Muni vehicles and personnel resources will be able to be devoted to this special service in lieu of serving regular transit needs, this change in language does not relieve the deficiency of the SEIR's failure to consider the cumulative scenario in absence of the Muni Special Event Transit Services Plan.

As a consequence of these flaws, Response TR-2a related to MBA10L4-15 is inadequate.

Re MBA10L4-17

Comment O-MBA10L4-17 is part of a stream of comment demonstrating why the DSEIR is inadequate for having unreasonably understated the amount of weekday evening arena event access travel would occur during the evening commute peak hour (see our comment now labeled O-MBA10L4-16 for related discussion). Responding to this apart from the related issues in O-MBA10L4-16 evades the compelling nature of the joint comments that the DSEIR has understated the numbers of weekday evening basketball event attendees actually traveling on the transportation system in the evening commute peak hour (5 to 6 PM).

As to the direct substance of the comment and response, the DSEIR's decision to base the analysis of weekday evening games on a presumed starting time of 7:30 was predicated on experience over 3 seasons when the Warriors were a poor to marginal team and games starting earlier in the evening (at about 6 pm) averaged only 2.5 games per season. The comment documented that based on the 2014/2015 season performance, the combined total of weeknight regular season and playoff games starting at 6 pm (the normal start time for nationally televised weeknight games played on the West Coast) could easily be 16 games per season over the next several years or beyond. The inadequacies of the SEIR reply are as follows:

- The reply notes that the 2 to 3 preseason and up to 16 postseason games - number variable - (and in actuality, though not admitted in the response, a number of regular season games as well) could have a 6pm weekday start time. It also admits that such games would worsen traffic in the weekday peak commute period from conditions reported in the SEIR (failing to admit also adversely impacting transit and also failing to quantify the increase in severity of impacts on weekday pm commute peak. It claims that these start times are driven by such factors as TV deals, other team's travel schedules and outcomes of postseason series that are beyond the abilities of the Warriors to control - although it is nonsense for the response to imply that those considerations make the Project's significant impacts in the circumstances of these earlier-start events any less significant.

- The response claims that the quality of the team will vary from year to year and claims that this will make the situation of large numbers of national telecasts that might start at 6 pm inconsistent over the time horizon considered in the SEIR. This is a speculation not consistent with precedent. Once a team has achieved an iconic status and national following (as the Warriors have done in the recent season with winning the league championship and the most valuable player award and with the shiny new venue comprised by the Project reinforcing that iconic status), the number of nationally televised weeknight games (6 pm starts) is likely to increase over the next several seasons, and to reoccur despite hiccups in individual seasons (witness the pervasive national attraction to the Lakers and Celtics despite several bad seasons, or, in another sport, Notre Dame football). Moreover, the project arena may be used for other major weekday capacity events such as the NCAA basketball tournament quarter- and semi-finals that would have start times dictated by national TV (that is, 6 pm). Hence, the response's conclusion that "it is unlikely that this scenario [a large number of nationally televised weekday games starting at 6 pm] *would occur on a regular basis during the time horizon addressed by the SEIR*" is non-factual, speculative and inconsistent with the good faith effort to disclose impact that CEQA demands.

- Finally, the response claims that "consistent with common practice in the transportation planning profession, the SEIR includes an analysis of the highest demand with the most frequent conditions for evening events ...". We agree that the 7:30 start time is probably the most frequent weekday evening start time likely to occur. But the SEIR is in error and misleading in proclaiming that it is consistent with common practice in the transportation planning profession to only study the high-demand situation that occurs most frequently. In fact, when a high demand scenario that is not the most frequently occurring but is one that occurs frequently enough to be significantly impactful, it is the common practice in the transportation planning profession to study that frequent-enough circumstance as a separate scenario on a CEQA or

other analysis. A good example of this is normal transportation planning practice with respect to major regional shopping centers. Studies are performed for an average weekday, and because shopping centers have their highest travel peaks on Saturday, for an average Saturday; these are the most frequently occurring peak conditions. But because shopping center travel has its highest peaks in the Thanksgiving to day-after-New Year holiday season and because the peaks in that approximately 38 day season occur frequently enough to be significantly impactful on their own and pose impacts of different severity than on the average weekday and average Saturday, normal transportation planning practice is to evaluate holiday shopping season weekday and Saturday impacts as separate scenarios. Another example is in the Napa Valley. There, it is the practice to evaluate a project's transportation impacts for the average weekday and average Saturday (which are the most frequently occurring impact situations) and to also evaluate impacts in the "crush" (harvest) season as a separate case as well because those impacts, occurring over a four to six week period are frequent enough and of such severity in comparison to annual averages to warrant consideration as a separate impact case.

- This matter cannot be dismissed as a disagreement among experts. A compelling argument that the SEIR should have evaluated a case scenario for weeknight capacity Basketball games starting at 6 pm is the fact that the SEIR did evaluate a scenario where there are an overlapping capacity Basketball event at the proposed Project and a Giants game at AT&T Park on a weekday evening. The SEIR claims that that type of overlapping event is likely to occur only about 9 times per year. It is obvious that, if a nine times per year occurrence rate is sufficient to require the SEIR to evaluate the Project in the context of that overlapping scenario, then the SEIR should also evaluate the weeknight 6 pm Basketball start scenario which is likely to occur more than 9 times per year in many years of operation.
- The fact that two hospital emergency entrances and the entries for emergency caregivers are located within a block of the Project site make the need for the SEIR to specifically evaluate impacts and mitigation in the 6 pm weekday event start scenario all the more compelling.

Hence, considering all of the above, the SEIR should have evaluated weekday Basketball events starting at 6 pm and is inadequate for not having done so. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-20]*)

Response to Late Comment TR-1: Methodology, Analysis Scenarios

In response to Caltrans' comment, Response TR-2a in the RTC document stated that Appendix TR Figures 6a and 6b present the existing plus project traffic volumes for the weekday p.m. peak hour for the Convention Event scenario, and Figures 7a and 7b present the existing plus project traffic volumes for the weekday p.m. peak hour for the Basketball Game scenario. As these figures show, the traffic volumes for the two scenarios are presented separately. The traffic impact analysis at these intersections is presented in Impact TR-4, and calculation sheets are provided in Appendix TR. While project-only volumes are not presented on separate figures, Appendix Figures 1 through 4 present the existing traffic volumes, and project volumes can be calculated by subtracting the existing plus project traffic volumes from the existing traffic volumes.

It is unclear what is meant by "Basketball Game Only and Convention Only Conditions" in the comment. Traffic analysis of only the vehicle trips generated by a basketball game or a convention without the background existing traffic volumes was not conducted, and a basketball game would be unlikely to occur on a same day as a convention event due to the

timing and logistical challenges associated with maintenance between events and modification of equipment set-up (e.g., seating configurations, floor material, and audio and visual equipment requirements) for different event types.

As described in the RTC document, only the Basketball Game scenario without an overlapping SF Giants evening game at AT&T Park was analyzed in the SEIR both without and with implementation of the Muni Special Event Transit Service Plan. The Muni Special Event Transit Service Plan is a component of the proposed project and thus is expected to occur. Even so, the purpose of analyzing conditions without the Muni Special Event Transit Service Plan was to be conservative in the assessment of transportation impacts, in the unanticipated (and unlikely) event that Muni would reduce or eliminate the proposed Muni Special Event Transit Service Plan. A benefit of such analysis was to determine the extent to which the Muni Special Event Transit Service Plan would reduce traffic impacts compared to a hypothetical scenario in which the project sponsor had not committed to such a plan as part of its proposed project. Such analysis of "project features" that have a tendency to reduce impacts is encouraged by CEQA case law, and in particular by the case *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645 (*Lotus*), which (ironically) the Mission Bay Alliance, in other contexts, has claimed that OCII has improperly ignored.

The quantitative analysis of the Basketball Game scenario with an overlapping SF Giants evening game at AT&T Park without the Muni Special Event Transit Service Plan was not included in the SEIR as it represents a worst-of-the-worst scenario, which would be expected to occur, on average, about nine times a year, and then *only* if Muni was unable to provide the additional services included in the Muni Special Event Transit Service Plan. Not every possible project condition needs to be included in the SEIR analysis. Indeed, the courts have been clear that CEQA does not require that an EIR address a "worst case" scenario. (*Napa Citizens for Honest Government v. Napa County Board of Supervisors* (2001) 91 Cal.App.4th 342, 373, citing *Towards Responsibility in Planning v. City Council* (1988) 200 Cal.App.3d 671, 681.) Rather, consistent with good – that is, realistic –planning, lead agencies are only required to consider "reasonably anticipated future development.'" (*Save Round Valley Alliance v. County of Inyo* (2007) 157 Cal.App.4th 1437, 1453.) Here, consistent with the *Lotus* decision, the analysis scenarios included in the SEIR provide information to the public and decision makers that traffic and Muni transit conditions would be worse without the Muni Special Event Transit Service Plan for conditions without and with an overlapping SF Giants Game at AT&T Park. The fact that OCII conducted an analysis of the Basketball Game scenario without the Muni Special Event Transit Service Plan does not mean that the scenario addressed therein is probable or likely to occur. Indeed, it is not.

As discussed in the SEIR on p. 5.2-80 and the RTC document on p. 13.11-9, it is fully anticipated that the Muni Special Event Transit Service Plan would be provided. Substantial evidence indicates it is very likely to be implemented. On November 3, 2015, the SFMTA unanimously approved a resolution (Resolution 15-154) agreeing to the Event Center Expenditure Plan for transportation capital and operating costs of providing transit, traffic enforcement, street sweeping and public safety services outside the premises are fully

funded through the life of the project. In the event that the Muni Special Event Transit Service Plan is not implemented, Mitigation Measure M-TR-18: Auto Mode Share Performance Standard and Monitoring has been identified and adopted as part of the Mitigation Monitoring and Reporting Program as a back-up strategy (see pp. MMRP-16 to MMRP-20.). Mitigation Measure M-TR-18 provides an extensive list of measures the project sponsor must implement as necessary to achieve the specific auto-mode share performance standard set forth in the measure (not more than 53 percent of private auto use for weekday events with 12,500 or more attendees; not more than 59 percent of private auto use for weekend events with 12,500 or more attendees). This measure thus provides further assurance that, during larger events, specific steps will be taken (either through the Muni Special Events Transit Service Plan, or through Mitigation Measure M-TR-18) to increase transit ridership, and to reduce reliance on private vehicles. OCII disagrees with the commenter that it is unlikely that the mitigation measure would be implemented and monitored. (See *Environmental Council of Sacramento v. City of Sacramento* (2006) 142 Cal.App.4th 1018, 1036 ["[a] public agency can make reasonable assumptions based on substantial evidence about future conditions without guaranteeing that those assumptions will remain true"]; *City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 401, 412 [court rejects attack on the use of future growth projections in an EIR, even though "[t]he accuracy of these projections must, of course, await the passage of time"]; *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439, 465-466 [Supreme Court upholds the conclusion that a mitigation measure requiring the lead agency to work with other local agencies to implement a parking permit program would reduce impacts to less than significant levels, even though the lead agency "cannot guarantee local governments will cooperate to implement" the program; project opponents' speculation that local agencies would not cooperate "is not sufficient to show the agency violated CEQA by adopting this mitigation measure"]. Cf. *Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal.4th 1086, 1120 [under CEQA, the proper focus of analysis is the project as approved; the agency need not speculate about what will occur in the event some component of the project will fail].)

Because the Muni Special Event Transit Service Plan was incorporated into the project description, the 2040 cumulative analysis also includes analysis of events with implementation of the Muni Special Event Transit Service Plan. Mitigation Measure M-TR-18: Auto Mode Share Performance Standard and Monitoring would ensure that a reduction in private auto mode share is achieved with or without implementation of the Muni Special Event Transit Service Plan. Additional analysis of 2040 cumulative conditions is therefore not required.

As discussed in the RTC document on pp. 13.11-11 – 13.11-12, normal starting times for weekday basketball games is 7:30 p.m. Nationally televised weekday games typically feature an early game and a late game that does not deviate from the normal 7:30 p.m. start times, aside from exceptional circumstances such as playoff games. The Golden State Warriors preseason and postseason games (i.e., two to three preseason games, and up to 16 postseason games) would have variable start times, and could include start time of 6:00 p.m., which could overlap with the commute peak hour, and would worsen the weekday p.m.

peak period traffic conditions from those reported in the SEIR. The variability of preseason and postseason games' timing is due in part to TV deals, opposing team traveling schedules, and/or outcomes of postseason series that are beyond the scope of Golden State Warriors control. The two to three preseason games that could start at 6:00 p.m. would be rare and represent a minor portion of the evening events that would occur throughout the year with lower expected attendance (an average attendance of 11,000 attendees at pre-season games, versus 17,000 attendees at regular season games). If the Golden State Warriors make it to the playoffs, the number of evening events starting at 6:00 p.m. could increase; however, given the normal NBA cycles by which teams typically rise and fall in the standings over time as player lineups change, it is unlikely that this scenario would occur on a regular basis during the time horizon addressed in the SEIR. The comment that the Golden State Warriors' recent achievements and "iconic status" will result in more nationally televised weekday home games at 6:00 pm, even if the team's success does not continue, is speculative and not based on evidence. As noted above, even nationally televised weekday home games typically begin at 7:30 p.m. Further, notwithstanding their recent success, other than games played on holidays or playoffs games played in the Western Conference Finals or the NBA Finals, the Golden State Warriors have not played any weekday home games starting at 6:00 p.m. during any of the last three seasons, and no such games are scheduled for the current season. Despite the on-court recent success of the Golden State Warriors, the project is expected to remain in place for many decades into the future, and the environmental review for the project should reflect that reality. During the life of the project, it is very likely that the fortunes of the team will rise and fall, as the fortunes of other teams within the National Basketball Association improve and as the Golden State Warriors' players or coaching staff (or those of their opponents) change over time. The experience of the Los Angeles Lakers — a team that few would dispute is "iconic" in terms of its historic accomplishments — provides evidence of such ebbs and flows in the fortunes of a generally successful sports organization. That team has had losing seasons in recent years despite the past triumphs of earlier teams with superstar players such as Wilt Chamberlain, Kareem Abdul Jabbar, Magic Johnson, and Shaquille O'Neal.

An analysis of conditions with an overlapping SF Giants evening game at AT&T Park and the potential transportation impacts associated with such overlapping events were included due to the proximity of the event center to AT&T Park, not because of the expected number of annual overlapping events. Thus, the number of overlapping events is not considered a threshold for determining the scenarios that should be analyzed.

See Response to Late Comment TR-13 below regarding emergency vehicle access. Emergency vehicles are not subject to intersection delays, and analysis of an earlier start time would not change the conclusions related to emergency vehicle access impacts in the SEIR.

Issues Raised by Late Commenters on Methodology, Analysis Locations

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-21 O-MBA20L7-32

Section 13.11.3, Response TR-2b

This section purports to respond to our comments now labeled by the City as O-MBA10L4-2, O-MBA10L4-20, O-MBA10L4-39A and those of Caltrans (A-Caltrans-5) and others. These comments concern the SEIR's lack of analysis at intersections and freeway ramps that are on obvious approach and/or departure routes to/from and that are obviously or potentially capacity-challenged already.

The response begins by reciting the 6 freeway ramps and their related surface street intersections where analysis was conducted, a point not at issue in the comment. The key point of the comment is the locations the SEIR failed to analyze, not the places it did so. The reply continues, adding that the depth and approach is similar to other studies of completed and ongoing major project studies in San Francisco, and noting that the 1998 Mission Bay FSEIR did not address freeway ramp operations and queuing at all. However, what other studies did or didn't do is immaterial. What is material is what this SEIR should have studied but failed to do, and the response attempts to evade this.

The response continues for two paragraphs describing the configurations and conditions at the I 280 Mariposa off-ramp - one of the locations the SEIR did study. This section, not related to the issue of the ramps and ramp intersections that the SEIR should have but failed to study, concludes by observing that the LOS F conditions on the off ramp in the evening peak hour would be cured by Mitigation Measure M-TR-11c involving stationing a PCO at the ramp terminus intersection and waving traffic turning right to Mariposa eastbound through the traffic signal at the end of the off-ramp. But that conclusion is completely speculative. This commenter was a long term Giants season ticket holder at AT&T Park and this particular off ramp was on my normal route to the Park. The problem there is not that the signal causes queues to back up the ramp and onto the freeway mainline. It is that once a driver reaches the end of the ramp and has a green light, there is often no place to turn to on Mariposa because eastbound traffic is queued all the way back from Third Street. So placing a PCO there will be largely useless.

The response then discusses the I-80 westbound off-ramp to Fifth Street, and concludes that mitigation measure M-TR-2b, vague measures of unquantifiable effect to encourage travel by non-automotive modes would reduce the Project's impacts at this location. Again, this discussion of a location the SEIR did study is irrelevant to the issue that the SEIR should have but failed to study other locations - unless the implicit message is that, had it done so and discovered impacts, it would have just proposed vague, unquantifiable and ineffectual mitigations and declared the impacts mitigated.

Finally, after four lengthy paragraphs of largely irrelevant matter, the reply turns to the subject of the intersections and ramps that should have been studied and were not. The response notes that under CEQA Guidelines § 15130, defining the location or locations for study "*is within the lead agency's reasonable discretion*" and fundamentally claims that in defining what intersections and ramps were analyzed in this SEIR the City has exercised reasonable discretion. However, this assertion is undermined by content in the comments demonstrating that by prior and ongoing studies in the general area and by common observation, the City knew or should have known that certain intersections and ramps in the SOMA and Mission Bay area that are on logical access and egress routes to the Project site are capacity challenged and are likely to be adversely impacted by the Project, yet it did not study them in the SEIR. Hence, rather than exercising "*reasonable discretion*" as required by CEQA Guidelines, the City, in failing to study these locations, abused its discretion and failed to undertake the good faith effort to disclose impact demanded by CEQA.

That the City has failed to exercise reasonable discretion in this matter is reinforced by two considerations.

- Two UCSF hospitals are located a block from the Project site. Many of the intersections and ramps on logical access/egress routes to/from the Project that, at the City's discretion, the SEIR failed to analyze are on the advised emergency access routes from various points in the City and region to the hospitals and are posted on the UCSF web site. In excluding these intersections and ramps, the City clearly ignored public safety impacts of that decision.
- The State of California Department of Transportation (Caltrans) has commented on the DSEIR as follows. "Project-related queuing impacts on nearby State facilities should be analyzed" (see comment now labeled in SEIR A-Caltrans-5). Caltrans clearly believes the DSEIR has not assessed impacts on a sufficient number of freeway mainline, ramps and ramp intersections that are likely to be impacted by the Project. Caltrans opinion is due the same deference in this matter as that of the City.

The City's response continues, attempting to explain why individual or groups of intersections and ramps were excluded from study in the DSEIR. For example, the response cites 9 intersections along the Embarcadero and 15 along or east of Fourth Street that we claimed should have been studied. It claims that because the Project is shifted to its current location farther south-west from the originally proposed location on Piers 30-32, the primary routes to and from the Project site from Downtown, SOMA, the northern parts of the City and from the North Bay and the I-80 ramps would be shifted farther west, away from these intersections. But this is not true. Except for the relatively few instances in which there is a concurrent evening Giants game at AT&T park, the routes along the Embarcadero and along and east of Fourth Street remain the most effective and imageable [sic] routes to the currently proposed Project site and the parking facilities that serve it from much of the Downtown, SOMA, northern parts of the City, the North Bay and the I-80 ramps to and from the East Bay. Those paths are only likely to be altered on evenings with a concurrent Giants game. And if a massive shift of traffic further west was assumed in the City's thinking as it scoped the current SEIR and excluded the intersections along the Embarcadero and on and east of Fourth on that assumption, why didn't it add more intersections in the Eighth Street corridor (including but not limited to the ramps and intersections at Eighth and Harrison, Eighth and Bryant) and other intersections in the Van Ness, Franklin, Gough, Octavia corridors for example? The City has no good answer.

The response also claims that traffic passing through the Embarcadero intersections and the intersections along and east of Fourth would be less significant because a survey of baseball attendees at AT&T park suggested that many attendees who worked Downtown or in SOMA and drove to work left their cars at their commute parking locations and walked, used transit or took cabs to and from the ballpark. This type of data is of course irrelevant because those considerations should have already been taken into account in the SEIR's assumptions about mode split to the park from those districts. Moreover, this type behavior is likely to become increasingly uncommon as surface parking in those districts disappears and is replaced by parking garages that tend to close earlier than parkers could travel back to them at the conclusion of ballpark or arena events.

The response also cites new study of a single intersection, that of Eighth and Bryant as exemplar of why additional study intersections are not justified. This intersection is an anomalously complex intersection, and the effects of its complexities on traffic operations are difficult to replicate in theoretical delay/level of service calculations. Part of the complexity is that Eighth Street, which is one-way southbound north of Brannan becomes two-way south of Brannan. The complexity is compounded because columns that support I-80 as it crosses above Eighth between Bryant and Brannan are located in the center of Eighth Street and force southbound drivers that want to turn left at Brannan or go through or right there to pick the correct lane before departing the heavily congested intersection of Eighth and Bryant. Moreover, from this point of choice, drivers' views of what choices they must make before moving along Eighth toward Brannan are obscured by the columns and I-80 structure. In general, calculations of LOS at one location are poor predictors of delay/LOS conditions somewhere else. Moreover, in this case, the unique geometrics of the subject intersection and their unusual effects on driver behavior make the outcome of theoretical delay/LOS calculations anomalous rather than exemplar of anything elsewhere.

The City's response is clearly grasping straws to avoid analyzing the full array of intersections and ramps that, in a good faith effort to disclose impact, the SEIR should have evaluated. The City's response to the subject comment set is inadequate, and in continuing to evade analysis of potentially adversely affected freeway segments, intersections and ramps, the SEIR is defective and unsuited for certification. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-21]*)

OPINION 1 - The DSEIR's Transportation and Circulation analysis does not adequately analyze the entirety of the study area impacted by the development

OPINION 2 - The DSEIR's Transportation and Circulation analysis does not analyze impacted study intersections and ramps in the SoMa and North Mission Bay areas, most notably those between Market Street and King Street

I maintain the opinion that the study area should be expanded beyond those assumed within the SEIR to the SoMa area to incorporate relevant travel patterns which would exist for both the proposed project and the "the previous proposed arena site as described within the memorandum report titled "Travel and Parking Demand Estimates for the Proposed Event Center and Mixed Use Development at Piers 30-32 and Seawall Lot 330" which was dated August 9, 2013.

The RTC states that my comment:

> *"...noted that because some of the basketball game attendees would be arriving from the San Francisco downtown and Financial District areas, they would be required to pass through SoMa to arrive at the project site, so that additional intersections in the SoMa area would have to be evaluated. Mode of travel and place of origin surveys of baseball game attendees conducted by the SF Giants, as well as available parking occupancy surveys, suggest that many of those game attendees that drove to work at their jobs in the Financial District and SoMa areas, tend to walk, ride transit, or take a taxi to AT&T Park, leaving their cars at their commuter parking locations in order to avoid the evening commute congestion that typically occurs near I□80 and AT&T Park and having to re□park their cars at game□day rates. It is likely that a similar condition would occur with the proposed project, with many of those working in downtown riding Muni or special event shuttles, and taking taxis or TNC vehicles2, such as Uber or Lyft to the event center, rather than driving and having to park again with limited space availability."*

The SEIR itself, as noted within Table 1 of my original comment letter (provided below) identified several corridors to/from the SoMa neighborhood with substantial trip percentages up to 32% of project traffic.

Table 1
Project Vehicle Trip Patterns to Major Parking Facilities North Mission Bay & South SoMa

Figure	Page	Figure Title	Trip Assignment Along Roadway			
			Seventh St s/o Townsend St	Fourth St s/o Townsed St	King St e/o Third St	from WB I-80 to Fifth St
5.2-14A	5.2-95	Project Vehicle Trip Patterns to Major Parking Facilities - Inbound Weekday PM Peak Hour - No Event and Convention Event	18% / 22%	7% / 7%	5% / 11%	8% / 7%
5.2-14B	5.2-96	Project Vehicle Trip Patterns to Major Parking Facilities- Outbound Weekday PM Peak Hour - No Event and Convention Event	19% / 19%	7% / 12%	5% / 5%	8% / 8%
5.2-14C	5.2-97	Project Vehicle Trip Patterns to Major Parking Facilities - Inbound Saturday Evening Peak Hour - No Event	20%	8%	5%	9%
5.2-14D	5.2-98	Project Vehicle Trip Patterns to Major Parking Facilities - Outbound Saturday Evening Peak Hour - No Event	20%	8%	5%	7%
5.2-14E	5.2-99	Project Vehicle Trip Patterns to Major Parking Facilities - Inbound Weekday and Saturday Peak Hours - Basketball Game Without a SF Giants Evening Game	31% / 32%	13% / 13%	9% / 11%	29% / 30%
5.2-14F	5.2-100	Project Vehicle Trip Patterns to Major Parking Facilities - Outbound Weekday Late Evening Peak Hour - Basketball Game Without a SF Giants Evening Game	31%	13%	11%	20%

Source: "Event Center and Mixed Use Development at Mission Bay Blocks 29-32" DSEIR (June 5, 2015)

It is not reasonable to discount the trips clearly represented by these trip pattern percentages established within the SEIR as irrelevant or unworthy of analysis because they may not be entirely comprised of trips within personal vehicles of those traveling through the SoMa area from the financial district. Even if attendees utilize alternate transportation such as taxis, Uber or Lyft, they will still be new trips added to the roadways which will potentially significantly impact intersections north of the area studied.

The RTC also states:

> *"The previously proposed center at Piers 30-32 was located at the intersection of The Embarcadero and Bryant Street, with very different access patterns compared to the proposed project."*

While true, generally the same level of traffic will be generated by both alternatives, and trips originating from the financial district would still be required to travel through the SoMa area. While admittedly traveling along some different arterials through the SoMa district, the previous analysis considered intersections within SoMa whereas the SEIR does not.

Please feel free to give me a call if you have any questions. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-32]*)

Response to Late Comment TR-2: Methodology, Analysis Locations

The approach in selecting study intersections is described in the SEIR on p. 5.2-7 and the RTC document on pp. 13.11-26 – 13.11-27, and is consistent with the *SF Guidelines*, which states that the study area is generally within a radius of two blocks and 0.25 miles from the project, but a larger area may be determined in the scoping process. For the proposed project, 15 of the 21 study intersections are within a 0.5 mile radius of the project site, and six are between 0.5 and one mile radius of the site. As discussed in the RTC document on pp. 13.11-26 – 13.11-27, the transportation analysis in the SEIR appropriately includes intersections and freeway ramps in the project vicinity and along approach and departure routes most likely to be affected by project-generated vehicle trips. The intersections and freeway ramps analyzed in the SEIR were chosen because they represent the primary gateways that define access for the southern portion of Mission Bay: Third, Fourth, Seventh, 16th, and Mariposa Streets. Beyond these gateways, traffic is broadly dispersed throughout the SoMa street grid, which provides multiple routes for travel to any given destination. Beyond the Mission Bay gateways, traffic analysis was focused on key locations that align with direct access routes to and from these gateways. The suggested list of analysis locations supplied by the commenter includes locations considered far removed from the project site and less likely to be used by those traveling to and from the site, and where the magnitude of traffic and impacts, if any, are likely to be more dispersed.

The commenter disagrees with the response regarding the operations of the I-280 northbound off-ramp at Mariposa Street, based on the past experience of the commenter at this off-ramp prior to games at AT&T Park. As explained on SEIR pp. 5.2-6 – 5.2-7, the I-280 northbound off-ramp will soon be expanded as part of the Mission Bay Area South Infrastructure Plan from the existing two lanes to a planned three-lane configuration at the approach to Mariposa Street. In addition, as described in the SEIR, a number of roadway improvements are being implemented as part of the opening of Phase One of the UCSF

Medical Center at Mission Bay that would improve conditions from those experienced by the commenter. For example, Owens Street is being extended between 16th and Mariposa Street, to connect with the I-280 on-ramp and off-ramp and to create a new signalized intersection at Mariposa Street. Mariposa Street is being widened on the north side, and it will become a five lane facility with two travel lanes each way and exclusive left turn lanes provided at most intersections. The SEIR does not state that the positioning of a PCO would cure the LOS F conditions at this ramp, but instead explains that with implementation of Mitigation Measure M-TR-11c: Additional Strategies to Reduce Transportation Impacts of Overlapping Events, a PCO would minimize the severity of the traffic impacts. Considering the ramp and local roadway network improvements, it is reasonable to assume that stationing a PCO to facilitate right-turns from the freeway off-ramp onto Mariposa Street would improve ramp LOS.

The RTC document addressed the concerns raised regarding the I-80 westbound off-ramp at the intersection of Fifth/Harrison. Specifically, the I-80 westbound off-ramp at Fifth/Harrison also has multiple lanes at the approach to Fifth and Harrison Streets. There are about 1,600 feet between the Fifth/Harrison intersection and the I-80 westbound mainline, with two travel lanes for approximately 88 percent (1,400 feet) of this distance. Given the length and configuration of the Fifth/Harrison off-ramp with two dedicated lanes, it is expected that the project-generated vehicles during the evening peak hour would be accommodated at the off-ramp without affecting mainline operations. It is accurate to state that a decrease in vehicle trips generated by the project as a result of implementing Mitigation Measure M-TR-2b: Additional Strategies to Reduce Transportation Impacts would reduce traffic impacts associated with the project. Mitigation Measure M-TR-2b: Additional Strategies to Reduce Transportation Impacts is not speculative; it specifies a variety of adaptive TDM strategies to reduce traffic congestion in the project vicinity by providing drivers with information on traffic conditions and alternative routes, providing information on on-street and off-street parking conditions, discouraging use of on-street parking through the Residential Permit Parking program, encouraging the use of non-auto modes through parking pricing, and enhancing regional transit access to the area.

The commenter disagrees with the inclusion of the intersection of Eighth/Brannan in the RTC document due to its non-standard travel lane configuration. This intersection was included as representative because it would have higher concentrated volumes of project-related inbound traffic. While its travel lane configuration is somewhat unusual, so are others in its vicinity due to the presence of supporting infrastructure required by the elevated U.S. 101 and I-80 freeways. The lane configuration and striping on all approaches at the intersection of Eighth/Brannan, including those located under the freeways, meet applicable design codes such as the California Manual of Uniform Traffic Control Devices (CA MUTCD). The lane configuration on the southbound approach, perhaps the most unusual, is identified in advance to approaching motorists by appropriate signage. Furthermore, the intersection has not been identified by SFMTA as being a problematic or dangerous intersection. In summary, the evaluation of this intersection by means of the

Highway Capacity Manual methodology is not only not "anomalous" but also meets all the requirements and objectives identified in the original response.

The commenter concludes that the study locations are inadequate because of the proximity of the UCSF facilities and comments by Caltrans. The commenter is incorrect because:

- The SEIR analyzed intersections in the immediate vicinity of the UCSF facilities, and the analysis intersections were reviewed with UCSF. Analysis of additional intersections further afield from the project site and UCSF would not change the conclusions of the emergency vehicle access impact assessment. Also see Response TR-13 below.

- The November 2, 2015 letter from Caltrans on the RTC document did not include any concerns regarding the need for additional analysis locations at or in the vicinity of I-280 or I-80. Therefore, the Caltrans letter does not support the commenter's position.

Issues Raised by Late Commenters on Methodology, Baseline Conditions

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-22

Section 13.11.3, Response TR-2c

Response TR-2c replies to our comments O-MBA10L4-21 and -22, and those of others that the DSEIR understates transit and traffic impacts because it is based on outdated traffic and transit data unrepresentative of existing conditions at the time of filing the Notice of Preparation (NOP) for the SEIR.

The initial point in the response in Response TR-2c is to deny that the baseline data relied upon in the DSEIR was stale, and to claim that the City and its consultants took steps to assure that they relied upon data as up-to-date as feasible. This assertion is factually untrue.

Here we briefly review the facts of the situation, first with regard to transit data.

- The NOP for the Project was circulated on November 19, 2014.
- The data document relied on in the DSEIR transit impact analysis for Muni operations in the City states that this data was collected in the fall of 2010 and at some time in 2011.
- The data relied upon for services in the regional transit corridors serving the City was drawn from a SFMTA TEP project published in October 2012. Obviously, the regional transit corridor data published in that study reflects observations some time before October, 2012.
- Since those times of data collection, there have been a large number of development projects completed and occupied in the C-3, SOMA and Mission Bay and yet others were approved and under construction. In addition, the recovering economy has added considerable numbers of riders to the local and regional transit systems.

Clearly the transit data relied upon in the DSEIR was stale at the time the analysis was performed and this should have been obvious to the City and its consultants. Moreover, contrary to the claim in Response TR-2c that the City and its consultants took steps to assure that they relied upon data as

up-to-date as feasible, new information released as part of Response TR-2c makes obvious that this is not the case.

- Several weeks before the DSEIR was circulated, the City issued updated summarizations of Muni patronage data and regional transit service data.
- Several weeks before the DSEIR was circulated, the City had BART patronage data that was very current – actually through April, 2015.

Yet the City did not update the transit analysis in light of this data before circulating the DSEIR or even acknowledge the existence of newer data in any way in that document. This is improper.

Response TR-26 does not present in full the new transit data set, the San Francisco Planning Department Memorandum Transit Data for Transportation Impact Studies dated May 15, 2015. Instead it presents a composite table compiled from the information in the cited memorandum (Table 5.2-43) sourced to Adavant Consulting/Fehr & Peers/LCW Consulting and dated 2015. This composite table omits key data from the actual May 15, 2015 San Francisco Planning Department Memorandum (a copy of which is appended hereto as Exhibit 1) that indicate the data reflected therein were collected in 2013 for Muni operations and in 2012 for regional transit operations. This raises two key issues:

- Although the revised analysis presented in Response TR-2c is based on newer data, that data is also stale.
- In omitting, in the summary table published in Response TR-2c, the notations indicating the dates on which the newer data was collected, the response either deliberately or inadvertently misleads the public to believe the analysis in the response is based on current 2015 data, which it is not.

Although Response TR-2c mentions having BART's April, 2015 ridership data and claims to have relied on it, there is no evidence in the response of how and where the SEIR made use of it in any way. Although the City has placed the raw BART of April ridership data, ascribed to a May 1, 2015 submission by Val Menotti, Bart Chief Planning & Development Officer, on the SEIR web site, the transmittal narrative is not presented nor is its translation into the regional screenline format relied on in the SEIR. We hereby demand that the conversion of the subject BART ridership data release be provided to the Mission Bay Alliance and its consultants in the format of the regional screenline analysis of the SEIR and that the period of comment be extended beyond the date of its provision to allow adequate time for review and comment on its implications. We also note that BART's own letter of comment on the DSEIR (now Comment A-BART) in its second paragraph of comment (a paragraph the SEIR ignores rather than enumerating for response (see SEIR page COM-19) notes as follows: "Given strong job expansion in San Francisco, BART has experienced unprecedented ridership growth (~25% over the last four years) which creates a number of peak period capacity challenges." This statement clearly demonstrates that any reliance on regional transit data as old as 2012 (which the SEIR continues to rely on) is an inaccurate portrayal of the background conditions on which the Project imposes impacts. Response TR-2c claims to have used the April, 2015 BART data

Response TR-2c presents a reassessment of impacts on the 22 – Fillmore and the T-Third lines based on the purportedly 'new' baseline data set and finds that deficiencies on these lines are not Project impacts because the Project's contribution to ridership does not exceed 5 percent of total ridership at the maximum load points. However, this finding of lacking a ridership contribution in excess of 5 percent at the maximum load point comes about only because of the failure to consider the scenario of weekday Basketball event starts at 6 pm and the SEIR's illogical refusal to consider that there is an offset between the time attendees pass through the arena turnstiles and the time those attendees are traveling on and impacting the transportation system (see our comments O-MBA10L4-17, O-MBA10L4-7, O-MBA10L4-16 and our comments herein with respect to Response to Comments TR- 2a and TR-2d. Had either or both the 6 pm game start scenario and the proper offset between arena turnstile passage time and time traveling on the transportation system been considered, there

would be much more Project travel on the subject lines during the pm peak commute hour (5-6 pm) than is considered in the SEIR and significant impacts on these lines would be disclosed.

Response TR-2c claims that use of the updated transit data does not result in any changes to impact determination for Muni transit presented in Impact TR-4. This conclusion is incorrect and misleading because the analysis was not performed on adequately updated (still stale) transit ridership data and because it was performed without considering reasonable Project contributions to evening commute peak hour transit ridership (because of failure to consider a 6 pm game start scenario and failure to consider the offset between time riding transit and time passing through arena turnstiles for the 7:30 game start scenario).

Response TR-2c also opines that, since ridership figures for the 22 Fillmore and T Third routes were obtained from SFMTA and reflect City's plans for changing the 22-Filmore and completing the Central Subway by year 2020, the SEIR analysis for these lines accounts for development that occurred and is probable to occur through 2020. However, we note that the planning studies for those transit service changes on those lines were performed several years ago and the SEIR presents no clear evidence whether or not the SFMTA projections for those transit projects reasonably reflects the development boom that has occurred in the C-3, SOMA and Mission Bay in the intervening years and whether or not job infill in existing development due to a revitalized economy was reflected.

A final section of Response TR-2c attempts legalistic evasion of the issue of stale existing conditions data. This section starts by stating: "*Overall the transit impact analysis presents a reasonable representation of transit conditions based on available data for the Muni and regional transit providers and additional analysis is not required. Nor have commenters identified any flaws in the analysis that built upon the transit impact analysis.*" This statement is contrary to fact. Four year old data collected at a time when the job and development economy was just starting to begin recovering from a period of stagnation and decline is clearly not representative of conditions after four subsequent years of aggressive development and job boom. And for our part, in our comment letter of July 26, 2015 comprises 27 pages identifying flaws in the analysis that are compounded by the flawed and outdated transit data base assumed as "existing" conditions in the DSEIR. The response goes on to state: "*Although a somewhat different, and yet technically plausible, approach might have been possible, the City's approach is abundantly supported by substantial evidence and represents a reasonable exercise of technical judgment. In general, a lead agency's determination regarding how 'existing physical conditions without the project' could 'most reasonable be measured' is 'quintessentially a discretionary determination*". This statement misrepresents the issue in order to bend the framing of it to fit legal case precedents which are then cited in the response. However, this is absolutely not a technical disagreement about how to go about collecting or reasonably measuring existing transit conditions data. The issue is that the old transit data the City had on hand is simply not representative of the transit conditions that existed in late November, 2014 when the NOP was circulated.

With regard to the issue of stale traffic data (Comment O-MBAL4-21), Response TR- 2c reiterates that the DSEIR adjusted the original counts to account for the opening of the UCSF Medical Center Phase 1 and the Public Safety Building that were nearing completion after the traffic counts were taken. This adjustment for those buildings was acknowledged in our comment O-MBAL4-21 and is not a matter of question. Response TR-2c goes on to state that subsequent traffic counts taken at three intersections in April 2015 confirm that the adjustments to the earlier traffic counts reasonably reflect the added traffic associated with the newly opened facilities cited above. This point is also not challenged in our comment, at least with respect to the three particular intersections counted. However, Response TR-2c then concludes: "*Because the adjusted volumes used in the analysis were similar to or higher than those collected in the field in April 2015, it can reasonably be inferred [emphasis added] that the traffic volumes used in the existing and existing plus project analyses also adequately reflect any changes that may be associated with newly completed projects further afield (e.g., in SoMa)*." The idea that this conclusion can reasonably inferred is utter nonsense. The DSEIR made no attempt to quantify what projects in northern Mission Bay, SOMA and the C-3 were completed after 2013 or nearing completion by early 2015, how much traffic they would generate

and where most of that traffic would go and what study intersections it would affect. The intersections that were counted in April 2015 (Third with Sixteenth, Fourth with Sixteenth and Fourth with Mariposa) are indeed "far afield", being well to the southeast from new developments in northern Mission Bay, the SOMA and C-3 and are unlikely to be affected much by developments in those areas[1]. But other intersections in the Project's scope of study are much closer to those development areas and are likely to be considerably more affected by traffic generated by the uncounted developments there as well as increased traffic to/from those areas due to job growth within existing uses due to the improved economy. The April 2015 counts do nothing more than show the SEIR traffic adjustments for UCSF Medical Center Phase 1 and for the Public Safety Building came reasonably close to getting it right for those particular facilities and those particular intersections. They carry no inference for other new development and for other study intersections farther afield.

Because of these considerations, Response TR-2c is inadequate and the comment that the SEIR traffic baseline is stale remains unrefuted.

Footnote:

[1] This is because traffic from northern Mission Bay, the SOMA and C-3 would likely take other routes journeying to and from the southeast that would not pass through the 3 intersections counted in April 2015.

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-22]*)

Response to Late Comment TR-3: Methodology, Baseline Conditions

Transit

Muni ridership used for the downtown screenline analysis was obtained from the SFMTA and represents the most current data that is available from the agency. More current information for 2014 conditions is not available from the SFMTA. The use of year 2020 ridership data for the 22 Fillmore and Central Subway reflects the best available data used by the SFMTA to plan for projected ridership for the Central Subway project.

As indicated in the SEIR and RTC document, the BART analysis included in the SEIR was based on the April 2015 data provided by BART. Table 5.2-4 in the SEIR presenting existing conditions reflects the April 2015 BART ridership and capacity at the East Bay and South Bay cordons. These ridership and capacity were used in the existing plus project analyses.

Response TR-2c in the RTC document does not present a reassessment of the impact on the 22 Fillmore bus route and the T Third light rail line. The updated downtown screenline analysis, using information from the San Francisco Planning Department's May 2015 memorandum, is for the weekday p.m. peak hour conditions only for the four screenlines and corridors for the outbound direction from downtown (and from the project site). The project's contributions to the two corridors operating at more than the 85 percent capacity utilization standard would be minimal, and would not result in significant transit impacts during the weekday p.m. peak hour on the downtown screenlines. Analysis of a 6:00 p.m. start time for an evening event at the event center is not relevant to the downtown screenlines, because the downtown screenline analysis is in the outbound direction from downtown, while during an evening event, the predominant direction of travel is inbound towards the project site. The capacity utilization at the maximum load point in the inbound direction for the routes in the

downtown screenlines is generally lower, as it represents the non-peak direction of travel. The Muni downtown screenline analysis was conducted for the No Event and the Convention Event scenarios because these two scenarios would generate more outbound transit trips during the weekday p.m. peak hour than the Basketball Game scenario.

Traffic

As stated on SEIR p. 5.2-8, the existing conditions used for the traffic impact analysis are based on traffic counts conducted in 2013 and 2014, which were adjusted to reflect full occupancy and operation of the UCSF Medical Center Phase 1 and Public Safety Building projects which were under construction when the traffic counts were conducted, and which would increase traffic volumes at the study intersections. In April 2015, additional weekday p.m., evening and late evening counts were conducted at key intersections (i.e., Third/16th, Fourth/16th, and Fourth/Mariposa) and compared to the adjusted traffic volumes to confirm that the adjustments to the traffic volumes accurately reflected traffic volumes and patterns associated with the newly opened facilities. Because the adjusted volumes used in the analysis, and on which impact assessments were based, were similar to or higher than those collected in the field in April 2015.

Nevertheless, this commenter speculates that this validation is not adequate because what was true at these intersections might not be true for other intersections, presumably at locations farther away from the project site. The commenter does not identify which intersections or how many intersections would need additional traffic volume counts to validate that the traffic volumes used in the SEIR analysis are not "stale." The commenter does not identify projects in northern Mission Bay, SoMa and C-3 that were completed between the time when the traffic counts were conducted in June 2013 and January 2014 and in November 2014 when the Notice of Preparation was issued that would have the potential to substantially change the traffic volumes or conditions at the study intersections. The underlying traffic analysis included intersections along King and Channel Streets, at the Fifth Street ramps, and the intersection of Third/Cesar because, as direct routes leading to or from key Mission Bay gateways, traffic in these locations would be more likely to be affected by the project than locations where traffic would become dispersed throughout the San Francisco street network farther to the north and west. A limited number of newly-constructed projects have opened between the latter part of 2013 and through 2014 in SoMa and C-3 that would be sufficiently near the project site to affect traffic. Any traffic effects from projects farther to the north and west would be dispersed throughout the SoMa grid.[1] For these reasons, it can reasonably be inferred that the traffic volumes used in the existing and existing plus project analyses are not "stale" and adequately reflect baseline conditions without additional traffic volume counts at more remote locations.

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[1] City staff performed a permit search for projects completed between November 2013 to June 4, 2015, within the area bounded by Folsom Street, The Embarcadero, King Street, and Ninth Street. Developments that were completed during that time period included approximately 110 new residential units.

Issues Raised by Late Commenters on Methodology, Trip Generation

This response addresses all or part of the following comments, which are quoted below:

A-Caltrans2-2 O-MBA20L7-23

Reply to Response TR-2d

Caltrans notes that the RTC Document justifies lower traffic volumes under Basketball Game Conditions in Figure 15a than No Event Conditions in Figure 13a (SEIR, Appendix TR, pgs. TR-156, TR-152). The RTC Document states that the likely arrival of the basketball attendees would be one hour prior to the game. Peak hour traffic volumes under 2040 Cumulative Conditions is assumed during 4pm-6pm. The Document estimates cumulative arrival attendees is five percent during the 4pm-6pm. Thus, the underlying assumptions and methodology may continuously lead to inconsistent traffic patterns of five study intersections (Study Intersections #9 to #13) that surround the project site between Figure l Sa and Figure 13a. For a conservative approach that resolves irregular traffic concerns expressed in our previous letter, Caltrans recommends the report include peak volume 2040 Cumulative Conditions during 6:30 to 7:30 pm as a worse scenario. The worse one-peak-hour cumulative arrival attendees during 6:30 to 7:30 would be 52% while worse one-peak-hour cumulative departure attendees during 9:30 to 10:30 pm would 70%. (*California Department of Transportation (Caltrans), Patricia Maurice, letter, November 2, 2015 [A-Caltrans2-2]*)

Section 13.11.3, Response TR-2d

Response TR-2d concerns our comments now O-MBA10L4-7, O-MBA10L4-7, Caltrans (A-Caltrans-1) and others.

Our comments concern the fact that the DSEIR relies on turnstile data[2] on time of arrival at the Golden State Warriors current venue site (Oracle Arena) and other basketball venues to estimate how many attendees traveling to a game with a 7:30 PM start time would be traveling on the area transportation system in the 4 to 6 PM peak commute period versus in the 6 to 8 PM early evening peak shoulder period without considering the reasonable offsets between the time attendees enter the "paid" areas of the arena and the time when they were actually traveling on the transportation system.

Response TR-2d begins by stating as follows: "*For reasons explained below, the City disagrees with those comments and stands by its analysis, which reflects a number of evidence-backed, conservative assumptions. While some of the points raised in the comments seem intuitively believable, actual data from comparable situations show that the comments have exaggerated the likely numbers of people would arrive [sic] before 6 pm for a 7:30 pm event*."

Let us parse this introductory section of the response before moving to the further details.

Re: "*points raised in the comments seem intuitively believable*",

- It is undeniable fact that attendees occupy capacity on the transportation for a period of time that depends on the length of their journey and mode and that the period they occupy capacity on the transportation system occurs before the time they pass through the arena turnstiles.
- It is undeniable fact that even for attendees who go directly through the turnstiles into the paid section of the arena at the end of their trip to the site, there is a time offset between the time when they stop occupying capacity on the transportation system - when they debark onto the T Third platform, or the 22 Fillmore stop or find a parking place nearby or perhaps even start walking from BART, Caltrain or the other Muni-Metro lines - and the time they pass through the turnstiles

- It is fact that some attendees wait outside the venue, perhaps to meet up with companions traveling separately (possibly to hand them their tickets, just soak in the atmosphere of the crowd arriving or for other reasons). So the time these attendees occupy capacity on the transportation system is even more offset than those who enter the arena directly.
- It is fact that some choose to have drinks or meals at restaurants and bars outside the venue before entering the arena and that the offset between when these attendees occupy capacity on the transportation system and the time they pass through the arena turnstiles is even greater yet.

These considerations are not just "*intuitively believable*"; they are undeniable fact and the SEIR's analysis has failed to take them into account.

Re: "*the comments have exaggerated the likely numbers of people would arrive [sic] before 6 pm for a 7:30 pm event*."

The fact that time of arena event attendees' time on the transportation system is offset from the time they pass through the arena turnstiles for the reasons stated above is not a newly-discovered concept or theory; it is a fact the City and its consultants knew or should have known. It is the City's responsibility to have reasonably considered the offset factors in the SEIR and, based on that, reasonably estimated the number of arena attendees who would be impacting the transportation system during the evening commute peak hour in the case of a weekday evening arena event starting at 7:30 pm. We have made a reasoned effort to estimate how many attendee's travel to such an evening event would be offset into the evening commute peak hour. The City and its consultants have made absolutely no attempt to consider the offset factors in estimating impacts of travelers to a 7:30 pm arena event start on the transportation system in the evening commute peak hour. Hence, the City is in no position to opine that our reasonable estimate based on those offset factors is "exaggerated" since it didn't try to make such an estimate at all.

Re: "*the City disagrees with those comments and stands by its analysis*…"'

This is an attempt to transform what is a matter of fact into a disagreement among experts in the hope that courts will grant deference to the City's opinion in the matter. However, since this is a clear matter of fact, the response is inadequate and the City has refused to make the good faith effort to disclose impact that CEQA demands.

Here we consider of details of Response TR-2d.

Response TR-2d in the last paragraph of Volume 4, page 13.11-41 states:

> "As shown in the table on SEIR p. TR-37 of Volume 3 of the SEIR, multiple basketball venues from various sources were evaluated to derive the arrival patterns at the proposed project arena. Of these, two locations (Oracle Arena in Oakland and Barclays Center in Brooklyn) separately reported arrivals occurring more than one and a half hour prior to the start of a basketball game The remaining facilities reported all arrivals occurring more than one hour before to the start of a game, most likely because those occurring more than one and a half hour prior to the game represent a small fraction of the total attendance. The average percentage of arrivals occurring between 5:00 and 6:00 p.m. for those instances where arrivals occurring more than one and a half hour prior to the start of a basketball game (i.e., between 5:00 and 6:00 p.m. for a typical game starting at 7:30 p.m.) is less than 2.5 percent. Thus, to account for potential daily variability in arrival patterns, as well as the additional time it may take for attendees to enter to the event center after their arrival at the site or nearby vicinity, the SEIR conservatively assumed that more than twice as many attendees as the average (i.e., 5 percent) would arrive between 5:00 and 6:00 p.m."

This section of the response is misleading in several respects. Although Volume 3, page TR 37 presents 7 data sets obtained for 6 NBA basketball venues, examination reveals all of the data is turnstile entry data and only 3 of the data sets for 2 venues provided useful data measuring turnstile arrival times earlier more than 1.5 hours before game start time (which would definitely put travel

by those attendees into the 5 to 6 pm evening commute peak period). One of those is for the Warriors at their current venue, Oracle Arena, and shows only 1 % of attendees arriving more than 1.5 hours before game start time. The other two are for the first two years of operations of the Barclays Center in Brooklyn which respectively showed 2.0 and 4.1 percent of attendees arriving more than 1.5 hours before the start of an evening basketball game.

Let us put this data in perspective. The Oakland-Alameda Coliseum complex on which the Oracle Arena sits has a total of almost 10,000 parking spaces, more than enough spaces to accommodate the entire Arena capacity attendance if attendees arrived at two persons per car occupancy. This facility is noted for tailgating before basketball games as well as before other events. In addition, persons arriving at the complex by BART can readily be observed joining friends who drove and parked at their tailgates. Because of this, the observed 1 percent of attendees turnstile count for Oracle is probably under-representative of the numbers of attendees who actually arrive on the premises more than 1.5 hours before game start by a factor of 25- to 30-fold or so.[3]

The other data sets from Brooklyn show turnstile counts at the Barclays Center more than 1.5 hours before game start at 2 percent in the initial year and 4.1 percent in the second year of operation. These percentages likely reflect in part attendees unfamiliar with a new venue and adapting their pregame behavior as they become more knowledgeable. But neither of the two years turnstile data provides any indication of how many of the attendees actually arrived in the vicinity of the Barclays Center more than 1.5 hours before event start (hence actually traveling on the transportation system in the pm commute peak period).

The SEIR takes these three data sets, averages them, finds them to be less than 2.5 percent of total attendees, doubles that to 5 percent and assumes that becomes a "*conservative*" estimate covering all the considerations why attendees might have arrived in the Project area 1.5 hours or more before event start (hence been traveling on the transportation system in the pm peak commute hour.). The problem with this is, there is nothing that connects the turnstile percentage of attendees entering the arena more than 1.5 hours before event start to the percentage who arrive near the venue site 1.5 hours before or indicates that double that turnstile count is a "*conservative*" estimate of that latter item. The claimed "*evidence backed*, *conservative assumptions*" the City claims to have made in this matter has no direct quantified or quantifiable relationship to the "*evidence*" the SEIR cites. The City, its consultants or the Project sponsor could easily have easily and inexpensively measured attendee arrivals to the Warriors current venue environs (the Oakland Alameda Coliseum property) via motor vehicle and BART, but they failed to do so. By 'deeming this unnecessary' as it does on page 13.11-42, Response TR-2d expresses preference for the SEIR's own unsubstantiated guess as to how many attendees of a 7:30 pm start basketball event are actually traveling on the transportation in the pre-6 pm evening commute peak hour rather than having reliably measured data. And that guess is highly favorable to the Project since the low number of travelers in it minimize the chance of Project impacts on the transportation system being disclosed for the pm commute peak hour. The response is inadequate and inconsistent with the good faith effort to disclose impact that CEQA demands.

Footnotes:

[2] The time attendees actually enter the "paid" areas of the arena.

[3] We note that it would not have been difficult or costly for the City, its consultants or the Project sponsor to have taken aerial photos of parking at the complex 1.5 hours before game start and again some time after game start, counted the cars in each, and used the relative numbers as a reasonable surrogate measure of what percentage of attendees arrive 1.5 hours before event start.

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-23]*)

Response to Late Comment TR-4: Methodology, Trip Generation

In response to the Caltrans' comment, the traffic analysis presented in the SEIR is internally consistent for existing plus project and cumulative conditions; there are no "inconsistent traffic patterns" or "irregular traffic" assumptions included in the analysis. RTC Response TR-2d explained the perceived anomalies regarding lower traffic volumes in the immediate vicinity of the project site under the Basketball game scenario compared to the No Event condition. The Caltrans letter acknowledges and accepts the explanation.

The Caltrans letter indicates that for the Basketball game scenario, there would be more project-related traffic in the peak hour during the 6:00 to 8:00 p.m. or 9:00 to 11:00 p.m. periods than during the 4:00 to 6:00 p.m. period; this is correct. The Caltrans letter recommends that the SEIR include a 2040 cumulative analysis of the 6:30 to 7:30 p.m. period under the Basketball Game scenario as it would have higher project traffic volumes than the peak hour of the 4:00 to 6:00 p.m. period. An additional cumulative analysis is not necessary because:

- The 6:30 to 7:30 p.m. period represents the end of the peak commute period and has lower background traffic volumes (non project related) than the peak hour of the 4 and 6 p.m. period.

- Virtually all project traffic during the 6:30 to 7:30 p.m. period is inbound to the project site, generally operating in the non-commute direction as the majority of the traffic at that time is leaving the San Francisco downtown, SoMa and Mission Bay area.

- The SFCTA travel demand model on which the analysis of cumulative 2040 conditions has been based has a scenario that has been developed and validated over the years for the 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. periods. These scenarios, which are updated regularly by the SFCTA, have always been used in the cumulative analysis of many projects in San Francisco. No model scenario exists that has been developed or validated by the SFCTA for the 6:30 to 7:30 p.m. period.

- The purpose of the 2040 cumulative analysis under CEQA is to identify additional potential cumulative impacts beyond those already identified under the existing plus project conditions. Given that the majority of the project traffic would concentrate in the immediate vicinity of the site and represent the majority of the flow during the weekday p.m. (5 percent) and evening (65 percent) analysis periods, those potential impacts would be identified in as part of the existing plus project conditions analysis. As noted in the SEIR, at intersections where project-specific significant impacts were identified for existing plus project conditions, the proposed project would also be considered to result in a cumulative impact under 2040 cumulative conditions.

As described in the SEIR on pp. 5.2-81 – 5.2-82 and RTC document on pp. 13.11-41 – 11.11-42, time of travel for the event center events was accurately identified through appropriate use of best and most reliable data for other comparable sports facilities, such as Oracle Arena in Oakland and other facilities in Houston, Phoenix, Sacramento, and New York. Of these, two locations (Oracle Arena in Oakland and Barclays Center in Brooklyn) separately reported arrivals occurring more than one and a half hour prior to the start of a basketball game. The

remaining facilities reported all arrivals occurring more than one hour (as opposed to 90 minutes) before the start of a game, most likely because those arrivals occurring more than one and a half hour prior to the game represent a small fraction of the total attendance. The average percentage of arrivals occurring between 5:00 and 6:00 p.m. for those instances where arrivals occurring more than one and a half hour prior to the start of a basketball game (i.e., between 5:00 and 6:00 p.m. for a typical game starting at 7:30 p.m.) is less than 2.5 percent. This would indicate that unlike football games, pre-game tailgate parties do not typically occur for basketball games. Nevertheless, based on professional judgment, to account for potential daily variability in arrival patterns, as well as the additional time it may take for attendees to enter to the event center after their arrival at the site or nearby vicinity, the SEIR conservatively assumed that more than twice as many attendees as the average (i.e., 5 percent) would arrive between 5:00 and 6:00 p.m.

In addition, the traffic analysis locations (intersections and freeway ramps) evaluated in the SEIR are located within relatively close proximity of the project site, necessitating only a short, relatively quick walk to the event center, so that the assumed 5 percent of game attendees arriving at the event center adequately accounts for those using the transportation infrastructure between 5:00 and 6:00 p.m. Furthermore, in order to avoid understating impacts, the transportation analysis assumes an exact overlap between the peak hour for background traffic and the arrival of game attendees (i.e., between 5:00 and 6:00 p.m.). In reality, at various study locations, the highest peak hour traffic volumes actually occur earlier (e.g., from 4:30 to 5:30 p.m. or from 4:45 to 5:45 p.m.). The result is a conservative assessment of potential traffic impacts in the SEIR.

For basketball games in particular, the SEIR's transportation analysis assumed that twice as much travel would occur during the 5:00 to 6:00 p.m. peak hour compared to the average of arrivals obtained from actual data for the existing Barclays Center in Brooklyn, New York, which is located in a similar urban setting. The travel characteristics presented in the SEIR on Table 5.2-21 on p. 5.2-82 represent the percentages and time periods when attendees would be expected to be on the transportation network in the study area. Because parking facilities in the SoMa and financial district areas are predominantly occupied by workers who drive to downtown during the day, relatively few spaces would be available for event-related parking prior to 5:00 p.m. Vehicle trips occurring by taxi and other rideshare modes from downtown would occur closer to the event start time, and are included in the SEIR analysis.

As noted in the RTC document, additional surveys of attendee arrivals at the Oracle Arena where the Golden State Warriors currently play or other NBA facilities were deemed unnecessary, because, as noted above, arrivals to the Oracle Arena during the 5:00 to 6:00 p.m. peak hour are low (about 1 percent of the total, and while some attendees may tailgate in the parking lot, this activity would not be possible at the project site and therefore would not be representative) and because, as noted above, data from another location with similar urban and development conditions to the proposed project (i.e., Barclays Center in Brooklyn, New York) was determined to represent the best and most reliable data for use in

developing travel demand for the project. The commenter's assertion that surveys of the Oracle Arena arrivals would demonstrate that the 1 percent of arrivals during the 5:00 to 6:00 p.m. peak hour are underestimated by a factor of 25- to 30-fold (i.e., that between 25 and 30 percent of attendees arrive at the Oracle Arena premises during the 5:00 to 6:00 p.m. peak hour for a basketball game that starts at 7:30 p.m.) is not supported, nor does it make sense given the travel characteristics at NBA facilities in other cities and the typical 7:30 p.m. start time.

Issues Raised by Late Commenters on Methodology, Travel Modes

This response addresses all or part of the following comments, which are quoted below:

A-MTC-3

User Mode Choice

The approach to estimating mode choice relies on observed data from AT&T Park/the San Francisco Giants and the Moscone Center, combined with conservative assumptions regarding transit, pedestrian, and bicycle use. The presence of analogous developments in the vicinity of the Mission Bay location with observed data on travelers is a very useful asset to the Mission Bay project and the analysis wisely leverages this information. MTC believes the mode split described for the project is reasonable and achievable. (*Metropolitan Transportation Commission, Ken Kirkey, letter, October 30. 2015 [A-MTC-3]*)

Response to Late Comment TR-5: Methodology, Travel Modes

OCII acknowledges MTC's review and concurrence regarding the travel mode assumptions used in the transportation impact analysis in the SEIR.

Issues Raised by Late Commenters on Methodology, Traffic LOS

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-24

Section 13.11.3, Response TR-2f

Response TR-2f replies to our comments O-MBA10L4-3, O-MBA10L4-4, O-MBA10L4-23, O-MBA10L4-24, and O-MBA10L4-27. The first and fourth of these comments relate to the SEIR's failure to define the severity of the Project's traffic impacts. The second and third of these comments relate to failure to evaluate impacts at intersections under PCO control and the fifth relates to the SEIR's failure to account for the effects of train passage in the analysis of the intersection of Sixteenth, Seventh and

Mississippi. Both of these latter matters also ultimately go to the issue of failure to define severity of impacts.

With regard to the failure to address changes in severity to impacts at locations already operating under conditions qualifying as impacted, the first three paragraphs of the response are padding, reciting definitions of LOS that are not in dispute in the comments. The next three paragraphs of the response on page are legalistic arguments about whether CEQA requires disclosure of distinctions in severity to impacts where conditions are already in a state considered impacted. Without engaging in the argument of legal matters, we can state that from an engineering perspective, distinctions in severity of impacts represented by changes in delay in the LOS/delay computations are highly significant. If the computations at a ramp or intersection already at LOS F show changes of a couple seconds of delay or so, this is hardly perceptible to drivers and is not indicative of meaningful change in severity of impact. But if the computations show changes of, for example, a half-minute or a minute or more, this is indicative of a dramatic change in severity that is highly perceptible and involves potential for queue blockages of additional lanes or upstream locations. Since the calculation procedures are capable of generating these estimates of delay and distinction of severity, this information should not be suppressed and ignored – doing so appears to be inconsistent with the good faith effort to disclose impact that CEQA demands.

The response goes on for four more paragraphs discussing the evolution of LOS computation techniques, the City's practices in use of them, and the technical meaningfulness of them. The single point in these paragraphs worthy of consideration can be summarized as follows: Calculation procedures to determine delay have been validated for instances where the subject location is below or slightly above capacity; in circumstances where capacity is greatly exceeded the validation is less strong and therefore the delay predictions are less reliable. We acknowledge this. But it is still clear if, say, an intersection or ramp is a couple seconds over the LOS F threshold in the existing condition and addition of project traffic computes to add a half minute or minute or more of delay, those are significant changes in severity. This is regardless of the fact, because of the lower reliability of the delay calculation in the LOS F zone, that if the traffic were actually added in the field and the changes in delay were measured, the results might be 27 seconds added instead of a half-minute or 55 seconds added instead of a minute.

Response TR-2f continues for another page-and-a-half of irrelevant speculation that in the future, consideration of LOS/delay may be excluded from CEQA consideration. For the present, LOS is a CEQA consideration, the City has relied on it and that portion of the response can safely be dismissed.

Response TR-2f continues, replying to the issues in O-MBA10L4-4, O-MBA10L4-23, concerning failure to evaluate LOA/delay impacts at intersections under PCO control. This comment concerns specific tables in DSEIR Volume 1 that are explicitly identified in the comments, Tables 5.2-47 and 5.2-48, respectively located on pages 5.2-172 and 5.2-174. These tables have no entries for LOS or delay at certain intersections, with the normal space for delay and LOS entries in those tables filled with the notation "PCO Controlled". The response points to completely different tables, Tables 5.2-34, 5.2-35 and 5.2-36 as having delay and LOS entries for those intersection locations. This response evades the following questions:

- What is LOS and delay at the times these intersections are PCO controlled?
- Does the SEIR conclude that PCO control mitigates significant impacts at these locations or do they remain significantly and unavoidably impacted?

The response is inadequate.

The final portion of Response TR-2f concerns the apparent lack considering the effect of Caltrain train movements on delay and LOS at the intersection of Seventh, Sixteenth and Mississippi. The response confirms that the SEIR analysis did not attempt to analyze the effect of Caltrain train movements on the LOS/delay compiled for the intersection of Seventh-Sixteenth and Mississippi. It points out that the SEIR analysis shows that with the reductions in general traffic lanes associated with the 22 Fillmore Transit Priority project, together with Project traffic, with or without

overlapping Giants games, this location would be at LOS F. It then claims that, because the computation of delay is less reliable when LOS F conditions are already evident, there would be no point to attempting to further quantify the situation with respect to the effects on the subject intersection by Caltrain movements on the immediately adjacent grade crossing of Sixteenth. This absurd response ignores and attempts to evade the key point of the comment which is that had Caltrain movements been considered, there is a good prospect the analysis might have shown that traffic on Sixteenth would queue to an extent that might obstruct the intersections of Sixteenth with Owens, Sixteenth with Fourth, and even Sixteenth with Third. Since these locations are on a critical emergency and regular access route to the UCSF hospitals it is imperative that such an analysis be done (a good case for micro-simulation) and the SEIR is critically deficient for having failed to perform it. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-24]*)

Response to Late Comment TR-6: Methodology, Traffic LOS

As described in Response TR-2f in the RTC document on pp. 13.11-48 – 13.11-56, the SEIR fully discloses all significant traffic impacts. CEQA does not require identification of degrees of "worseness" beyond identification of significant impacts, and LOS methodologies do not accurately calculate delay beyond LOS F conditions. As discussed in the RTC document in Response TR-2f, the equations used to determine vehicle delay have been validated for conditions when an intersection is below, or slightly above capacity, and therefore does not properly represent oversaturated (i.e., beyond LOS F) conditions. For example, Exhibit 16-14 on page 16-24 of the Highway Capacity Manual 2000 (HCM 2000), which relates delay calculations with vehicle capacity, shows that once a delay of 80 seconds per vehicle is reached, maximum capacity (v/c=1) is also attained. For calculated delay values above 80 seconds, the exhibit shows corresponding v/c values above 1.0 (the traffic volume is over the intersection capacity), which are not possible in the field. Thus, while LOS calculation sheets can produce outputs that show seconds of delay in excess of 80 seconds (these data are available in the transportation analysis background files for this SEIR, in Appendix TR, Volume 3 of the SEIR), these calculations should not be used to indicate the degree of "worseness" for traffic LOS F conditions due to these methodological limitations. Consistent with the methodological strengths of LOS analysis techniques, these techniques have been appropriately used in this SEIR to apply all feasible mitigation measures and to identify all significant traffic impacts when mitigation was not feasible.

As discussed in the SEIR and the RTC document, the Highway Capacity Manual (HCM) methodology used to calculate intersection LOS at signalized intersections is based on the peak 15-minute period of the one hour with the greatest traffic volume, and it assumes that during the analysis period, the traffic signal operation and traffic movements and flow would generally operate under the same regular pattern. This is not the case at intersections managed by PCOs before or after events at AT&T Park. At those locations, the normal operation of the traffic signal is interrupted due to travel lane or roadway closures, PCOs providing longer crossing times for pedestrians, and PCOs halting traffic flow temporarily to clear out the intersection or to allow transit to move, among other event-related transportation management strategies. These real-time responses to unfolding events allow for improved levels of traffic control compared with what mechanized traffic-light systems

can deliver. Mechanized systems operate with less flexibility, and are unable to respond immediately, in real time, to observed traffic conditions. As a result, the analytical tools and measurements appropriate for assessing the effectiveness of mechanized systems do not apply to PCO-controlled intersections. For all of these reasons, the intersection LOS at PCO-controlled intersections does not provide meaningful information and is not presented for those locations where PCOs already actively manage intersection operations. The intersection delay at study intersections where PCOs would be stationed as part of the project were analyzed not assuming PCO intervention, and conditions with PCO intervention are not possible to determine for the above-noted reasons.

As explained in the RTC document, the SEIR analysis did not explicitly include the delay associated with the at-grade crossing of Caltrain at the study intersections of Seventh/Mississippi/16th and Seventh/Mission Bay Drive, but the delay and LOS presented in the summary tables does reflect traffic conditions, including automatic gate operations. Prior to incorporating the 22 Fillmore Transit Priority Project into the intersection LOS analysis, the LOS conditions were verified based on field surveys of intersection operations conducted as part of this project and the UCSF Long Range Development Plan (LRDP) analysis conducted in 2013 and 2014. The results were also compared to the LOS analysis for existing conditions presented in the EIR prepared for the Caltrain electrification project.[2] The LOS results obtained for these two study intersections for the weekday p.m. peak hour were found to be generally consistent with field observations and the analyses presented at the two aforementioned reports.

As noted in the RTC document in Response TR-2f on pp. 13.11-55 – 13.11-56, the SEIR discloses project impacts at the two study intersections where Caltrain operates. Under existing plus project conditions, the addition of project-generated vehicles would worsen the existing LOS conditions at these two intersections where Caltrain operates. For conditions without a SF Giants evening game at AT&T Park, the proposed project would result in significant traffic impacts at the intersections of Seventh/Mississippi/16th (weekday p.m. and weekday evening peak hours) and Seventh/Mission Bay Drive (weekday evening and Saturday evening peak hours). With an overlapping SF Giants evening game, the proposed project would also result in significant traffic impacts at Seventh/Mississippi/16th (weekday p.m., weekday evening, and Saturday evening peak hours) and Seventh/Mission Bay Drive (weekday p.m., weekday evening, weekday late evening, and Saturday evening peak hours).

See Response to Late Comment TR-13, below, regarding emergency vehicle access.

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[2] Peninsula Corridor Electrification Project, Final EIR, January 2015. SCH # 3013012079. Available online at: http://www.caltrain.com/projectsplans/CaltrainModernization/Modernization/PeninsulaCorridorElectrificationProject/PCEP_FEIR_2014.html. Accessed September 15, 2015.

Issues Raised by Late Commenters on Methodology, Transit Capacity Utilization

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-25

Section 13.11.3, Response TR-2g

This response replies to our comments O-MBA10L4-3-13a and O-MBA10L4-18 which concerns the criteria the City uses to define impacts on transit.

To our comment that the ordinary transit impact criterion, ridership in excess of 85 percent of screenline capacity based on scheduled service, or by scheduled line service where an individual line evaluation is ordered, is unreasonable and unrealistic. Our reasoning is based on the fact that Muni rarely, if ever actually delivers the effective capacity of full scheduled service due to missed runs, bunching and skip-stopping and other issues related to lack of schedule reliability or on-time performance. The response describes how passengers are counted, but this clearly does not include those left standing at bus stops and LRT platforms. It also claims that the procedure takes into account the schedule reliability and on-time performance issues, but demonstrates no clear way that this is true. It also fails to address the issue that, when only a screenline analysis is performed, this assumes the excess capacity on one line is available to serve the excess ridership on another, while in reality, most people's travel patterns are well served by only a single line.

The response then moves to a key issue, that the City has relaxed the normal threshold of impact from 85 percent to 100 percent of capacity for this particular Project. One of our criticisms is that relaxation of the normal threshold of significant impact for one favored project is inconsistent with the good faith effort to disclose impact that CEQA demands. The response's reply to this is that San Francisco already did the same for the 34th America's Cup competition event and New York City does it all the time for large special events. But the America's Cup competition is/was fundamentally different from the proposed Project in that it involved large-attendance spectator event competition occurring over just a few days in a single year; the Project involves events on over 200 days per year repeated over many, many years. Moreover, the fact that nobody noticed that the City changed the rules for that specific event does not make it right then and does not justify making a special change of the impact criteria for this Project or for any project. As regards to what New York City does for transit impact criterion with respect to large special events there, that is irrelevant to San Francisco.

A key issue identified in the comments is that while event-attendees may tolerate 100 percent-of-capacity crush loads (a justification the DSEIR used for the relaxed impact criterion), the problem is that this imposes a special misery on the people who are normal users of the affected lines at the times. Response TR-2g fails to address this relevant point. Furthermore, the issue of who the regular riders who are adversely impacted when special event attendees overcrowd and slow the operation of the affected transit lines has Social Justice implications. We explore this topic, which the SEIR fails to address, below.

Other commenters provide evidence that the community south of the Project site served by the T Third line is a disadvantaged community that is adversely impacted by the effects of transit services to the Project that create social justice issues unaddressed in the SEIR. Here we discuss transit operations considerations that lend support to the assertion that the SEIR has failed to address social justice issues.

- Regular users of the T Third will suffer unpleasant overcrowding due to event-goers in the pre-event and post-event periods, having to deal with scarcity of seating and uncomfortable sharing of standing space with boisterous pre-event goers and over-exuberant or angrily depressed (and often liquor-fueled) departing event goers.

- The City's decision to reduce the threshold of significant impact from the normal 85 percent of capacity to 100 percent of capacity exacerbates the overcrowding impacts on the regular user community.
- Special T Third shuttle services to the Project site that turn back near the intersection of Sixteenth and Third occupy time slots that could be filled by runs that serve the community to the south in this corridor.
- Heavy boardings and alightings associated with event arrival and departure travel increase station dwell times, slowing service to normal users south of the Project site. Delays associated with shuttle operation turn-backs do the same. Also, turn-backs tend to create big gaps in service south of the Project site, as is reportedly already evidenced as the result of Giants games.
- Reconstruction of the T Third station platform near the intersection of Third with Sixteenth to accommodate Project crowds, a reconstruction that will require over a year, will inevitably delay T Third services to the disadvantaged community to the south over the duration of the construction period. At times this may even require substitution of inferior bus services.

All of these constitute transit operational reasons why the SEIR should have included a Social Justice Impact section that has not been provided. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-25]*)

Response to Late Comment TR-7: Methodology, Transit Capacity Utilization

As described in Response to Late Comment TR-3 above, Muni ridership used for the downtown screenline analysis was obtained from the SFMTA and represents the current data that is available from the agency and used to determine project impacts on Muni service for development projects. While Muni has not met its on-time performance goals, most of the scheduled service is delivered (i.e., between 97 and 99 percent), and most routes operate at less than capacity utilization at the maximum load point.[3] The methodology used to develop transit ridership by the SFMTA for use in transit impact analyses was detailed in the RTC document in Response TR-2g, and accounts for actual operations, including the extent of crowding when transit headways are not met.

The commenter is incorrect in stating that the City relaxed the transit significance threshold for this particular project. The 85 percent capacity utilization standard typically used for peak hour transit analysis was applied to the downtown screenlines, the T Third, and the 22 Fillmore analyses for the weekday p.m. peak hour. The 100 percent capacity utilization standard was applied for analysis hours outside of the weekday p.m. peak hour (i.e., weekday evening, weekday late evening, and Saturday evening conditions), and only to the T Third, 22 Fillmore, and the Muni Special Event Shuttles (i.e., not the downtown screenlines). The use of the 100 percent capacity utilization threshold for transit analysis related to pre-event and post-event conditions reflects riders' higher tolerance for near-capacity loadings associated with events. As described in the SEIR, the 100 percent capacity utilization threshold was used in the transit analysis for The 34th America's Cup and James R. Herman Cruise Terminal and Northeast Wharf Plaza EIR, and would similarly be applied to other event venue projects where special event transit service would be proposed. The

[3] SFMTA, Strategic Plan Metrics Report, November 2015. Available online at https://www.sfmta.com/about-sfmta/reports/service-standards. Accessed November 20, 2015.

commenter states that 100 percent capacity utilization represents crush load conditions; this is not correct. As noted in the RTC document, crush load conditions occur when ridership exceeds 125 percent of the planning capacity of the vehicle as identified by Muni.

As indicated on Tables 5.2-40 though Table 5.2-42 on SEIR pp. 5.2-136 – 5.2-137, the capacity utilization of the 22 Fillmore for all existing plus project scenarios and analysis hours would be less than the 85 percent capacity utilization standard. Capacity utilization of the T Third light rail line would also be less than the 85 percent capacity utilization standard during the weekday p.m. peak hour, weekday late evening peak hour, and the Saturday evening peak hour. The capacity utilization on the T Third would exceed 85 percent only during the weekday evening pre-event condition for a sell-out game or concert event. As noted on Table 5.2-41 on SEIR p. 5.2-137, during the weekday evening peak hour the capacity utilization would be 93 percent.

The SEIR acknowledges that prior to and following an event, the 22 Fillmore and T Third would become more crowded. Operation of the T Third service at more than the 85 percent capacity utilization standard for short periods of time to accommodate event attendees does not represent social justice issues noted in the comment, and the commenter is not correct in stating that a social justice impact section is required in the SEIR (See Exhibit D, Section 2, Response to Late Comment GEN-2 and RTC document Section 13.2.4).

- Prior to and following an event, regular users of the T Third would be subject to more crowded conditions that exceed the capacity utilization standard, but which are not crush load conditions, for only a portion of the route between Market Street and the project site. As noted above, the capacity utilization of the T Third would exceed the 85 percent capacity utilization standard only during the weekday evening pre-event condition for a sell-out evening event (and not post-event as stated in the comment).

- As noted in the SEIR on pp. 5.2-75 – 5.2-77 and RTC document on pp. 13.11-60 – 13.11-61, the 85 percent capacity utilization standard was applied to the weekday p.m. peak hour conditions for the downtown screenlines, and the 22 Fillmore bus route and the T Third. The 100 percent capacity utilization was applied to the weekday evening, weekday late evening, and Saturday evening conditions. Only the T Third would exceed the 85 percent capacity utilization standard during the weekday evening peak hour.

- The Muni Special Event Transit Service Plan does not assume that there would be a reduction in transit service elsewhere in San Francisco, and its provision would not conflict with existing or planned T Third service to the south of the project site.

- Prior to and after an event, the dwell time – the time it takes passengers to enter and exit the train – at the UCSF/Mission Bay Station would increase due to increased passengers at the station. The project includes features to enhance operations of the T Third, such as platform improvements and crossover tracks, to minimize delays associated with the additional service to the project site.

- Construction of improvements to the UCSF/Mission Bay Station platform would require substitution of light rail service by bus. Service interruptions would be minimized, to the extent possible, but could not be avoided. It is unclear why the commenter believes that

bus service would be considered inferior to light rail service. San Francisco provides numerous light rail lines and bus routes throughout the City, with most transit service provided via buses.

Issues Raised by Late Commenters on Methodology, Cumulative Analysis Year and Context

This response addresses all or part of the following comments, which are quoted below:

A-MTC-4 O-MBA20L7-26

Regional Transportation Infrastructure

The baseline transportation network for the Project is adequately described in the SEIR. Relative to transportation impacts the information cited regarding the Central Subway and Muni Forward projects is correct. Expanded Muni boarding islands to accommodate passenger demand is a beneficial infrastructure investment that will increase transit capacity during peak usage periods. Therefore, improvements to the Muni UCSF/Mission Bay Station Platform, both under the proposed project and the Muni UCSF/Mission Bay Station Variant, will benefit not only the Project but also Muni transit riders within Mission Bay generally.

The SEIR describes Muni shuttle routes that are not specifically included in Plan Bay Area. This type of flexible, relatively low cost operational effort does not have to be included in Plan Bay Area. However, it should be noted that similar service boosts were included in PBA related to two major, multi-phase neighborhood development projects in San Francisco, Treasure Island & Hunters Point/Candlestick Point. Similar to Mission Bay, both of these neighborhoods are Priority Development Areas (PDAs) and will be incorporating a large share of Plan Bay Area's growth allocation of housing and jobs for the City and County of San Francisco through 2040.

The SEIR includes a cumulative impact analysis that is appropriately comprehensive and reflects nearby planned development in the Mission Bay neighborhood as well development that is envisioned in the Central SOMA neighborhood plan. Infrastructure investments analyzed in the cumulative impact analysis include: Interstate 280 ramp changes; the extension of the MUNI 22-Fillmore trolley bus to Mission Bay; the Central Subway; the Muni Forward service and capacity improvement project; the addition of the new, expanded Transbay Terminal; Caltrain Electrification; the Downtown Extension that will link Caltrain from its current terminus at 4th and King to the Transbay Terminal; and, unspecified capacity upgrades for other regional transit operators. Regional improvements like those addressed in the cumulative impact analysis are funded through MTC, its $293 billion regional transportation plan budget through 2035, encompassing reasonably anticipated regional, state and federal fundings [sic] sources. Moreover, it should be noted that a number of the regional improvements addressed in the SEIR including the Central Subway are already under construction. (*Metropolitan Transportation Commission, Ken Kirkey, letter, October 30. 2015 [A-MTC-4]*)

Section 13.11.3, Response TR-2h

This response replies to our comments O-MBA5-6, O-MBA10L4-9, O-MBA10L4-10, O-MBA10L4-11. O-MBA10L4-12, O-MBA10L4-26 and O-MBA10L4-36 and those of others. The points of these comments are summarized as follows:

- The cumulative analysis, pegged to Year 2040, 25 years from now, is purely speculative.
- While a speculative look at conditions 25 years hence is not objectionable, overlooking a cumulative scenario 10 years hence misses the most active concerns of the current residents of San Francisco and the region, hence the SEIR is defective as an information document.
- Absent inclusion of a shorter time-frame cumulative analysis, the long-term cumulative analysis deludes the public as to the nearer-term cumulative consequences of the Project.
- Given the rapid pace of development approvals including frequent planning and zoning variances, a 25 year forward cumulative analysis based on General Plan development quantifications is irrelevant.
- The transportation planning forecast tool used to prepare the travel forecasts for the 2040 cumulative analysis has a greater validation error (by a factor of 2) than the threshold of Project cumulative impact.
- The City is actively planning massive changes to the transportation network that would substantially alter (seemingly to the Project's detriment and to make it more impactful) transportation conditions in the immediate Project vicinity and that are as reasonably foreseeable as the plan development totals relied on in the 2040 analysis. The SEIR has failed to assess these transportation network changes.
- The SEIR uses an improper baseline for assessing cumulative transportation impacts. It assesses the Project's impacts relative to 2040 conditions that are assumed to exist without the Project. Per CEQA, it should evaluate the Project's impacts, in combination with those of other present and reasonably foreseeable future projects on the existing environment. The essential difference is that what the SEIR has done is to compare a projection to a projection. CEQA requires comparison of a joint projection to a known (the existing condition). These are different things.

Response TR-2h begins with a laborious 4-page description of the City's ordinary practices in cumulative analysis and of the SF-CHAMP transportation model. The discussion fails to address any of the issues in the comments and, in particular, the SF-CHAMP model's calibration error being double the threshold of impacts that it is being relied upon to disclose.

Response TR-2h continues in an attempt to justify the distant year cumulative analysis as follows:

> The 2040 cumulative horizon year is preferable to shorter period because the 25-year horizon year more accurately accounts for land use changes and their associated transportation network changes, as well as other planned transportation improvements. Future growth occurs according to the vagaries of variable economic conditions, development trends, changing sponsor development priorities, and legal actions that delay or curtail proposed development, and therefore, short-term land use growth patterns cannot be accurately predicted in five-year increments. In particular, redevelopment projects such as those included in the 2040 growth forecasts (e.g., Mission Bay Plan, Candlestick Point - Hunters Point Shipyard Plan, redevelopment of Pier 70 and Seawall Lot 337), often take longer than anticipated to be completed. For example, the Mission Bay Plan was anticipated to be substantially built-out by 2015, which is the cumulative analysis year for transportation conditions in the Mission Bay FSEIR; however, construction of development is still underway and the UCSF Mission Bay campus is anticipated to be completed by 2019. Nearby, the Candlestick Point - Hunters Point Shipyard Phase II Development Plan identified completion of about 3,100 residential units by 2017; however, only about 240 of the 3,100 residential units are anticipated to be completed by the end of 2015. Construction of development part of the Pier 70 project is anticipated to continue through 2030. Thus, because larger multi-year development proposals would be built over a number of years, a future cumulative analysis year considers completion of buildout of these projects. Therefore, the cumulative impact analysis presented on SEIR pp. 5.2-208 – 5.2-232 (i.e., Impact C-TR-1 though Impact C-TR-10) adequately reflects the proposed project's impacts in combination with other past, present, and reasonably foreseeable future projects, and a different or additional cumulative analysis year is not warranted.

This response begs the question: If all this is true, why didn't the City use a 50, 60 or 100 year period for the cumulative analysis. The response, although seemingly filled with factual information, is nonsense relative to the issues.

Also, nothing in the response addresses the final bulleted point above or its elaboration in the original comments. CEQA requires evaluation of the cumulative condition, including the Project in combination with other foreseeable in comparison to the existing environment, not a comparison of two hypothetical future conditions. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-26]*)

Response to Late Comment TR-8: Methodology, Cumulative Analysis Year and Context

As noted in MTC's comment, improvements to the Muni UCSF/Mission Bay station platform would benefit all T Third riders using the station. As indicated by MTC, the Muni Special Event Transit shuttles, which would only be implemented during larger events at the project site, do not need to be included in MTC's Plan Bay Area. Transportation infrastructure investments noted by MTC were included in the cumulative transportation impact analysis, and, as noted in the comment, a number of the regional improvements are already under construction.

The appellant raises several unsupported points regarding the analysis of cumulative conditions in the SEIR.

- **The year 2040 analysis is speculative.** The analysis presented in the SEIR is based on sound methodological transportation planning practices. The travel demand forecasting tool used to develop the year 2040 cumulative conditions presented in the SEIR was developed by the SFCTA over 25 years ago and has been enhanced with improved data and algorithms ever since. The input data into the model is based on regional population and employment information first prepared by ABAG. Using population and employment input provided by the local planning agencies, every couple of years ABAG runs a socioeconomic model that balances population and employment for the following 25 years period. The San Francisco Planning Department (long range planning) then takes this information and refines it within the San Francisco city and county limits both at the geographical (smaller sized zones) as well as allocation (more accurate positioning of land uses). This effort takes several months and the results are then passed over to the SFCTA, which keeps, updates and runs the countywide forecasting model (i.e., SF-CHAMP). As part of its assigned work, the SFCTA regularly updates the methods algorithms of the model every two to five years. This effort is usually conducted through a peer review process and, since the model is used as a congestion management planning tool, includes the legal requirement of review and approval of the inputs, methodology and results by MTC.

- **A near term 10-year analysis will better inform the public of the cumulative conditions with the project.** The San Francisco Planning Department analyzes project impacts with respect to existing and cumulative conditions for the future horizon year at the time of the study, year 2040 in this case. The commenter thinks that a 10-year interim cumulative scenario is required. Case law is clear that no such "interim" cumulative time frame is required by law. (See *City of Irvine v. County of Orange* (2015) 238 Cal.App.4th 526, 541-544.) A 10-year scenario could be more speculative than the analysis of 2040 conditions, as the approval of a project or plan does not imply that it

will be expeditiously built. Specifically, the Mission Bay South Area Plan approved in 1998 assumed that buildout would be accomplished less than 20 years later, in 2015. As it happens, Mission Bay South is now approximately 60 percent built and full buildout can be expected no sooner than 2040, when UCSF expects to open the second phase of the Medical Center on the two blocks between Fourth and Owens Streets (cited in UCSF LRDP EIR). Thus, a 17-year full buildout expectation (1998 to 2015) is turning into a 42-year plan (1998 to 2040) due to changing economic conditions. A similar situation is expected to happen with other nearby plans already approved or in the process of being approved such as Eastern Neighborhoods, Western SoMa, Pier 70 and Mission Rock. In fact much of the "rapid pace of development" observed in the area by the commenter is the result of long-term plans approved over 10 years ago such as the Mission Bay South Plan, Rincon Hill Plan, Eastern Neighborhoods Plan, etc. Thus, analysis of 2040 conditions is a more reliable scenario that appropriately captures cumulative conditions.

- **The SFCTA CHAMP model has validation error that is larger (by a factor of 2) than the threshold of Project cumulative impact.** It is unclear what the statement from the commenter means, since there are several thresholds used on the SEIR to establish potential impacts; for example, moving from LOS D to LOS E (with an average vehicle delay of more than 55 seconds per vehicle) for an intersection, increasing transit capacity utilization over 85 percent, adding more than 5 percent of traffic at a critical movement already operating at LOS E or F, etc. Furthermore, the concept of a single value for a model validation error put forward by the commenter goes against proper transportation modeling practice. When validating a travel demand forecasting model, the level of predictability for various model elements are assessed individually, each one having a different target value. For example, a higher level of accuracy will be asked from the predicted traffic values for arterials and major streets than for local collectors and alleys. Similarly, a higher level of accuracy will be necessary when evaluating a transit corridor (multiple transit lines and services) ridership than for alightings and deboardings of a single transit line, and better representation of future traffic and transit conditions would be expected than of expected bicycle or pedestrian flows. The SF-CHAMP model is regularly re-validated whenever major changes to the model inputs and algorithms are made, including the regular update of population and employment forecasts provided by ABAG. These changes and the subsequent model results are then reviewed and have to be approved by the Metropolitan Transportation Commission. The SFCTA is the designated Congestion Management Agency (CMA) for San Francisco County and as such is responsible for developing and adopting a Congestion Management Program (CMP) on a biennial basis. The CMP legislation[4] requires that CMAs develop a uniform database and model for evaluating transportation impacts of land-use decisions consistent with the regional mode land databases. SF-CHAMP has been regularly deemed consistent with the methodologies used by MTC Regional Travel Demand Models and databases, and therefore meets the legal requirements for the development of a CMP in San Francisco.

- **The City is actively planning massive changes to the transportation network that are not considered in the analysis of cumulative conditions.** The commenter does not specify which massive changes the sentence is referring to. In any event, all transportation network changes planned by the City have been incorporated into the

[4] Government Code Section 66531 authorized Bay Area counties to develop Countywide Transportation Plans and directed MTC to develop guidelines to assist CMAs and other appropriate agencies in the development of the Countywide Transportation Plans

existing plus project scenario (e.g., Central Corridor LRT, transit lanes on 16th Street, Mission Bay Infrastructure Plan) or 2040 cumulative analysis. In order for transportation infrastructure projects to be included as part of the cumulative analysis, they need to be part of the Plan Bay Area, which is developed by MTC in coordination with cities, counties, Caltrans, and transit service providers. In the case of San Francisco, these projects are also represented in Muni's Short-Range Transit Plan and SFCTA San Francisco Transportation Plan. As noted above, MTC reviewed the cumulative project assumptions, and concurred with the methodology for analysis of the existing plus project and cumulative conditions. If the commenter is referring to the concept of removing a portion of I-280 north of Mariposa or 16th Streets included in the San Francisco Planning Department's Railyard Alternatives and I-280 Boulevard Feasibility Study, this concept is only being studied and it is speculative at this time, thus, any assessment of transportation impacts would rely upon conjecture. This ongoing study is described in the SEIR on pp. 5.2-109 – 5.2-110; however, this concept is not a sufficiently defined project to undertake a credible analysis reflective of the unknown complexity of associated circulation changes.

- **Why didn't the City use a 50, 60 or 100 year period for the cumulative analysis?** OCII did not use "a 50, 60 or 100 year period for the cumulative analysis" because such time frames would have required OCII to engage in gross speculation -- the equivalent to attempting to predict in 1912 what conditions would be in 1962, 1972, or 2012. Notably, nothing in CEQA or the CEQA Guidelines identifies a particular time frame that lead agencies must use in attempting to assess cumulative impacts. Rather, the choice is left to the agencies' informed discretion. Normally, the choice of an appropriate cumulative time frame reflects the need to strike a balance between looking at too short a period, on the one hand, and looking at too long a period, on the other. A period that is too short can overlook impacts of foreseeable large, multi-year projects that will build out over a substantial period of time, resulting in the understatement of impacts. In contrast, a period that is too long can sometimes require a lead agency to engage in too much speculation, with the result that very long-term predictions may be relatively meaningless. Here, OCII reasonably chose to use a 25-year time frame, and its decision to do so is supported by abundant substantial evidence. As noted in the previous responses, the future horizon year for transportation planning purposes is established by ABAG, which develops population and employment estimates for the Bay Area at the city and county levels. The horizon year is typically reviewed upwards every two or three years so that there is a 25- year outlook at which time new cumulative projections are developed. MTC uses the same year and set of data to update their regional travel demand forecasting model. The San Francisco Planning Department and SFCTA also use these regional projections to allocate growth within the City and update the SF-CHAMP model. Thus, there is a concerted effort starting at the regional and ending at the local level to develop a common horizon year for cumulative transportation analysis.

- **The cumulative analysis improperly relies on "a comparison of two hypothetical future conditions."** The commenter contends that OCII somehow violated CEQA because OCII's projections of 2040 conditions represent a "hypothetical future condition." The commenter urges that the proper approach for evaluating cumulative impacts would have been to begin with existing conditions, and then to add to them the impacts associated with "the Project in combination with other foreseeable [projects]." In making these points, the commenter implies the existence of a distinction between possible approaches to assessing cumulative impacts that does not exist in practice. Under whatever approach is used, there

is simply no way to avoid predicting the future in assessing cumulative conditions either without or with a proposed project in place. In either event, a lead agency must attempt to predict "future conditions." (See *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439, 454 [cumulative impact analysis requires a prediction of "a project's effects on future conditions"].) Thus, although "existing conditions" are normally the proper baseline for assessing project-specific effects, "future conditions" are the appropriate baseline for assessing cumulative impacts. One way to try to predict such future conditions is to examine the combined environmental effects of past, present, and probable future projects. (CEQA Guidelines, § 15130, subd. (b)(1)(A).) Under that approach, "existing conditions" are generally reflected in the impacts of past and present projects. Another equally legitimate approach is to employ a "summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect." (*Id.*, subd. (b)(1)(B).) This latter method can be satisfied through the use of a computer model that includes as inputs the kind of information that can be derived from such planning documents. (*Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal.App.4th 899, 928-931.) This second approach may not specifically call out existing conditions, but the approach is nevertheless totally legitimate. Since either approach inherently involves some degree of uncertainty regardless of the quality of the evidence on which a lead agency relies, any prediction of "future conditions" is necessarily and inevitably somewhat "hypothetical." Any project opponent – or lead agency – that claims to know the future with certainty is making a claim that, in the nature of things, cannot possibly be accurate. Lead agencies can only make their best informed predictions based on the credible evidence that is available to them. That is what OCII has done here. (See SEIR pp. 5.2-208 – 5.2-232 [i.e., Impact C-TR-1 though Impact C-TR-10]; see also *City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 401, 412 [court rejects attack on the use of future growth projections in an EIR, even though "[t]he accuracy of these projections must, of course, await the passage of time"].)

Issues Raised by Late Commenters on Methodology, Adequacy of Transportation Analysis

This response addresses all or part of the following comments, which are quoted below:

A-MTC-1 A-MTC-5 O-MBA27S9-5

In particular, staff has considered the assumptions and approaches outlined in the SEIR relative to mode choice and the analysis of project-serving transportation projects as well as the relationship of transportation projects identified in the SEIR relative to transportation projects included in the Regional Transportation Plan/Sustainable Communities Strategy adopted in 2013, Plan Bay Area (PBA). We believe that the assumptions encompassed in the SEIR are sound and appropriately conservative and the transportation project analysis considers the relevant transportation projects for analysis. From a regional perspective, this location is well-served by transit and would likely experience a high percentage of non-auto mode trips in comparison to most Bay Area locations. Our detailed comments are outlined below. (*Metropolitan Transportation Commission, Ken Kirkey, letter, October 30. 2015 [A-MTC-1]*)

In summary, the SEIR reflects key regional projects serving the arena vicinity including the Central Subway and Muni Forward projects (as the project would be directly served by both). Improvements to other systems – like BART and Caltrain – that do not provide direct service but would be accessible from the proposed arena and provide service to the vicinity from the East Bay and the Peninsula are also described in the SEIR. Both BART and Caltrain have projects included in Plan Bay Area that will provide for expanded service and capacity of those systems. These projects and their connectivity to local-serving transit projects such as the Central Subway and MUNI Forward further support the mode choice assumptions outlined in the EIR. (*Metropolitan Transportation Commission, Ken Kirkey, letter, October 30. 2015 [A-MTC-5]*)

The SEIR's inadequate traffic analysis is explained in reports and letters submitted to the City and OCII throughout the administrative process for this project, as noted above, all of which are incorporated by reference. In particular, I respectfully direct the Commission's attention to the attached letters and reports from my co-counsel Thomas Lippe and experts Smith Engineering & Management, and Larry Wymer & Associates, Traffic Engineering. (*Mission Bay Alliance, Soluri Meserve, letter, November 10, 2015 [O-MBA27S9-5]*)

Response to Late Comment TR-9: Methodology, Adequacy of Transportation Analysis

OCII acknowledges MTC's concurrence with the assumptions and approaches outlined in SEIR.

It is acknowledged that the Mission Bay Alliance has submitted materials addressing transportation issues, all of which have previously been adequately addressed in the SEIR and RTC document. Many of the same comments are also addressed in this Exhibit D, Late Comment Response document.

Issues Raised by Late Commenters on Traffic Impacts

This response addresses all or part of the following comments, which are quoted below:

A-UCSF2-2

- Second, we ask that the City, working with Caltrans, provide a solution to the traffic congestion at the Mariposa I-280 northbound off-ramp during pre-event peak periods. UCSF requested a mitigation measure to reconfigure the off-ramp lanes to better segregate Event Center traffic from UCSF and other non-Event Center traffic. We believe that this is a feasible and effective measure. (*University of California San Francisco, Lori Yamauchi, letter, November 3, 2015 [A-UCSF2-2]*)

Response to Late Comment TR-10: Traffic Impacts

Since the OCII hearing on November 3, 2015, the City's Traffic Engineer has reviewed the intersection of Mariposa Street with the I-280 northbound off-ramp and suggests the

following modifications: The travel lane configuration at the bottom of the I-280 northbound off-ramp where it widens to three lanes are proposed to remain the same as it had previously been proposed and designed as part of the Mission Bay Plan (namely: a dedicated left turn lane, a dedicated northbound through lane and a shared northbound through and right turn lane). The proposal to best segregate event center traffic from UCSF and other non-event center traffic would be to change the striping midway up the off-ramp where there are only two travel lanes from a dedicated left turn lane plus a shared through and right turn lane, to a shared left turn and through lane plus a shared through and right turn lane. This would better avoid vehicles intending to continue northbound on the future Owens Street from having to queue behind vehicles making a right turn onto eastbound Mariposa Street, which could back up during peak pre-event periods.

On November 18, 2015 the Office of Economic Workforce Development and SFMTA discussed this reconfiguration with Caltrans District 4 Bureau Chief Patricia Maurice and Transportation Planner Sherie George. Caltrans District 4 staff is currently analyzing existing and projected turning movements at this intersection during event and non-event periods to determine the impacts to exiting vehicles during all hours of the day. The City is working with Caltrans to complete this review prior to the scheduled completion of Owens Street in the spring of 2016.

Issues Raised by Late Commenters on Transit Impacts, BART

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-27

Section 13.11.6 – Response TR-5

This response relates to comments by BART (Comments A-BART-1, -4, -5, -7, - 8, and -9) and ourselves (O-MBA10L4-19) supplying a station-level analysis of impacts on BART that was critically missing in the DSEIR. This station-level analysis provides completely new information, including Table 13.11-2, and conclusions that were previously missing. Consequently, the information should be available for review for the full 45 day review period in Recirculated Draft status under CEQA. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-27]*)

Response to Late Comment TR-11: Transit Impacts, BART

RTC Response TR-5 does not provide a station level analysis for BART, but instead provides information as to why a station-level analysis was not needed and was not conducted as part of the transportation analysis for the SEIR. The response also provides clarification regarding BART ridership information. The information in Table 13.11-2 is from data contained in Appendix TR, and not new information or analysis. The inclusion of the tables in the RTC

document does not change any analysis or conclusions presented in the SEIR. Recirculation of the SEIR is therefore not required pursuant to CEQA Guidelines Section 15088.5.

Issues Raised by Late Commenters on Loading Impacts

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-28

Section 13.11.6 – Response TR-8

This response replies to our comment O-MBA10L4-28 concerning truck loading. The response indicates that new (un-numbered and untitled) figures showing truck turning templates for each loading are presented with the response. It is not evident if and where the said figures are actually provided. Hence, the response is inadequate. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-28]*)

Response to Late CommentTR-12: Loading Impacts

The truck turning templates were prepared for the Major Phase Application that was submitted for project approval to OCII. Due to the large-scale format of the truck turning overlays, they were inadvertently omitted from inclusion in the RTC document. The figures support the analysis of loading impacts included in the SEIR and demonstrate that the on-site loading spaces were designed to accommodate trucks of varying size and would be accessible even if the larger spaces are occupied. These figures do not result in a different assessment than was provided in the SEIR Impact TR-8 on SEIR pp. 5.2-161 – 5.2-166. These figures are shown on the following pages.

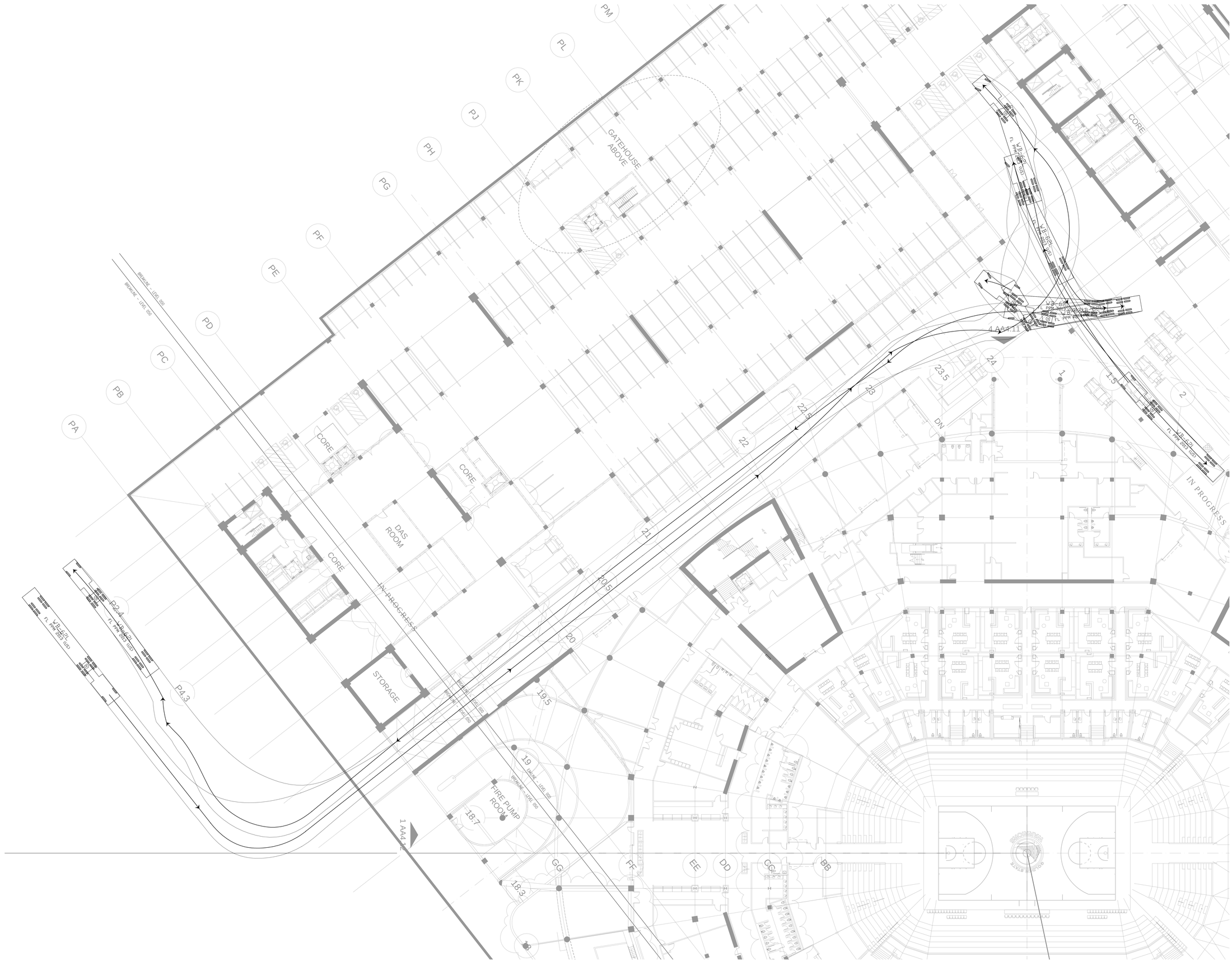
Issues Raised by Late Commenters on Emergency Vehicle Access Impacts

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-29 O-MBA27S9-7

Section 13.11.6 – Response TR-9

This reply responds to our comment and those of others regarding access impacts to emergency vehicles attempting to reach UCSF hospitals located in the immediate vicinity of the Project. The response consists of a repetition and elaboration of the description of the ineffectual measures that prompted the comment rather than proposing clear mitigation to resolve the issues. We note that the critical traffic LOS deficiency at the intersection of Seventh, Sixteenth and Mississippi, which is on advertised emergency routes to the UCSF hospitals is unmitigated and that the SEIR analysis at this



1 TRUCK TURNING DIAGRAM - ENLARGED PLAN
Scale: 1/16" = 1'-0"

PROJECT NORTH
TRUE NORTH
3.182
3.182
1E NORTH
1

GOLDEN STATE WARRIORS

MISSION BAY ARENA AND ENTERTAINMENT COMPLEX

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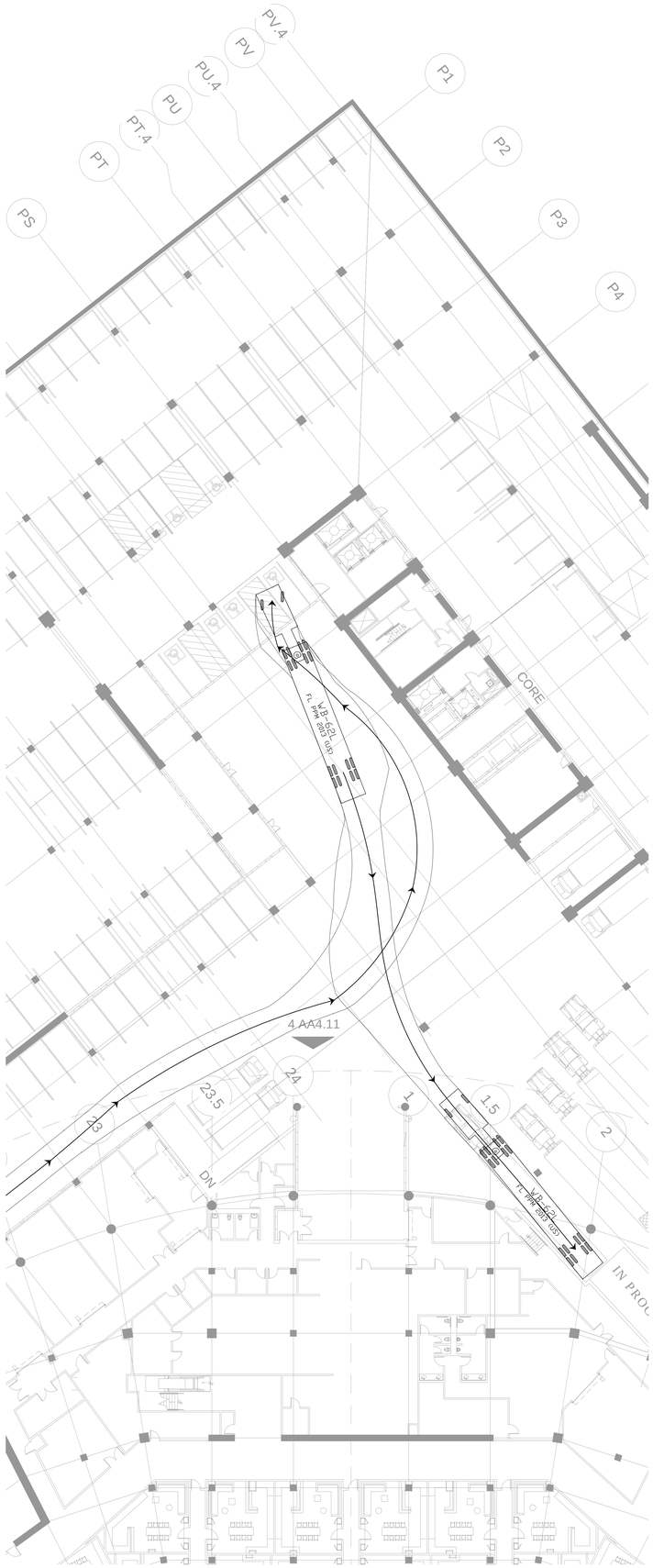
NO.	DATE	ISSUE
2	6 JULY 15	LDA 100% DD - CORE AND SHELL
1	8 MAY 15	100% RECONCILED SD

DRAWING TITLE

TRUCK TURNING PLANS

KHA PROJECT NO. 13032

DRAWING NUMBER A1.75



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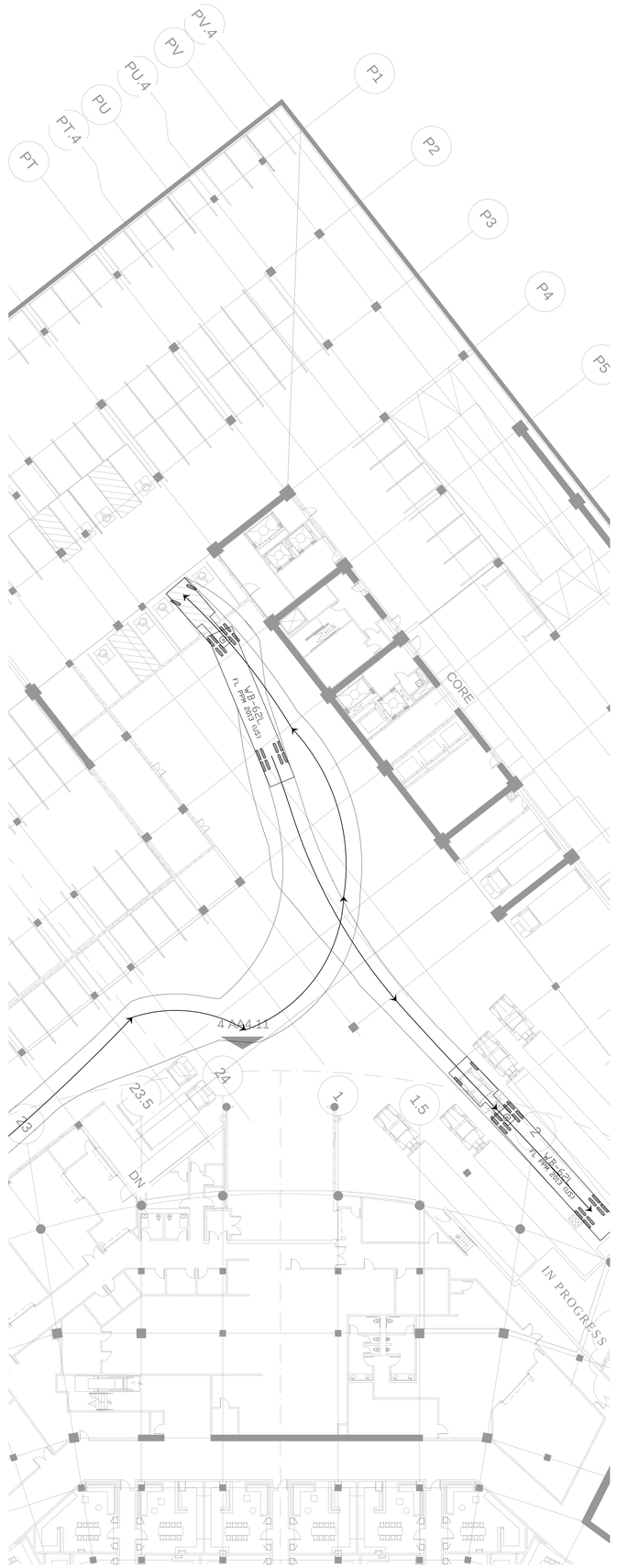
2 SEMI TRUCK - 2
Scale: 1/16" = 1'-0"



3 SEMI TRUCK - 3
Scale: 1/16" = 1'-0"

PROJECT NORTH
TRUE NORTH
MAGNETIC NORTH
3.182°
3.182°
1

GOLDEN STATE WARRIORS

MISSION BAY ARENA AND ENTERTAINMENT COMPLEX

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DRAWING TITLE

TRUCK TURNING PLANS

KHA PROJECT NO. 13032

DRAWING NUMBER A1.76

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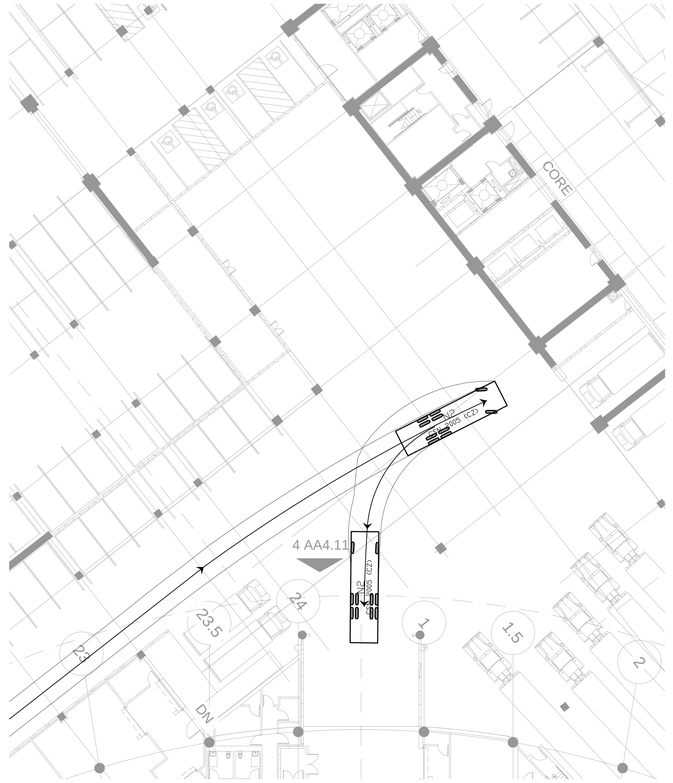
Scale: 1/16" = 1'-0"

2 SEMI TRUCK - 5
Scale: 1/16" = 1'-0"



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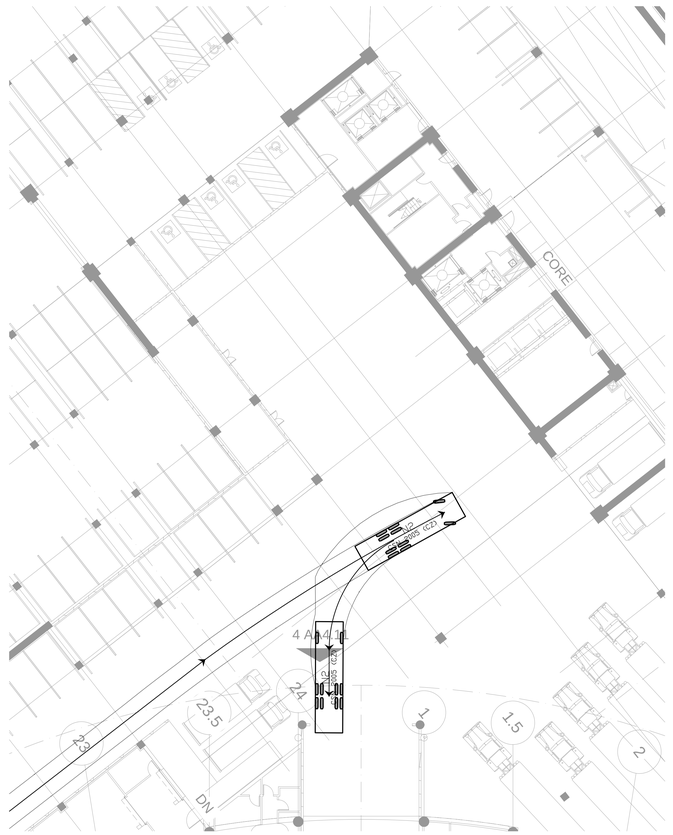

3 ARENA TRASH - 1
Scale: 1/16" = 1'-0"

GOLDEN STATE WARRIORS

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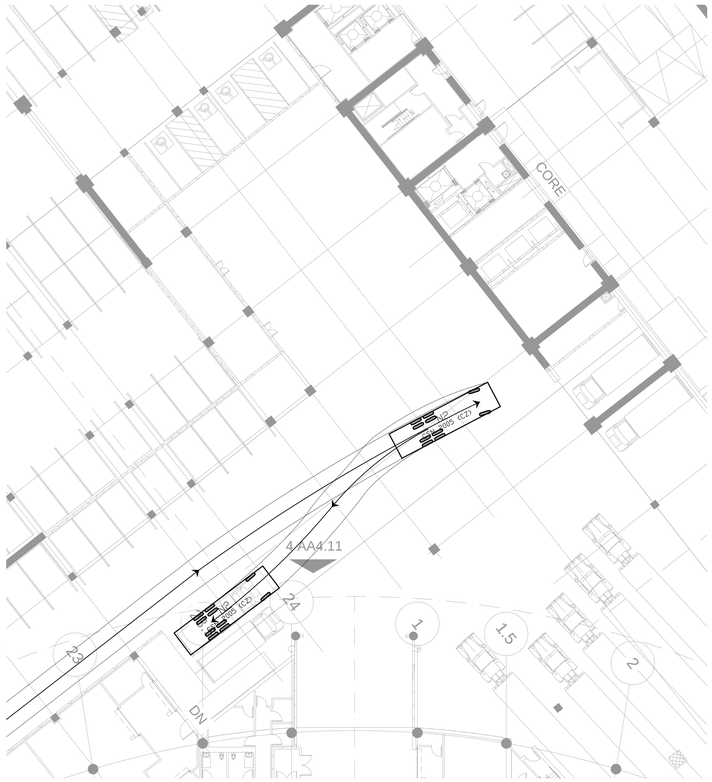
DRAWING TITLE

TRUCK TURNING PLANS

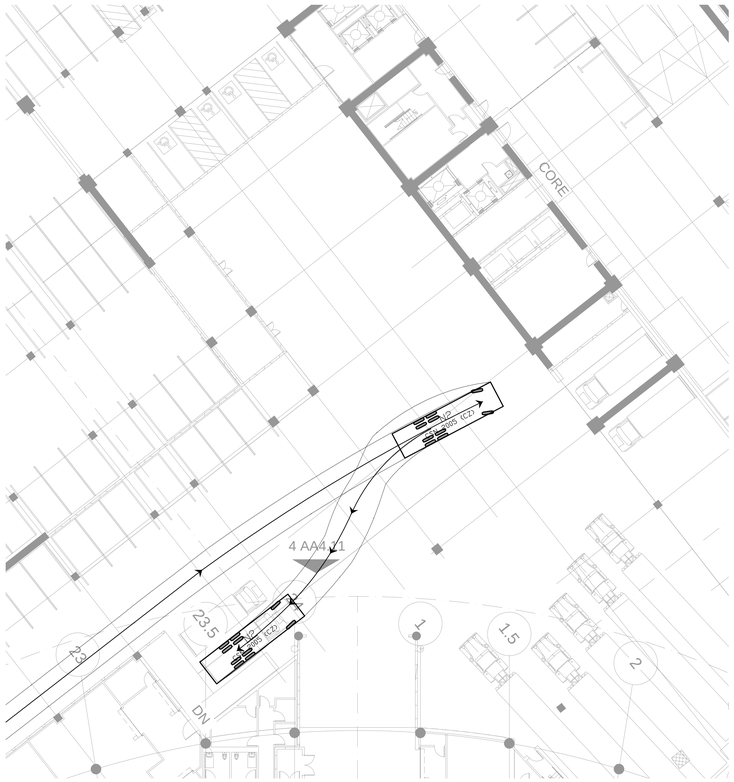
PROJECT NORTH / TRUE NORTH / IE NORTH
3.182°
50.182°

KHA PROJECT NO. 13032

DRAWING NUMBER A1.77



1 KITCHEN TRUCK - 1
Scale: 1/16" = 1'-0"



2 KITCHEN TRUCK - 2
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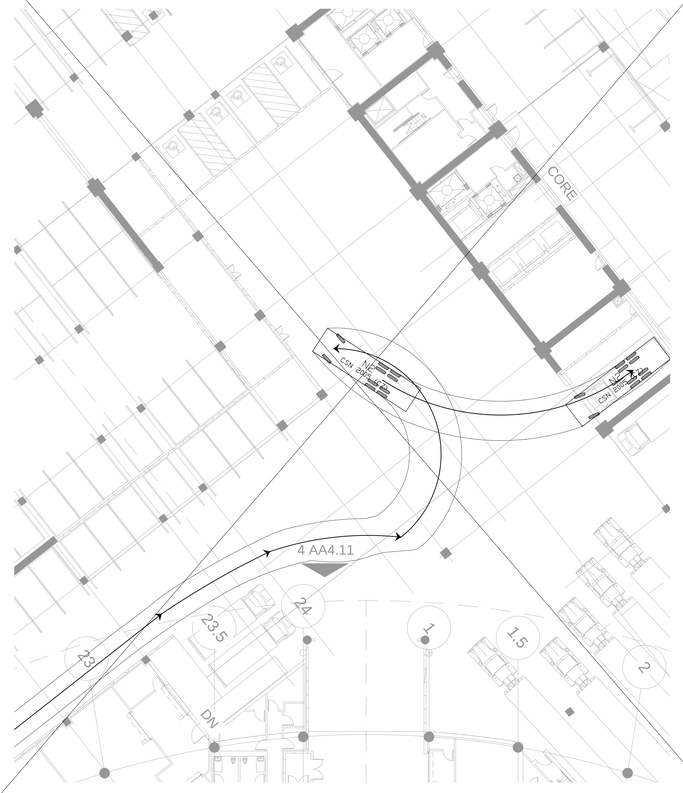
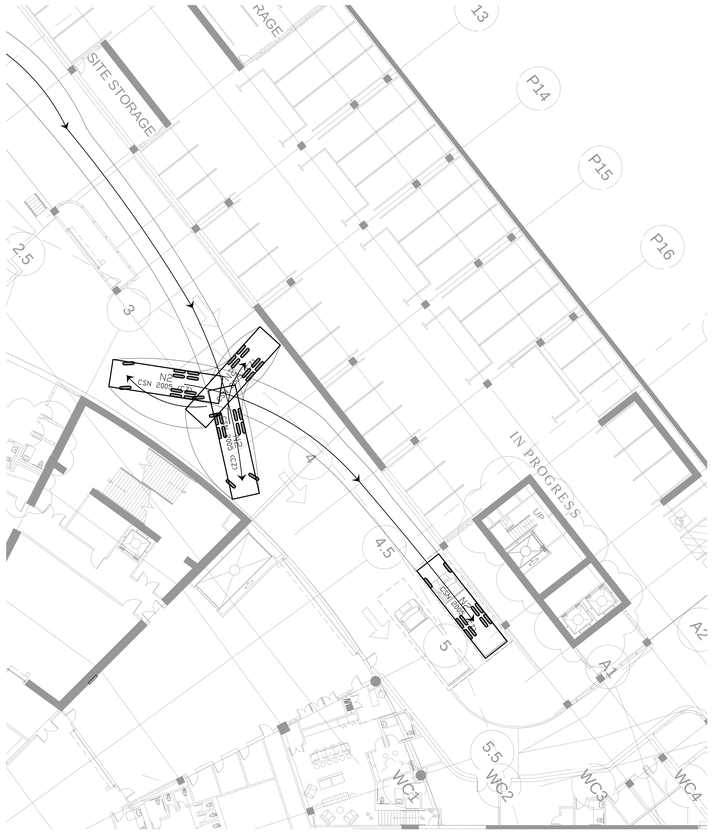
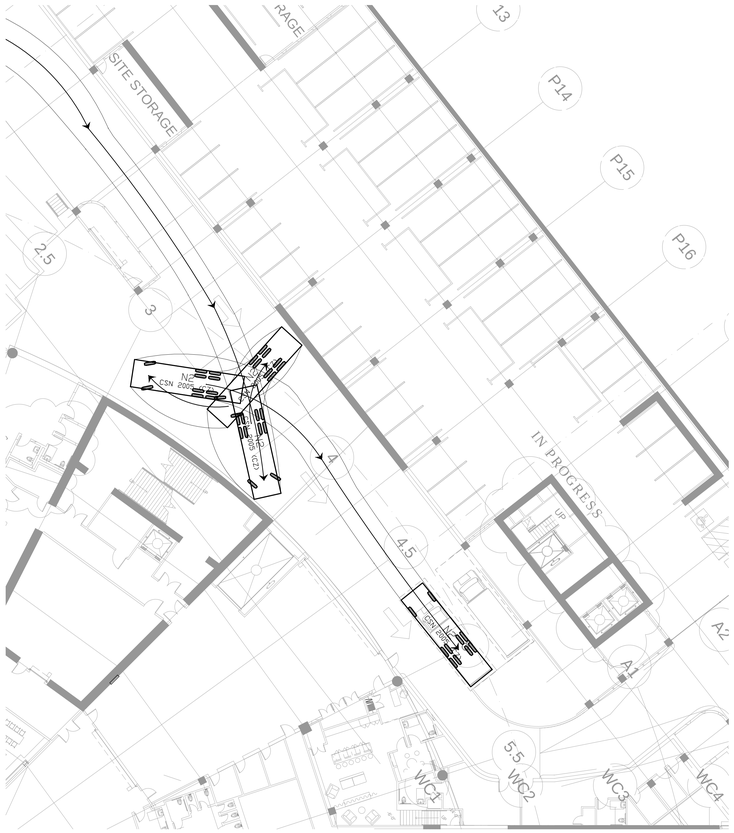


3 RETAIL TRUCK - 1
Scale: 1/16" = 1'-0"



4 SOUTH STREET RETAIL TRUCK - 1
Scale: 1/16" = 1'-0"



5 SOUTH STREET RETAIL TRUCK - 2
Scale: 1/16" = 1'-0"

6 ARENA TRASH TRUCK - 3
Scale: 1/16" = 1'-0"

GOLDEN STATE WARRIORS

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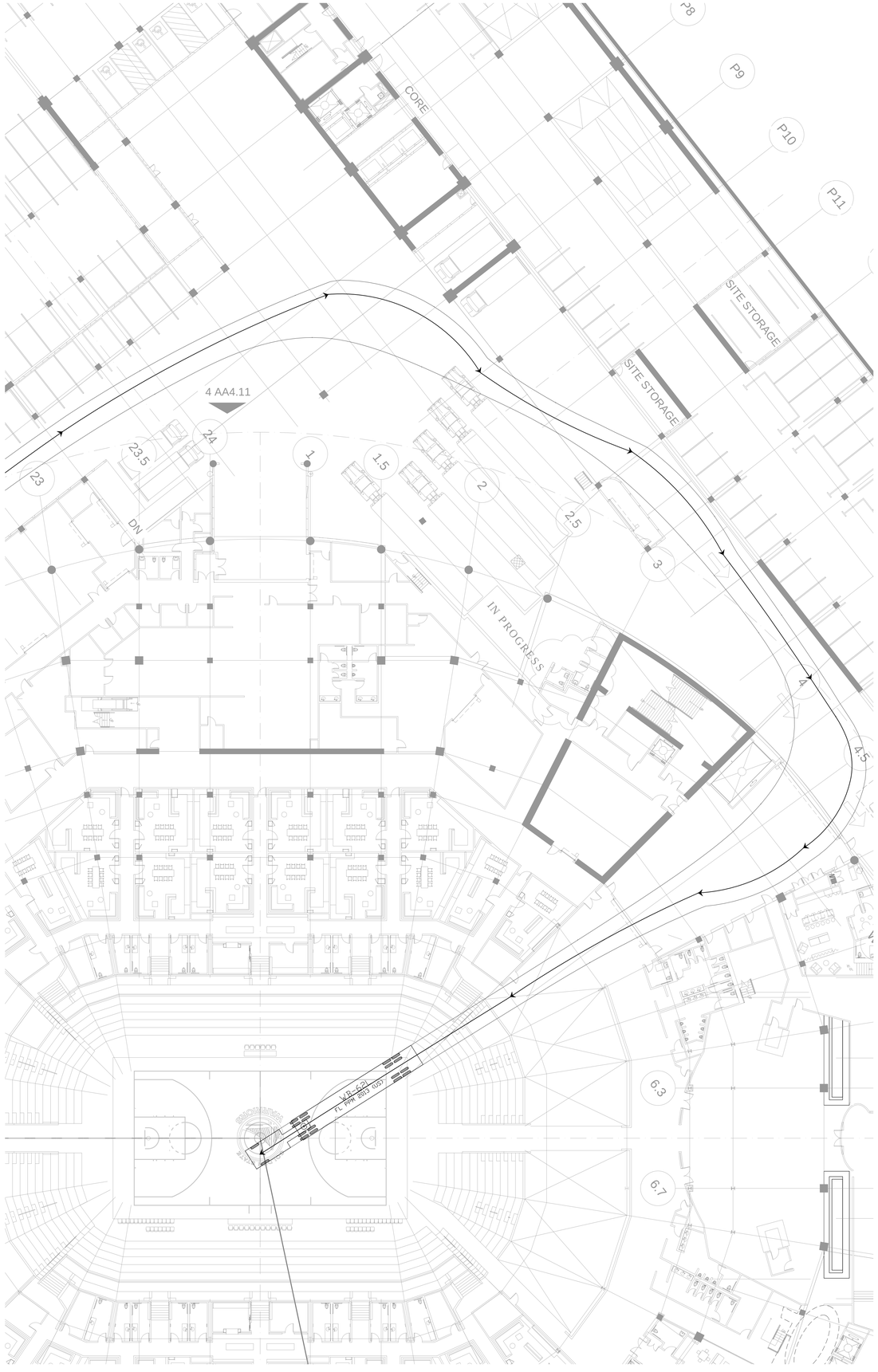
DRAWING TITLE

TRUCK TURNING ENLARGED PLANS

PROJECT NORTH
TRUE NORTH
IE NORTH
3.182
39.182
1

KHA PROJECT NO. 13032

DRAWING NUMBER A1.78



1 SEMI TRUCK - EVENT FLOOR ACCESS
Scale: 1/16" = 1'-0"

2 16TH STREET DELIVERY TRUCK - 2
Scale: 1/16" = 1'-0"

3 16TH STREET DELIVERY TRUCK - 1
Scale: 1/16" = 1'-0"

PROJECT NORTH
TRUE NORTH
IE NORTH
3.182°
30.182°
1

GOLDEN STATE WARRIORS

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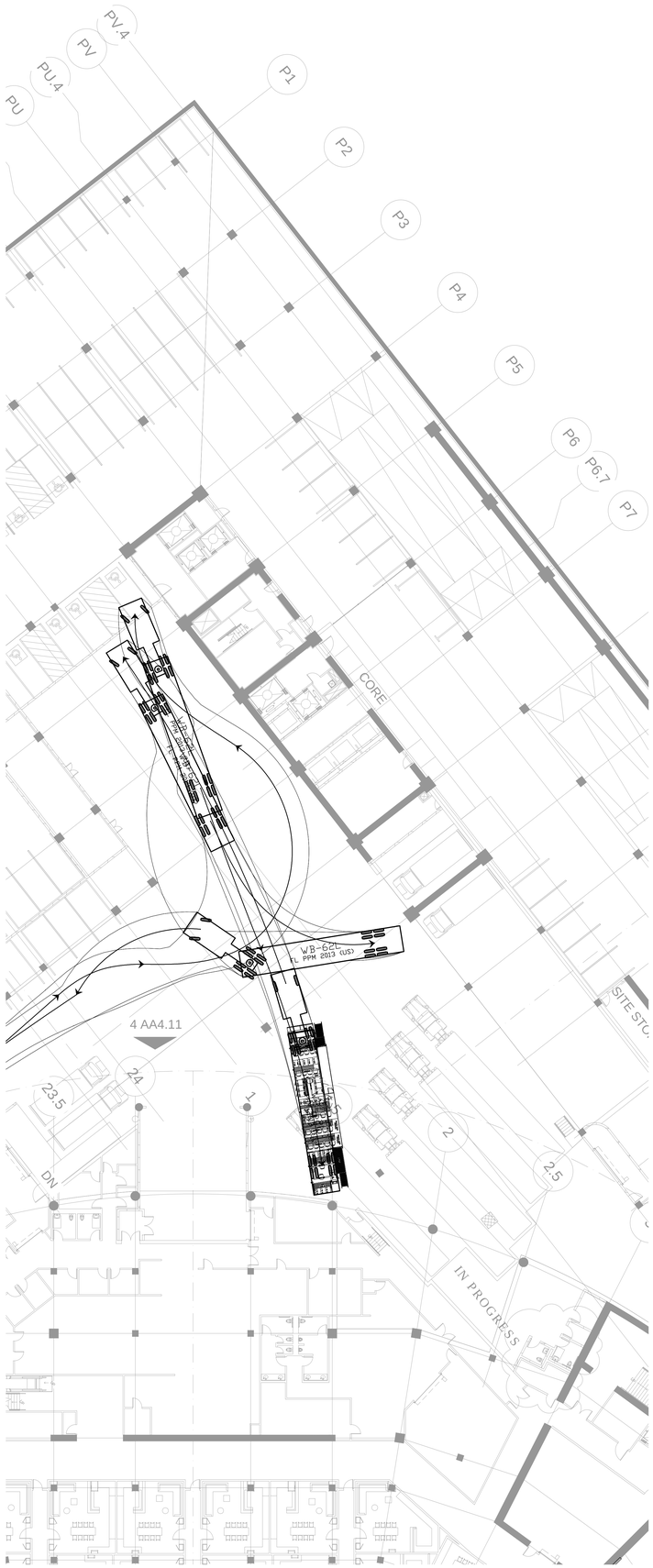
DRAWING TITLE

TRUCK TURNING PLANS

KHA PROJECT NO. 13032

DRAWING NUMBER A1.79



1 BROADCAST TRUCK - 1
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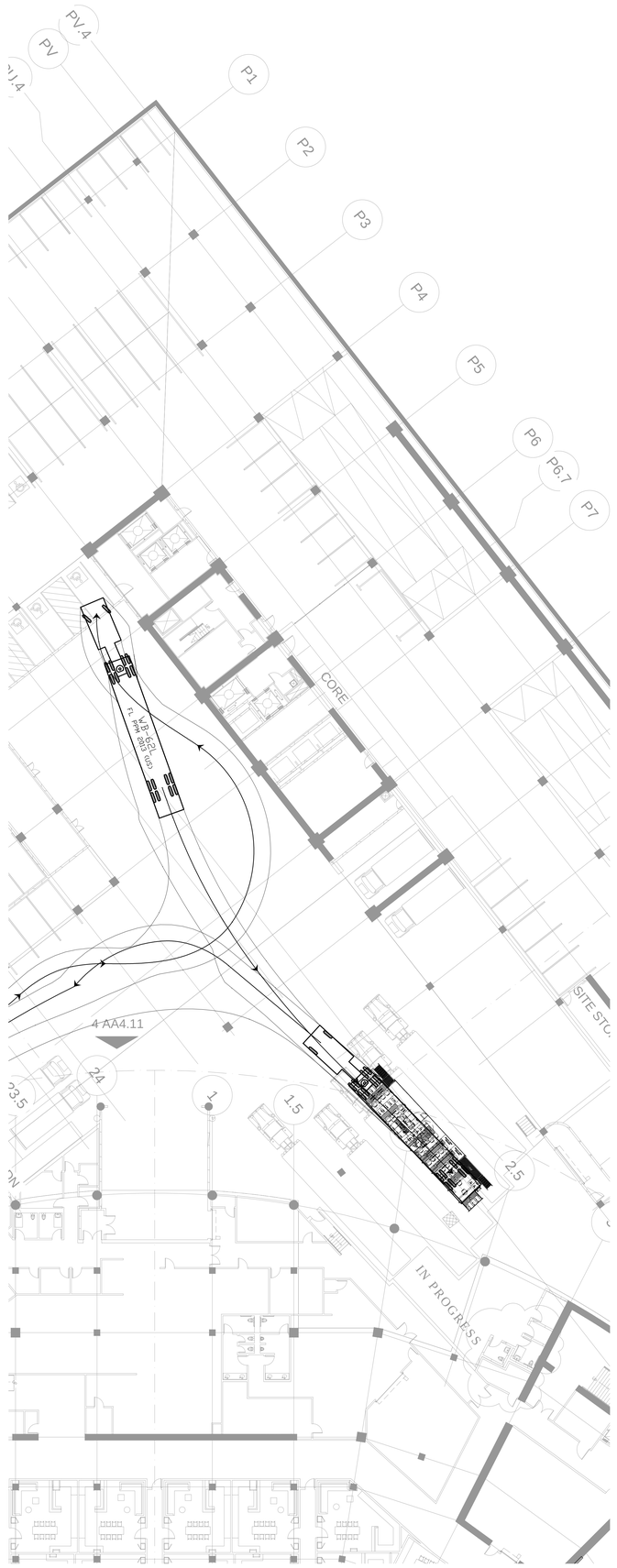
2 BROADCAST TRUCK - 2
Scale: 1/16" = 1'-0"



3 BROADCAST TRUCK - 3
Scale: 1/16" = 1'-0"

GOLDEN STATE WARRIORS

MISSION BAY ARENA AND ENTERTAINMENT COMPLEX

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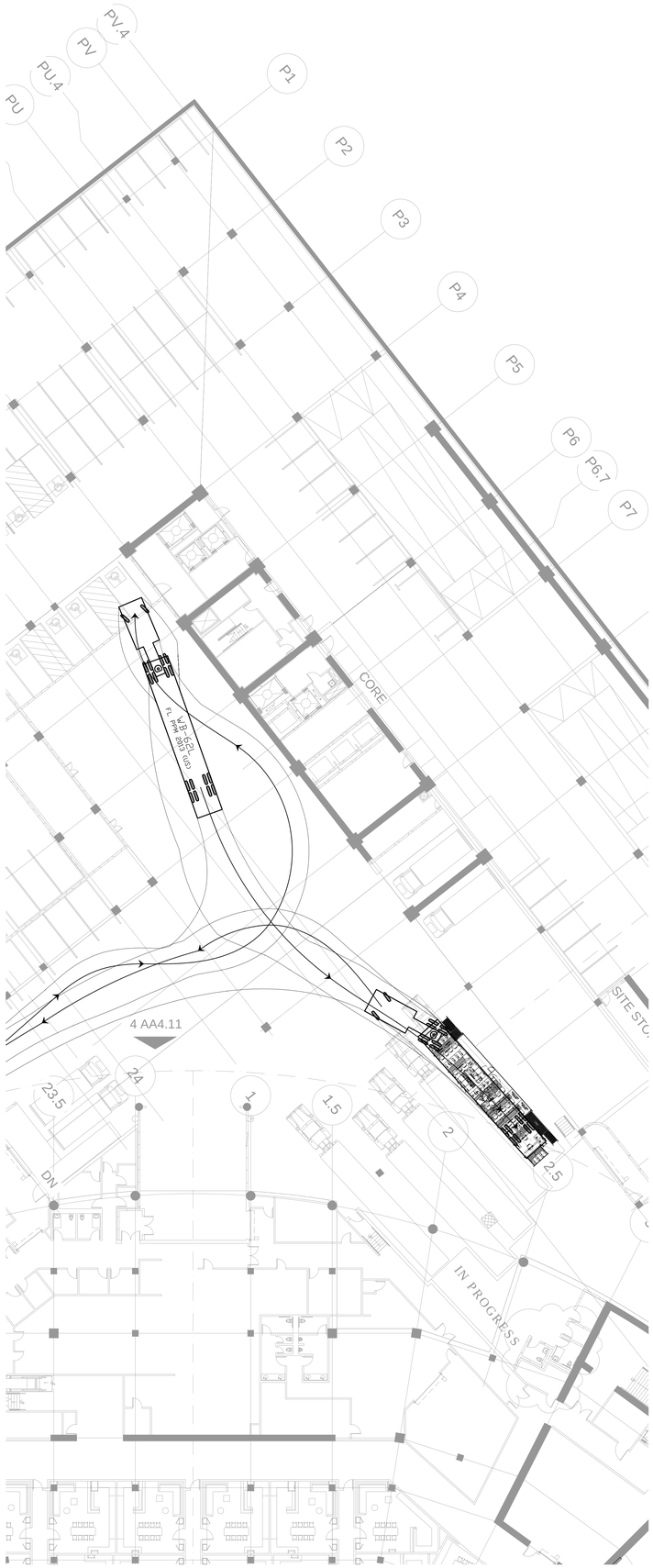
DRAWING TITLE

TRUCK TURNING PLANS

KHA PROJECT NO. 13032

DRAWING NUMBER A1.80



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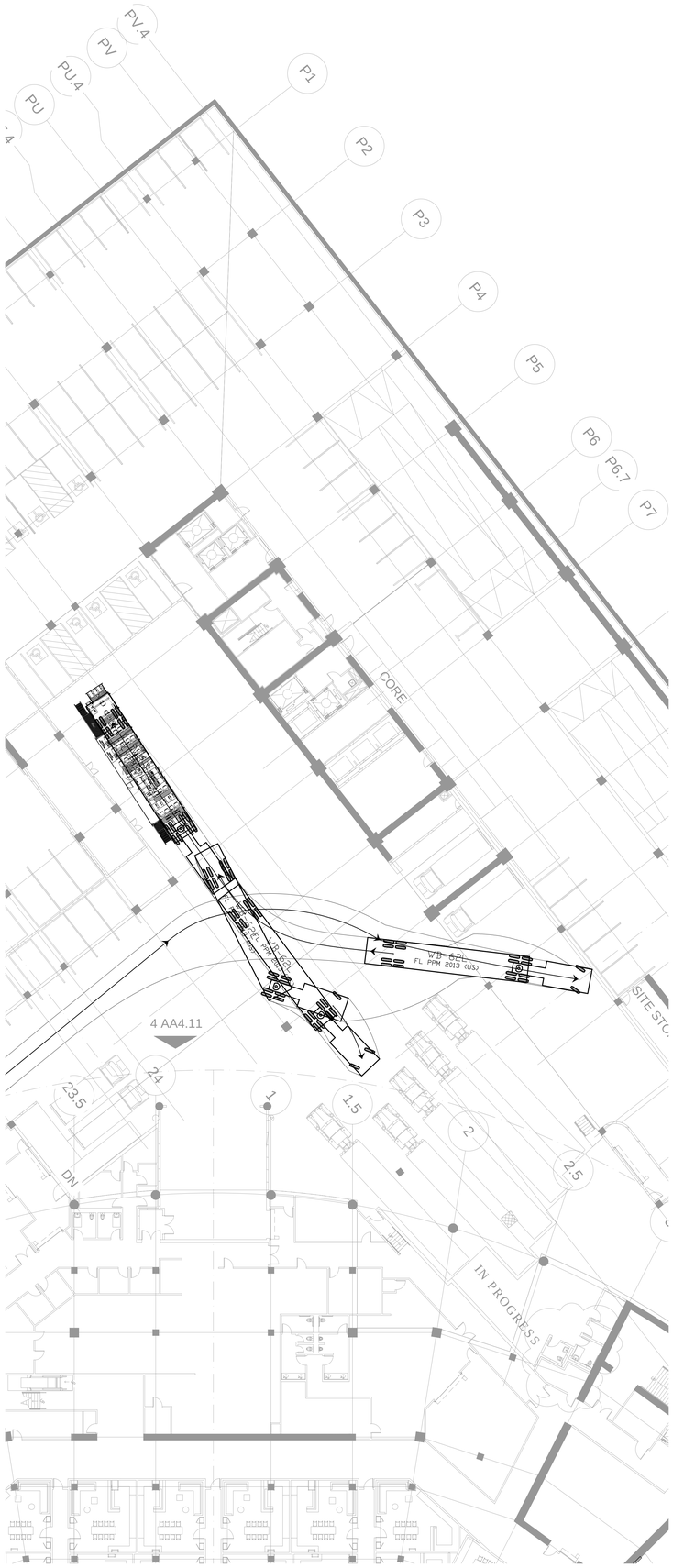

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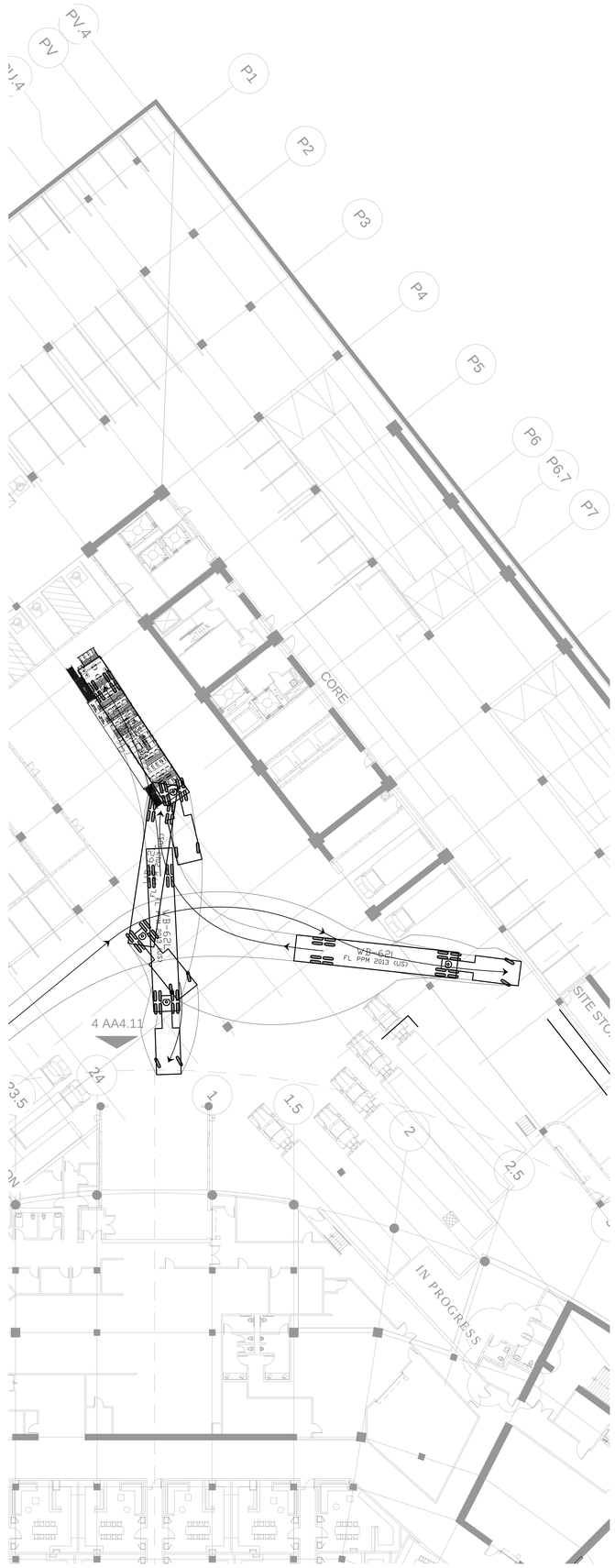

3 BROADCAST TRUCK - 6
Scale: 1/16" = 1'-0"

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DRAWING TITLE

TRUCK TURNING PLANS

PROJECT NORTH / TRUE NORTH / GRID NORTH
3.182°
59.182°

KHA PROJECT NO. 13032

DRAWING NUMBER A1.81

location has failed to consider the effects of train crossings of Sixteenth Street, which could cause traffic on Sixteenth to queue into the intersections of Sixteenth with Owens and Sixteenth with Fourth, which are intersections crucial to hospital access, both emergency and normal. The response is inadequate. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-29]*)

Emergency Response and Hospital Access

Our comments of November 2, 2015 concluded with the very brief remarks on SEIR Response TR – 9 which concerned comments on emergency response and UCSF hospital access. These additional comments offer more detailed observations on that response.

Inadequacy of Analysis of Congestion and Delay at Critical Intersection of Sixteenth – Seventh and Mississippi Streets

Response TR-9 states that under existing-plus-Project conditions, the majority of the study intersection in the vicinity of the Project site and the UCSF Medical Center Phase One site are projected to operate at LOS E or better. The exception is the intersection of Seventh, Mississippi and Sixteenth Streets which would change from LOS E to dysfunctional LOS F. The problem with the response is twofold. First, this overburdened intersection is on the primary emergency access routes to the UCSF hospitals from the East Bay, Downtown San Francisco, SOMA and most of the central and northern parts of the City. Hence, the so called "exception" is actually a critical failure. Second, the SEIR's analysis of the intersection understates the level of congestion there because it fails to account for the portion of time when train movements at the adjacent at-grade crossing block movements on Sixteenth. In the 5 –to – 6 pm commute peak hour, according to current Caltrain schedules, between 10 and 12 trains preempt this crossing, and 9 to 10 in the 6 – to – 7 pm hour. This means that the Sixteenth Street leg of the intersection will be blocked for about 9 minutes or more in the 5 –to-6 pm peak and about 7.5 minutes or more in the 6 – to – 7 pm hour. In other words, movements to and from Sixteenth east of the subject intersections will be blocked between 12.5 and 15 percent of the time in these hours – and the effect of this blockage wasn't accounted for in the SEIR analysis.

Lack of Any Traffic Analysis of Intersections of Eighth – Harrison and Eighth – Bryant and Related I-80 Ramps That Are on Critical Access Routes to UCSF Hospitals

Another problem with the SEIR response regarding the Project's effects on emergency response and emergency access is that the SEIR failed to analyze the complex of the intersections of Eighth with Harrison and Eighth with Bryant and their related I-80 ramps at all. These heavily congested intersections are on the primary emergency access routes to the UCSF Mission Bay hospitals from the East Bay and from Downtown, most of the SOMA and northern San Francisco. The access route via these intersections on Eighth are particularly crucial whenever there is an overlapping Giants event that tends to preempt access via the Third/Fourth Street corridor.

SEIR's Underestimate of Numbers of Arena Event Attendees Traveling in 5-to-6 PM Evening Commute Peak Conceals the Extent of Impact on Emergency Services and Access to UCSF Hospitals

The SEIR, based on data on time of turnstile entry to the "paid" area of the Warriors current venue, Oracle Arena and at the Barclay Center in Brooklyn (home count of the Nets), that only about 5 percent of weekday arena event attendees traveling to an event starting at 7:30 pm would be traveling on the transportation system between 5 and 6 pm (the pm commute peak hour). Our comments of July 26, 2015 and November 2, 2015 presented cogent reasons why those turnstile based assumptions grossly understate the number of attendees to a 7:30 pm start basketball game would be traveling on the transportation system in the 5-to-6 pm peak commute hour. Those reasons include:

- The offset between getting off the transit system or out of a car in a parking spot and the time of actual passage through the ticket turnstiles, even for people who go straight in after arrival,

- The offset between arena turnstile passage time and the actual duration of travel time on the transportation system that would put people on the system during the peak hour.
- The offset between turnstile passage time and actual arrival time in the arena area for those who go into nearby restaurants and bars to eat a meal or have a drink before entering the arena or those who just hang around outside to meet up with friends traveling independently, especially perhaps to exchange a ticket.

The SEIR has ignored these considerations and persisted in assuming that only a tiny fraction of arena attendees would be traveling in the 5-to-6 pm evening commute peak hour.

In our prior comments, we have pointed out that national TV broadcasts of weeknight Warrior games which typically start at 6 pm, (and possibly national broadcasts of other arena events) would also cause a very high portion of event attendees to be traveling in the 5-to-6 pm commute peak hour and requested that this be analyzed as a separate case in the SEIR. The SEIR persists in refusing to consider this scenario.

Both of these considerations – the attendees who travel to the Project area long before passing through the arena turnstiles and the attendees coming to a national TV game start – would intensify emergency service and hospital access problems in the 5-to-6 pm commute peak hour well beyond anything analyzed in the SEIR and most importantly, compound the critical emergency service and UCSF hospital access problem issues related to the Sixteenth – Seventh – Mississippi – Caltrain rail crossing complex as well as the Eighth – Harrison / Eighth – Bryant / I-80 ramps complex as described above.

<u>The SEIR Refuses To Quantify Impacts on Emergency Vehicle Travel</u>

Another commenter requested that the SEIR estimate emergency vehicle travel times with and without an event for the proposed Project. SEIR Response TR-9 refuses to do so. It claims that because the infrastructure supporting UCSF hospital facilities is currently incomplete, such a projection is it [sic] feasible. We note, however, that the SEIR has not hesitated to estimate LOS and delay times on the incomplete is roadway network for ordinary predictions of Project traffic impacts (for instance, at Owens and Sixteenth without Owens yet connected through to Mariposa). This inconsistency is an unacceptable evasion. If the SEIR is unable to estimate emergency response time, then the entire analysis of effects on all emergency services is without foundation, uselessly conclusory and inadequate.

<u>Public Relations Response To Emergency Access Impacts Irrelevant</u>

SEIR Response TR-9 continues, stating that strategies to provide attendees with suggested driving routes to and from the 950 parking spaces within the Project site would alleviate interference of that traffic with emergency vehicle traffic. However, most of the on-site spaces would be held by VIP season ticket holders. These drivers will determine quickly various routes that work to their own advantage to minimize their own travel time, rather than following suggested routes to fine-tune recommended event access/egress routes that avoid primary emergency vehicle routes. The notion that pre-event and post-event recommended driving routes all could be revised based on monitoring is nonsense because knowledgeable regular attendees will follow their own notion of what works best for them, not public relations advisories.

<u>Effects of Event Coordinator and PCO Management Doubtful</u>

The next section of SEIR Response TR-9 indicates that at the times when northbound lanes of third closed in between Sixteenth and South Streets (mostly during post-event times), PCO's would be available to open the emergency barricades to allow northbound emergency vehicle traffic through. While the PCOs may get the emergency barricades out of the way, whether they can safely clear swarming pedestrians from the “closed” street section is an open question.

The response indicates that the Event Transportation Coordinator would inform emergency service dispatchers of the dates and times when there would be temporary closure of Third Street following an event so that emergency vehicles could be advised to take routes other than Third Street.

However this is not very useful if the location of the emergency dictates that emergency services really need to travel on Third Street.

This response also observes that drivers must comply with California vehicle code article 21806 requiring the drivers to clear a way to for authorized emergency vehicles, drive to the right road curb, stop, and remain stopped until the emergency vehicle has passed. This is a nonsensical evasion of the key issue which is that when traffic is queued in gridlock, it becomes very difficult and potentially dangerous for drivers to clear the way for emergency vehicles.

For smaller events where there are fewer PCOs, the response claims that PCOs would be stationed at key locations monitoring traffic conditions and could be reassigned to respond to conflicts between event center traffic and UCSF hospital access. It is questionable that PCOs could relocate quickly enough to be of effective assistance in an emergency access matter at another location.

Effective Facilitation of Privately Driven Vehicles in Emergencies Doubtful

The next section of the ResponseTR-9 claims that persons accessing UCSF medical Center emergency room and Urgent Care Center using private vehicles rather than authorized emergency vehicles would be able to use the transit-only lanes provided for the 22 Fillmore transit priority on 16th Street. This begs the questions of how anxious non-professional drivers, probably making their first emergency trip of this nature, would know the bus lanes are there, that they're eligible to use them, or how they will safely get around the lumbering, overloaded buses using the lanes and how they would be distinguished from casual bus lane violators.

Failure to Address Access to Hospitals for Doctors, Other Caregivers and Support Staff

UCSF's comments on the DSEIR included the observation that adverse traffic impacts on the hospitals is not limited to emergency vehicles. Doctors, other care-givers and support staff must have reasonably unobstructed access to and from the facilities at all times. Nowhere does the SEIR address this issue.

Conclusion

Because of all of the foregoing, the SEIR's conclusions regarding the Project's impacts on emergency access are unsupported and unsupportable. A more realistic appraisal of the Project's impacts on emergency service and hospital access is required as is a more realistic set of mitigation measures. (*Mission Bay Alliance, Soluri Meserve, letter, November 10, 2015 [O-MBA27S9-7]*)

Response to Late Comment TR-13: Emergency Vehicle Access Impacts

As described in the SEIR and RTC document, 16th Street will have a transit–only lane, as well as one mixed-flow travel lane in each direction, which would provide adequate room for vehicles to pull over to the side of the road and for emergency vehicles to pass. Because emergency vehicles are not subject to intersection delays (i.e., emergency vehicles turn on the siren, cars pull over to the side, and emergency vehicles drive past stopped vehicles and through intersections without having to stop at a red signal), the poor operating conditions at the intersection of Seventh/Mississippi/16th without and with the project would not substantially affect emergency vehicle access to the UCSF facilities. Increases in the number of times the Caltrain gate across 16th Street is down due to the Caltrain electrification project, thus restricting emergency vehicle access across the tracks, would be an impact of the Caltrain project and not the proposed project, and, as noted above, once the gate is raised, emergency vehicles would be able to bypass stopped vehicles, and would not be subject to delays experienced by other vehicles. Because emergency vehicles are not subject

to intersection delays, the SEIR did not include an intersection LOS analysis at the intersections of Eighth/Harrison/I-80 westbound off-ramp and Eighth/Bryant/I-80 eastbound on-ramp. A large volume of vehicles currently passes through these intersections during the peak commute periods, and emergency vehicle access without and with the project would be similar to what occurs under existing conditions.

See Response to Late Comment TR-4 above regarding time of travel of event attendees. The travel demand estimates for the event center were based on data from other comparable venues, and the SEIR assumed that twice as much travel would occur during the 5:00 to 6:00 p.m. peak hour compared to the average of arrivals for the existing Barclays Center in Brooklyn, New York, which is located in a similar urban setting. Thus, the SEIR does not underestimate the number of attendees traveling during the peak hour. The number of basketball games starting at 6:00 p.m. would be limited, and a separate intersection analysis scenario for an earlier start time than the 7:30 p.m. start time assumed for the Basketball Game scenario is not required to assess emergency vehicle access impacts.

Emergency vehicles are not subject to the intersection delays estimated as part of the intersection LOS analysis, and therefore, it is not possible to determine emergency vehicle travel times for conditions that would exist without and with operation of the event center using the output from the intersection LOS analysis results. The commenter does not provide a methodology, other than referring to the intersection LOS analysis, on estimating emergency vehicle travel times, and standard environmental review for development projects, including event venues, does not include quantification of emergency vehicle travel times. Furthermore, as stated in the SEIR and the RTC document, emergency vehicles use sirens to direct drivers to move out of the path of the emergency response vehicle.

Pre-event and post-event vehicular traffic destined to park at the on-site garage containing 950 parking spaces would be managed to minimize impacts on UCSF facilities. The TMP for the event center includes strategies to provide attendees with suggested driving routes to and from the garage. Examples of strategies include website, emails, and smart phone applications. For example, during pre-game conditions, attendees driving from the south of the project site exiting at the I-280 northbound off-ramp would be directed to use Mariposa Street, rather than Owens Street and 16th Street, to reduce congestion during UCSF's shift changes. For post-event conditions, attendees heading to the south would be encouraged to use Mariposa, Illinois or Third Streets, and not 16th or Owens Streets, to access the I-280 southbound on-ramp. As specified in the TMP, the pre-event and post-event recommended routes would be subject to revision based on monitoring.

While the commenter believes that regular attendees would not follow suggested/ recommended driving routes to and from the event center garage, it is likely that some attendees would, including non-regular attendees at non-Golden State Warriors events. Regardless of the commenter's opinion of driver behavior in San Francisco, public information campaigns are among a menu of transportation tools commonly used in managing travel and limiting and managing vehicular traffic congestion for large events.

The SEIR and RTC document indicate the availability of alternative routes for events that necessitate closure of the northbound travel lanes of Third Street between 16th and South Streets (generally events with 14,000 or more attendees) for post-game conditions for a period of one to two hours, depending on the size of the event. When the road closure is in effect, emergency vehicles would be able to use Fourth Street or Terry A. Francois Boulevard to travel northbound. In addition, emergency vehicles would also be able to travel on Muni's light rail right-of-way in the median or northbound within the southbound lanes on Third Street. If necessary to access the closed section to directly access adjacent uses, emergency vehicles traveling northbound on Third Street would be permitted to continue through the closed segment, as PCOs would be able to remove the temporary barriers. This is a standard procedure required for roadway closures for events and construction activities. For smaller events, PCOs would monitor traffic conditions, and would be reassigned to respond to conflicts between event center traffic and UCSF hospital access, such as the emergency room and urgent care center facility access at the intersection of Fourth/Mariposa. PCOs would make sure that vehicle queues on Mariposa Street do not block access to the Fourth Street entrance. PCOs would not be reassigned to, or responsible for, providing assistance for a specific emergency trip to UCSF by emergency or non-emergency vehicles.

Drivers arriving at the UCSF hospital with urgent but not emergency conditions would be able to take advantage of the Local/Hospital Access Plan as well as the network of PCOs being implemented as part of the proposed project. Drivers would be able to explain their situation to the first PCO that they encounter in their path, who would then be able to radio to other PCOs ahead and facilitate the movement of the vehicle. In more extreme cases of emergency, PCOs could direct private vehicles to use transit-only lanes under PCOs control, such as those on 16th Street.

Under existing plus project conditions, the majority of the study intersections in the vicinity of the project site and the UCSF Medical Center Phase 1 are projected to operate at LOS D or better, and gridlock conditions are not projected to occur before or following an event. As noted in the SEIR and in the RTC document, emergency vehicles would be able to use any travel lane, including the transit only lane on 16th Street to access the UCSF facilities. Therefore, for these reasons, the proposed project would not result in a substantial increase in vehicle delay for emergency vehicles or other persons accessing the emergency room and urgent care center in their personal vehicles. Doctors, other caregivers and support staff would have reasonably unobstructed access to the UCSF facilities, and increases in travel times may be an inconvenience for those that drive to or from the project vicinity, including UCSF facilities, and may result in somewhat longer travel times, but would not result in a significant impact on the environment, or impair emergency vehicle access. As described in the RTC document, the City, project sponsor, and UCSF have developed a Local/Hospital Access Plan, which has been incorporated into the project TMP to ensure that inbound access to the Mission Bay Area by residents, employees and UCSF staff during the weekday 6:00 to 7:00 p.m. evening period, when the maximum inbound project demand is expected to occur and which coincides with the UCSF staff shift, is not substantially delayed as a result of event-related traffic.

In addition to the Local/Hospital Access Plan, additional strategies have been identified by the City, UCSF, and the project sponsor that could be implemented during non-Golden State Warriors overlapping events to minimize the impacts during the pre-event period. On November 3, 2015, the SFMTA unanimously approved a resolution (Resolution 15-154) agreeing to the Designated Overlapping Events Transportation Strategies and the Event Center Expenditure Plan for transportation capital and operating costs of providing transit, traffic enforcement, street sweeping and public safety services outside the premises are fully funded through the life of the project. If adopted by the Board of Supervisors on December 8, 2015 as expected, the ordinance would establish a Designated Overlapping Event Reserve Account to fund transit enhancements and traffic enforcement costs of servicing non-Golden State Warriors events at the event center that occur on the same weekday evening as a SF Giants evening game. The ordinance would authorize an annual deposit of funds for the useful life of the event center. The Designated Overlapping Event Reserve Account would be used to implement supplemental transportation management actions, including a number of measures noted in comments, such as providing additional Mission Bay TMA and event-specific shuttle service. General categories of the types of measures that would be implemented include: separation of traffic destination, increased transit capacity, increased capacity of other modes, reduction in transit costs, disincentives to driving, incentives for alternative modes, and increased marketing efforts. On October 7, 2015, the Golden State Warriors and the University of California San Francisco (UCSF) signed a Memorandum of Understanding (MOU) agreeing to restrictions on the scheduling of certain large weekday non-Golden State Warriors events at the event center that start within an hour of a SF Giants home game. Specifically, if the City and the Golden State Warriors make the transportation improvements and transportation demand management strategies detailed in the aforementioned MOU, in Board of Supervisors File 150995 establishing a Mission Bay Transportation Improvement Fund, and in the SFMTA Board Resolution 15-154, and these do not reduce traffic delays to below unacceptable levels as defined in the MOU, the Golden State Warriors agree to hold no more than 12 large non-Golden State Warriors evening events that start before 8:00 p.m. on a weekday night with a SF Giants home game in the subsequent calendar year. No other venue in the NBA has a similar restriction on the ability to schedule events.

Because the SEIR did not identify a significant impact on emergency vehicle access, no mitigation measures are required. Improvement Measure I-TR-10a: UCSF Emergency Vehicle Access and Garage Signage Plan and Improvement Measure I-TR-10b: Mariposa Street Restriping Study were included in the SEIR for consideration by City decision makers to further reduce the proposed project's less-than-significant impacts related to emergency vehicle access.

Issues Raised by Late Commenters on Construction-related Transportation Impacts

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-30 O-MBA29L12-1

Section 13.11.6 – Response TR-10

This response, which concerns construction impacts, is merely a reprise of the inadequate information and findings in the DSEIR that prompted our and several other comments. Of particular concern is the failure to address construction impacts associated with the reconstruction of the LRT station by the Project site on Third Street, a reconstruction which poses impacts for ordinary traffic on Third Street, emergency vehicle traffic on Third Street and for operations of the T Third Muni LRT line itself, which may impose social justice transportation impacts on the disadvantaged communities located further south in the T Third LRT corridor. These social justice impacts in specific have not been addressed. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-30]*)

Central Subway/ T Third Electrical Power Distribution System Expansion

The Central Subway / T Third electrical power distribution system expansion is included in the proposed Project to provide additional traction power for expanded frequencies of LRT service associated with new special event operations. This traction power expansion feature would provide two new circuits from the existing King Street substation for the inbound and outbound circuits of the Central Subway / T Third. Providing duct banks for the new electrical connection for King Substation and the Central Subway line would involve trenching in the eastbound and westbound travel lanes of King Street between Second and Fourth Streets. This trenching would take place over a 6-month period and would require lane closures while trenching and duct installation is actively taking place. Although the power distribution system expansion had previously been identified by SFMTA as a desirable long-term action, it is now incorporated in the subject Event Center and Mixed Use Development Project.

As noted in the third paragraph of SEIR Volume 4, page 12-11, the trenching work and duct installation on King Street associated with the electrical power distribution system expansion was not analyzed in the DSEIR.

Under CEQA, if the project changes after publication of the Draft EIR, and these changes create a new significant impact not identified in the Draft EIR, or a substantial increase in severity of a significant impact that was identified in the Draft EIR, the lead agency must recirculate the draft EIR for public comment.

(CEQA section 21092.1.). Although the FEIR makes the conclusory statement that this would not result in new or more severe impacts than previously disclosed, there is no analysis to support this conclusion, which defies logic that this always busy boulevard would be unimpacted by lane closures over a period of six months. (*Mission Bay Alliance, Daniel T. Smith Jr., letter, November 13, 2015 [O-MBA29L12-1]*)

Response to Late Comment TR-14: Construction-related Transportation Impacts

Response TR-10 in the RTC document responds to each concern previously raised by the commenter on SEIR Impact TR-1, construction-related transportation impacts, and describes how the previous issues raised by the commenter were considered in the assessment of

construction-related transportation impacts. SEIR p. 5.2-115 describes the construction-related transportation impacts associated with the extension of the existing northbound light rail platform and associated track work within the median. Construction-related transportation impacts of the Muni UCSF/Mission Bay Station Variant are presented on RTC document pp. 12-25 – 12-26. While it is correct that construction would occur over a 14-month period, construction activities would not be continuous for the entire period. Construction activities would be limited to a shorter period of construction than 14 months, and to the extent feasible, the work would be scheduled during periods of lower passenger demand, such as on weekends, when impacts to light rail service would be less than during the weekdays.

Construction activities may result in closure of one of the northbound and/or southbound travel lanes on Third Street. Accommodation of emergency vehicle access for construction of transportation network improvements is required as part of project construction contracts. Temporary travel lane closures for short segment of Third Street would not substantially affect traffic conditions. As noted above, to the extent possible, the work would be scheduled on weekend when traffic volumes on Third Street are lower. Similarly, because the disruption of T Third service would be limited in duration and be temporary, and because the light rail service would be replaced with a bus service in order to maintain transit access, the comment stating that these transit improvements may impose social justice transportation impacts on the disadvantaged communities south of the project site is not accurate.

Temporary transportation impacts during construction of the electric traction power upgrades to the Muni T Third and Central Subway would not result in new significant impacts or require additional mitigation measures that were not previously disclosed in the Final SEIR and therefore do not require recirculation of the Final SEIR. As noted in the RTC document on p. 12-11, construction activities along King Street would occur intermittently during the non-peak hours over the course of about six months, and not for the entire six months. Construction activities would also be limited to one block at a time, as trenching for the duct bank would occur in sections along King Street: between Second and Third Streets, and then between Third and Fourth Streets. As described on RTC document p. 12-11, King Street is identified in the SFMTA Blue Book as a Street of Major Importance, and therefore no construction work would occur during the weekday commute periods; during the a.m. and p.m. peak periods the trench for the new duct bank would be plated over, and all travel lanes would be open to vehicular traffic. For these reasons, temporary transportation impacts of construction along two blocks of King Street was determined to be less than significant.

Issues Raised by Late Commenters on Parking

This response addresses all or part of the following comments, which are quoted below:

A-UCSF2-1

- First, we request that the City make long-term commitments on providing the off-site parking at 19th Street and the Western Pacific sites to serve the Event Center. (*University of California San Francisco, Lori Yamauchi, letter, November 3, 2015 [A-UCSF2-1]*)

Response to Late Comment TR-15: Parking

On November 10, 2015 the San Francisco Port Commission unanimously adopted Resolution No. 15-42 directing Port staff to create a parking management strategy and a plan of finance and complete any necessary environmental review for the use of vacant Port property at 19th and Illinois and an underutilized portion of the Western Pacific property north of Pier 80 for overflow parking to serve the proposed event center.

Resolution No. 15-42 did not include a term for the use of these two sites as parking, although it did note that "the Port does not now have current development plans for either the Illinois Street or the Western Pacific sites, and the use of either site would neither displace existing tenants nor impair Port operations or existing public access." Once Port staff can complete all necessary environmental review with the San Francisco Planning Department and determine any necessary capital improvements required to convert these sites to a parking use, the Port will be able to recommend a term as part of a request for proposal process to select a parking operator.

Issues Raised by Late Commenters on Helipad Impacts

This response addresses all or part of the following comments, which are quoted below:

A-UCSF2-3

Third, we ask that in Mitigation Measure M-TR-9d, Event Center Exterior Lighting Plan, that the words "where feasible" be deleted. The Warriors have a large site to work with, and it seems reasonable that they could "avoid the use of light configurations similar to those associated with the UCSF helipad landing area, and locate primary outdoor lighted displays and television/lighted screens away from the project property line at 16th Street, South Street, or Third Street" without adding the qualifying "where feasible." This is important for the safety of patients, pilots, and persons in the vicinity. (*University of California San Francisco, Lori Yamauchi, letter, November 3, 2015 [A-UCSF2-3]*)

Response to Late Comment TR-16: Helipad Impacts

The commenter requests that that since the Warriors have a large site to work with, the words "where feasible" be deleted as a qualifier from the measure in SEIR Mitigation Measure M-TR-9d, Event Center Exterior Lighting Plan to "(a)void the use of light configurations similar to those associated with the UCSF helipad landing area, and locate primary outdoor lighted displays and television/lighted screens away from the project property line at 16th Street, South Street, or Third Street, where feasible".

The comment is noted. The specific measure in SEIR Mitigation Measure M-TR-9d that the commenter identifies addresses two different issues 1) the requirement to avoid any potential light configurations similar to those light configurations associated with the UCSF helipad landing area; and 2) the requirement to locate primary outdoor lighted displays and television/lighted screens away from the project property line at 16th Street, South Street, or Third Street, where feasible. With respect to issue No. 1), the sponsor is committed to avoiding the use of light configurations similar to those associated with the UCSF helipad landing area, without any qualifier. Accordingly, as a clarification in response to this comment, prior to certification of the Final SEIR by the OCII Commission, an Errata to the RTC document was prepared that removed the term "where feasible" as referencing this portion of the measure (see below for revisions made in the Errata).

With respect to issue No. 2), it is the sponsor's intent to locate primary outdoor lighted displays and television/lighted screens away from the project property line at 16th Street, South Street, or Third Street, where feasible. The term "where feasible" is retained for this portion of the measure, given that the specific placement of each outdoor lighted display and television/lighted screen is not yet known, as the final exterior lighting plan is not yet finalized by the sponsor, and approved by OCII. However, Mitigation Measure M-TR-9d includes a performance standard that the project would not result in a substantial air safety risk and/or create a safety hazard related to helipad operations. Furthermore, as specified in Mitigation Measure M-TR-9d, all feasible measures shall be developed in consultation with SFO staff knowledgeable of the effects of lighting on pilots and safe air navigation, and OCII (or its designated representative). These factors ensure that all potential project-related lighting effects, including those related to outdoor lighted displays and screens, on helipad operations would be less-than-significant.

As indicated above, the Final SEIR, as clarified in the Errata to the RTC document, includes the modified fifth bullet under Mitigation Measure M-TR-9d, as follows [new text is shown in underline and newly deleted text is shown in strikethrough (~~strikethrough~~)]:

> Avoid the use of light configurations similar to those associated with the UCSF helipad landing area, and where feasible, locate primary outdoor lighted displays and television/lighted screens away from the project property line at 16th Street, South Street, or Third Street~~, where feasible~~

Issues Raised by Late Commenters on Off-site Parking Mitigation

This response addresses all or part of the following comments, which are quoted below:

O-MBA27S9-8

The revised parking analysis, SEIR Appendix TR-X, identifies additional parking areas to the south of the Project site that are not addressed in the DSEIR. We note that the nearer site, described as 'the Nineteenth Street site' in Appendix TR-X, is located within the Port of San Francisco's Port Waterfront Land Use Plan Southern Waterfront Subarea and designated as part of the Pier 70 Waterfront Opportunity Area. The site is within the Union Iron Works Historic District (listed on the National Register of Historic Places. Building 40 within the site has been determined to be a contributing resource to the Historic District although the Port has determined that its removal would not affect the historic significance of the District. The Port currently plans to construct a 250 space parking lot on the site. SEIR Appendix TR-X assumes the Port will have done so and that the parking lot will be operational prior to completion of the proposed Project and that it will be made available for use of Project arena event attendees. However, given the complications of the Historic designation, compatibility with the Pier 70 Plans and with the Port's own purposes in developing this parking for support of Pier 70 and the Historic District, the assumptions that this parking will be developed in advance of completion of the proposed Project and will be made available to support the Project's arena event parking over the long term are extremely optimistic and inconsistent with the good faith effort to disclose impact required by CEQA.

The other parking site identified in Appendix TR-X is located on the Southern Waterfront with its nearest corner 1.2 miles south of the nearest corner of the Project site. Portions of the site are located within the San Francisco Bay Conservation and Development Commission's (BCDC) shoreline band jurisdiction. The site is currently used for off-site storage of trailers supporting Moscone Center. The site could support development of an up to 800 space parking lot. Because of the distance from the proposed Project site, it would require shuttle bus service connections. Because considerations such as BCDC approval, development of a suitable place for relocating the off-site trailer parking that supports Moscone Center and whether parking this far from the proposed Project site and located in a remote industrial wasteland would be attractive to patrons have not been addressed, the suitability of this parking area remains speculative. Hence, Response TR-9's assumptions regarding dispersal of parking locations itself remains speculative.

Conclusion

Because of the speculative nature of these parking proposals with respect to service of events at the proposed arena, they cannot be considered clear elements that support the project or disperse its traffic. (*Mission Bay Alliance, Soluri Meserve, letter, November 10, 2015 [O-MBA27S9-8]*)

Response to Late Comment TR-17: Off-site Parking Mitigation

Appendix TR-X in the RTC document was prepared to provide the more detailed description of the potential off-site parking lots that would serve the event center, and to identify the potential environmental impacts of implementing the off-site surface parking facilities included in SEIR Mitigation Measure M-TR-11c: Additional Strategies to Reduce Transportation Impacts of Overlapping Events. Appendix TR-X presents an assessment of impacts on transportation, air quality, noise, cultural resources, hydrology and water quality, hazardous materials, and other impacts. The results on the assessment contained in the memorandum were summarized and incorporated into the SEIR as a clarification of the

impact assessment of Mitigation Measure M-TR-11c: Additional Strategies to Reduce Transportation Impacts of Overlapping Events (see RTC document), and does not replace the analysis of the proposed project without the mitigation measure. As noted in the memorandum and in the SEIR, environmental review and Port approval is required for implementation of these two parking facilities.

Removal of Building 40 is not required for or contemplated as part of the parking use for the Port's site. As noted in Appendix TR-X, Building 40 at the 19th Street site was determined to be a contributing resource to the Union Iron Works Historic District; however, it was not hierarchically rated as a significant or significant among the 41 buildings in the Historic District. Further, the Port plans to remove Building 40 as part of the construction phase of the rehabilitation of the 20th Street Historic Buildings in order to permit the future development of a continuous sidewalk on the east side of the Illinois Street frontage. The Port determined, and the San Francisco Planning Department concurred, that Building 40's removal would not affect the historic significance of the Historic District. If Building 40 were to remain, it would not affect the capacity (i.e., the number of parking spaces) or access points of the proposed parking lot.

As noted in Appendix TR-X, the existing uses on the Western Pacific site related to the Moscone Center, staging of trucks for the event center, and surface parking for 800 vehicles could be accommodated within the Western Pacific site. The area available to accommodate these uses accounts for BCDC's shoreline band jurisdiction, and therefore relocation of the existing truck staging would not be required (although, as noted in Appendix TR-X, truck staging could also be relocated to Pier 96). Use of the Western Pacific site for parking and truck staging would not be subject to BCDC approval. The commenter is correct that the Western Pacific site is within an industrial area; however, free shuttle buses would be provided for attendees that would transport them directly from the parking facility to the event center. The Western Pacific site would be used during overlapping events, and due to the increased demand for parking spaces during overlapping events, it is anticipated that the off-site facility would be utilized despite of its generally industrial location.

The commenter is incorrect in stating that the SEIR assumes that these two off-site parking facilities would be implemented as part of the project. Instead, as noted above, Appendix TR-X and discussion within the RTC document provided additional clarification on the environmental impacts of implementing Mitigation Measure M-TR-11c: Additional Strategies to Reduce Transportation Impacts of Overlapping Events. Impact TR-11 on SEIR pp. 5.2-171 – 5.2-180 presents the analysis of project impacts for conditions without implementation of these two parking facilities.

SECTION 9: RESPONSES TO LATE COMMENTS ON NOISE

The comments and corresponding responses in this section cover topics analyzed in SEIR Section 5.3, Noise and Vibration, as augmented in RTC document Section 13.12. These include topics related to:

- Issue NOI-1: Noise Significance Thresholds
- Issue NOI-2: Noise Impacts of Project Refinements and New Variant

Issues Raised by Late Commenters on Noise Significance Thresholds

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-9 O-MBA20L7-50 O-MBA20L7-52

A. The Construction Refinements and New Project Require Recirculation.

As noted above, the RTC describes a number of "construction refinements," including using dewatering generators, using a soil treatment pug mill, and removing rapid impact compaction from the construction plan and a new Project Variant. With respect to the air quality impacts of these construction refinements and new Project Variant, the RTC finds these changes do not create a new significant noise impact, or a substantial increase in severity of a previously identified significant noise impact, and therefore, recirculation is not required.

As described in the letter from Frank Hubach (Exhibit S), the construction refinements and new Project Variant will create new significant impacts. The RTC's findings to the contrary reflect the same flawed "existing ambient plus project increment" thresholds of significance discussed in my previous comment letter (dated July 25, 2015) regarding noise impacts.

B. The Response to the Alliance's Comments Regarding Construction and Operational Noise Are Inadequate.

Response NOI-2a regarding construction noise thresholds states:

> For this project, as discussed on pages 5.3-17 and 5.3-18, the SEIR applies a threshold of a 10 dBA increase over the existing noise levels, which represents a perceived doubling of loudness as the threshold representing a substantial temporary increase in noise levels warranting implementation of construction noise control measures. A more liberal threshold was developed to be applied to construction impacts given that construction is an inherently noisy activity and application of a lesser threshold, such as the 5 dBA increase applied to operational impacts which denotes a readily perceptible increase, would be exceeded by the most routine construction activity and is therefore not considered to be a realistically applicable criterion for construction. Additionally, a 10 dBA increase threshold is codified in Section 2909 (c) of the Police Code as a noise limit for noise affecting public property. This increase is an appropriate threshold for construction activity as it reflects OCII's understanding that allowable increases in noise levels can be dependent on a number of factors, including source and the duration of the noise and the receiver of the noise.

(RTC, p. 13.12-7 (italics added).) The response regarding operational noise thresholds is similar.

(RTC, p. 13.12-15.)

This is an example of the General Comment described above. This response has injected the question of what is "allowed" into the determination of "significance." The question of what is allowed is the final step in the CEQA process, and involves weighing considerations relating to the

social and economic benefits of the Project. Injecting it into the first step subverts the integrity of the entire analysis.

This conflation of the distinct steps in the analysis also explains why the RTC's insistence on using the San Francisco Police Code's regulatory requirements (i.e., the City's final resolution of what is allowed and what is not allowed) as thresholds of significance is inconsistent with CEQA. The Police Code's regulatory requirements reflect the City's effort to balance the protection of people from harmful noise against the need for social and economic activity. That balance does not necessarily reflect the point at which impacts become significant. Under CEQA, such balancing is also required, but not at the point where significance is determined. In short, even where the lead agency believes an activity should be "allowed" because the social or economic considerations outweigh the environmental harm, the EIR must still disclose whether the impact is significant.

The RTC's reliance on Appendix G to the CEQA Guidelines as support for its use of Police Code's regulatory requirements (RTC, p. 13.12-15) is misplaced because the Guidelines cannot authorize a violation of CEQA. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-9]*)

In my opinion the DSEIR does not use a reliable methodology to determine whether Impact NO-1 or NO-5 is significant.

For Impact NO-1 and Impact NO-5, the DSEIR uses a threshold of significance of the "ambient plus increment" type. For Impact No-1, the "ambient plus increment" threshold of significance is whether the "the increase in noise levels over existing conditions would be less than 10 dBA." (DSEIR, p. 5.3-23.)

This type of threshold discounts the significance or severity of pre-existing noise levels and treats them as if they are irrelevant to whether the incremental change caused by the Project is "significant." Refer to additional detailed information in my 22 July 2015 report. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-50]*)

12.4 Muni UCSF/Mission Bay Station Variant

"*Assuming use of a backhoe, jack hammer and truck crane, construction activities for the demolition of the existing northbound platform wouldgenerate noise levels of 79.4 dBA, Leq at the nearest receptor (Hearst Tower), 75 feet away, which would result in a less than 10 dBA increase over existing ambient noise levels of 71.2 dBA, Leq.*" (pg 12-28)

This is an 8.2 dB increase above ambient and in my opinion significant.

Using these "ambient plus increment" thresholds where existing noise levels are already too high, as shown in Tables 5.3-9 and 5.3-10 (DSEIR, pp. 5.3-34, 36), disregards the fact that the Project will make already severe conditions worse. In addition, using these "ambient plus increment" thresholds for operational noise results in an unsustainable gradual increase in ambient noise. It is a formula for ever-increasing noise levels because each new project establishes a new, higher, baseline; then when the next project is approved, the incremental change will be added to the new baseline.

Therefore, the operational impact assessment needs to be redone using valid, science-based thresholds that relate to actual human health and welfare effects of noise.

In my opinion, is the Project will cause a significant increase in Impact NO-1 and Impact NO-5 above levels existing without the project. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-52]*)

Response to Late Comment NOI-1: Noise Significance Thresholds

Construction Noise Thresholds

The noise analysis of the SEIR applies two different quantitative thresholds to determine whether construction-related noise impacts would be significant. If construction-related noise exceeds either of these thresholds, then the impact is considered significant.

First, construction-related noise is considered significant if it will result in a 10 decibel increase over existing conditions. (Draft SEIR, pp. 5.3-17 to 5.3-18.) This increase over existing conditions is reasonable because it represents a perceived doubling of loudness[1] which can be applied to the noise generated by multiple pieces of equipment operated simultaneously. A quantitative threshold based on perceived loudness and derived from regulatory guidance is an appropriate threshold under CEQA.

Second, construction-related noise is considered significant if a piece of equipment will be operated so that it results in a noise level in excess of 80 dBA at 100 feet. This quantitative limit on noise from construction equipment is derived from the San Francisco Noise Ordinance and the Mission Bay Good Neighbor Construction Noise Policy. (Draft SEIR, pp. 5.3-16 to 5.3-17.)

The standards set forth in an agency's noise ordinance or in adopted noise policies is an appropriate threshold under CEQA. (*Mount Shasta Bioregional Ecology Center v. County of Siskiyou* (2012) 210 Cal.App.4th 184, 204-207; *National Parks & Conserv. Assn. v. County of Riverside* (1999) 71 Cal.App.4th 1341, 1353.)

As a result, a construction-related increase over ambient conditions of less than 10 dBA would nevertheless result in a significant impact if it results in an exceedance of the maximum temporary noise level (80 dBA at 100 feet). Alternatively, even where the incremental increase in the ambient conditions resulting from project construction activities does not exceed the maximum temporary noise level (80 dBA at 100 feet), construction noise impacts would nevertheless be considered significant if the increase over ambient conditions exceeds 10 dBA.

The SEIR does not rely solely on compliance with these regulatory standards to determine whether noise impacts are considered significant. The analysis for construction-related noise impacts also discusses the Mission Bay Good Neighbor Policy. This policy is described at page 5.3-15 of the SEIR. This policy has the effect of imposing additional limits on the days and hours when noise-generating construction activities can occur. This policy applies to the project and would limit extreme noise-generating activity to 8:00 a.m. to 5:00 p.m., Monday through Friday and prohibit such activity on Saturdays, Sundays, and holidays. Please also refer to the response on page 13.12-6 of the RTC document. A limit on the hours when construction-related noise generating activities can occur is an appropriate threshold for determining whether these impacts will be significant. (*Sierra Club v. Tahoe Regional Planning Agency* (E. D. Cal. 2013) 916 F.Supp.2d 1098, 1146-1151.)

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[1] Caltrans, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, p. 2-44.

Comment O-MBA20L-50 states the opinion that use of an increase over ambient threshold is not a reliable methodology. Please refer to the detailed responses to this topic beginning on page 13.12-6 and page 13.12-14 of the RTC document. The comment suggests different thresholds of significance that, in the commenter's view, should have been used to assess the severity of construction noise impacts (e.g., World Health Organization standards). The commenter's disagreement over the methodology used in the SEIR is noted. However a lead agency has discretion to choose the proper significance threshold and does not violate CEQA when it chooses to reject different thresholds proposed by a project opponent. (See *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 335-336 ("*CREED*") [rejecting petitioners' argument that the City erred by not applying a different significance threshold]; C*alifornia Oak Foundation v. Regents of University of California* (2010) 188 Cal. App. 4th 227, 282 [rejecting petitioner's argument that a lead agency used the incorrect significance threshold in evaluating the biological significance of tree impacts]; *National Parks & Conservation Assn. v. County of Riverside* (1999) 71 Cal. App. 4th 1341, 1356-1357 [upholding a biological significance threshold used by Riverside County as supported by substantial evidence].)

Appendix G of the CEQA Guidelines calls for assessing whether the proposed project would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. (CEQA Guidelines, Appendix G, ¶ XII(d).) The criterion set forth in Appendix G are not binding significant thresholds that an agency must use to determine whether an impact is significant. (CEQA Guidelines, § 15063, subd. (f); *Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068.) In this case, however, OCII has exercised its discretion to incorporate this criterion into its significant thresholds for construction noise. This potential impact is addressed in Impact NO-1 (SEIR pp. 5.3-20 to 5.3-23). Here CEQA indicates that the appropriate threshold to be applied could be an increase over existing ambient noise levels without the project but leaves the determination of the quantitative threshold to be applied at the discretion of the lead agency. As noted above, for this project, as discussed on pages 5.3-17 and 5.3-18, the SEIR applies a threshold of a 10 dBA increase over the existing noise levels, which represents a perceived doubling of loudness as the threshold. Use of an ambient plus increment threshold is also codified in Section 2909 of the San Francisco Police Code, and represents a substantial temporary increase in noise levels warranting implementation of construction noise control measures. Thus use of an increase over ambient as a tool for assessing impacts is the suggested approach in the CEQA Guidelines and also the approach used in the City's regulations for controlling noise increases.

Muni UCSF/Mission Bay Station Variant

Comment O-MBA20L7-52 opines that an increase of 8.2 dBA over ambient should be considered a significant noise impact. The commenter thus appears to conclude that a quantitative threshold may be appropriate, but that a quantitative threshold of 10 dBA is too high. OCII disagrees with this comment, and concludes a 10 decibel increase over existing conditions for assessment of construction noise impacts is an appropriate threshold. This increase over existing conditions is reasonable because it represents a perceived doubling of

loudness[2] and is codified in Section 2909 (c) of the Police Code as a noise limit for noise affecting public property. OCII understands therefore, that noise levels above this limit have been determined to be unacceptable from a community perspective and below this limit may be acceptable and further, reflect an acceptable noise increase for temporary or periodic outdoor activities as might occur on public property. A more liberal threshold was developed to be applied to construction impacts than noise impacts of a continuous operational nature in consideration of the necessary temporal limit of construction impacts. OCII reaches this conclusion based on the urban setting, on temporary character of the noise (during construction only), and on the temporal limits on when particularly loud construction equipment can be used (8:00 a.m. to 5:00 p.m., Monday through Friday).

Please see Response to Late Comment NOI-2, below, for a discussion of the operational noise increases associated with the Muni UCSF/Mission Bay Station Variant.

Issues Raised by Late Commenters on Noise Impacts of Project Refinements and New Variant

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-9 O-MBA20L7-51

A. The Construction Refinements and New Project Require Recirculation.

As noted above, the RTC describes a number of "construction refinements," including using dewatering generators, using a soil treatment pug mill, and removing rapid impact compaction from the construction plan and a new Project Variant. With respect to the air quality impacts of these construction refinements and new Project Variant, the RTC finds these changes do not create a new significant noise impact, or a substantial increase in severity of a previously identified significant noise impact, and therefore, recirculation is not required.

As described in the letter from Frank Hubach (Exhibit S), the construction refinements and new Project Variant will create new significant impacts. The RTC's findings to the contrary reflect the same flawed "existing ambient plus project increment" thresholds of significance discussed in my previous comment letter (dated July 25, 2015) regarding noise impacts. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-9]*)

12.2.1 Generator Relocation

"*Because the generators would no longer be in a sub-grade location with the project refinements, the potential noise impacts of the routine generator maintenance operations at the at- or above-grade locations were assessed quantitatively, as described below*." (pg 12-2)

The generator relocation does not specifically address (in terms of decibels) the potential impact to pedestrians, bicyclists or motorists when in close proximity to the generators. Only the two large

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[2] Caltrans, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, p. 2-44.

150 kW generators are fitted with noise control treatments which will have some localized benefit. This is potentially significant impact.

12.2.3 Transportation Improvements

"*Similarly, the temporary impacts of construction noise would be limited to standard construction equipment such as a backhoe and jackhammer, which would not be expected to result in a significant construction noise impact, as these equipment types comply with the construction noise limits of the Sections 2907(a) and (b) of the Police Code, as discussed on page 5.3-14 of the SEIR and would occur in an area with elevated ambient background noise based on modeled baseline traffic volumes derived from the San Francisco County Transportation Authority travel demand model*." (pg 12-11)

This work along King Street has an unspecified noise impact that is in my opinion potentially significant.

12.3.2 Other Construction Refinements

"*Refinements to the proposed construction techniques that were described in the Draft SEIR include: addition of on-site soil treatment, possible use of dewatering pump generators, and removal of rapid impact compaction equipment*." (pg 12-16)

The dewatering pump generators added do not specifically address (in terms of decibels) the potential impact to pedestrians, bicyclists or motorists when in close proximity to the generators. This is potentially significant impact.

"*The pug mill would be enclosed within a large canvas tent to control dust and noise generated by the plant*." (pg 12-17)

It is unlikely the tent will attenuate any pug mill noise. This is potentially significant impact. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-51]*)

Response to Late Comment NOI-2: Noise Impacts of Project Refinements and New Variant

Construction Refinements / New Project Variant Noise Impacts and Recirculation

Project Refinements, Construction Impacts. Comment O-MBA20L7-9 states that the noise impacts related to the additional construction refinements and the MUNI Variant warrant recirculation of the Draft SEIR. As stated on page 12-20 of the RTC document and the revised Table 5.3-9 in Chapter 14, cumulative construction noise levels would actually decrease when the removal of rapid impact compaction activities is considered in combination with pug mill operations and operation of dewatering generators. That is, the combined effect of the construction refinements will be to reduce construction noise, as compared to the noise levels identified in the Draft SEIR. The Draft SEIR concluded that these construction-related impacts would be less than significant and do not require mitigation. Compliance with the Mission Bay Good Neighbor Construction Noise Policy is identified as an Improvement Measure, and has been incorporated into the project and made enforceable by the Mitigation Monitoring and Reporting Program. This Improvement Measure will continue to apply, even though the construction refinements serve to reduce construction noise. Consequently, construction refinements would actually reduce the less than significant impact identified in the SEIR. Therefore, recirculation of a revised Draft SEIR is not required. (CEQA Guidelines, § 15088.5.)

Muni UCSF/Mission Bay Station Variant, Construction Impacts. As stated on page 12-28 of the RTC document, the replacement of the existing high-level northbound and southbound

passenger platforms at the UCSF/Mission Bay light rail stop with a single high-level center platform to accommodate both northbound and southbound light rail service passengers would result in temporary noise increases from construction activities. Construction activities would generally be scheduled on weekends when impacts on light rail service would be less than during the weekdays. For this reason, construction activities at the light-rail platform would generally not occur simultaneously with construction activities for the event center or office towers. These activities would result in a less than 10 dBA increase over existing ambient noise levels of 71.2 dBA, Leq, and would not result in noise levels from non-impact equipment exceeding 80 dBA at 100 feet. Similar to the proposed project, construction noise impacts of the Muni UCSF/Mission Bay Station Platform Variant would be *less than significant*. Therefore, recirculation of a revised Draft SEIR is not required.

Muni UCSF/Mission Bay Station Variant, Operational Impacts. Figure 12-1 at page 12-24 of the RTC document shows the relocation of the UCSF/Mission Bay light rail stop under the Muni UCSF/Mission Bay Station Variant. With the reconfiguration of the light-rail stop, the loading area for northbound passengers would no longer be north of South Street, directly in front of the UCSF Hearst Tower housing building. Instead, the loading area for northbound passengers would extend from 50 feet to approximately 400 feet south of South Street. This relocation of queuing MUNI passengers egressing events at the project site could marginally decrease the severity of the significant noise impact identified for the proposed project in the Draft SEIR. This relocation would incrementally reduce noise from crowds gathering at the Muni platform next to the Hearst Tower and serve as mitigation to the crowd noise impact identified in the Draft SEIR. However, with this shift of the northbound platform, crowds queuing on the platform would now be about 900 feet from the UCSF hospital, instead of 1,200 feet, which could result in a slight increase in noise audible at the hospital after events. Unlike the UCSF Hearst Tower housing building, the hospital does not have operable windows and would be less sensitive to crowd noise due to the presence of these inherent noise-attenuating features. Additionally, the relocated platform would still maintain a sufficient buffer distance to avoid significant crowd noise impacts to the hospital. The incremental reduction in noise at the Hearst Tower would not reduce the substantial increase in noise levels at the housing building identified in the Draft SEIR to a less-than-significant level. Therefore, similar to the proposed project and as identified in the Draft SEIR, operational noise impacts from crowd noise under this variant would be considered *significant and unavoidable*. Because no new significant impacts were identified, recirculation of a revised SEIR is not required.

Generator Relocation

Comment O-MBA20L7-51 states that the assessment of potential noise impacts from relocated standby generators in the RTC document does not address exposure to pedestrians, bicyclists and motorists when they are passing by the facility during maintenance testing. Pedestrian, bicyclist or vehicle passenger pass by exposure would be a limited exposure event likely less than one minute and for the purposes of operational noise analyses are not considered sensitive receptors. As stated on page 12-2 of the Response to Comments document, the two largest (1.5 MW) event center generators would be equipped with critical grade exhaust silencers and low pressure loss silencers at the intake and exhaust vents and would result in a

noise level of 76 dBA at 50 feet. This predicted noise level would be a conservative estimate of the pass by exposure on the sidewalk of 16th Street as the units which would be located 87 feet above grade on the mezzanine level. Noise data collected on 16th street indicates that existing maximum noise level exposures on the sidewalk of 16th street to be 92.4 dBA and recorded an L10 (the noise level exceeded 10 percent of the time) to be 74 dBA. Accordingly, the transient noise exposure from generator operations would be similar to the existing noise environment and would not represent a significant or substantially more severe noise impact.

Transportation Improvements

Comment O-MBA20L7-51 opines that construction work along King Street for electrical power expansion could result in a potentially significant noise impact. As discussed on page 12-28 of the RTC document, use of trenching equipment such as a backhoe, jack hammer and truck crane during construction activities associated with expanding the supply of electrical power available to Muni would generate noise levels of 79.4 dBA, Leq at, 75 feet. As stated on page 12-10, trenching activities on King Street would occur over a six-month period, although construction activities would not be continuous for the entire period. This temporary increase in noise level would be temporary and occur in an area along a major arterial roadway where existing automobile traffic noise (not inclusive of MUNI T-Line operations or other sources) has been modeled by the City of San Francisco Health Department to be above 70 dBA, Ldn. Consequently, construction work along King Street for electrical power expansion would not result in a noise increase of 10 dBA and would not result in noise levels exceeding 80 dBA at 100 feet. The noise impact would be less than significant.

Construction Refinements

Comment O-MBA20L7-51 states that the assessment of potential noise impacts from dewatering pump generators in the RTC document does not address exposure to pedestrians, bicyclists and motorists when they are passing by the facility during maintenance testing. Pedestrians, bicyclists or motorists passing by the facility would have an exposure of less than one minute and for the purposes of operational noise analyses are not considered sensitive receptors. As stated on page 12-20 of the RTC document and the revised Table 5.3-9 in Chapter 14, cumulative construction noise levels would actually decrease when the removal of rapid impact compaction activities is considered in combination with pug mill operations and operation of dewatering generators. Consequently, construction refinements would actually reduce the less than significant impact identified in the Draft SEIR.

The comment also opines that the pug mill enclosure would be unlikely to attenuate operational noise. Quantification of operational noise of the proposed pug mill is presented on page 12-19 of the RTC document. This analysis did not assume any noise attenuation was provided by the proposed enclosure. Consequently, even if the enclosure does attenuate noise, noise levels would be lower than those shown on page 12-19. The noise impacts associated with operation of the pug mill, in conjunction with other construction equipment, is shown to be less than significant.

SECTION 10: RESPONSES TO LATE COMMENTS ON AIR QUALITY

The comments and corresponding responses in this section cover topics analyzed in SEIR Section 5.4, Air Quality, as augmented in RTC document Section 13.13. These include topics related to:

- Issue AQ-1: Emissions Offsets Mitigation Measure
- Issue AQ-2: Mitigation of Construction-related Impacts
- Issue AQ-3: Health Risk Assessment
- Issue AQ-4: Air Quality Significance Thresholds
- Issue AQ-5: Air Quality Traffic Assumptions
- Issue AQ-6: Air Quality Specialist
- Issue AQ-7: Renewable Diesel as Mitigation
- Issue AQ-8: Air Quality Impacts of Project Refinements and Variant

Issues Raised by Late Commenters on Emissions Offsets Mitigation Measure

This response addresses all or part of the following comments, which are quoted below:

A-BAAQMD2-1	O-MBA20L7-4	O-MBA20L7-17	O-MBA20L7-18
O-MBA24L9-5	O-MBA28L11-7	PH2-Lippe-4	

The Bay Area Air Quality Management District (Air District) is willing to assist the City and County of San Francisco {City) by administering an off-site mitigation program to reduce this Project's significant air quality impacts to the extent feasible. As we have discussed extensively with City staff, the $321,646 identified in M-AQ-2b is not sufficient to achieve the 17 tons per year of ozone precursor emission reductions needed for this Project. Due to the nature of air quality impacts that need to be mitigated, comparison of the Air District off-site mitigation program identified for this Project to other air district programs is inappropriate and incorrect.

The amount of funds required to reduce 4.4 tons of reactive organic gases (ROG) and 12.6 tons of oxides of nitrogen (NOx), including a 5 percent administration fee, is $620,922. This amount is based on a study of the Air District's Vehicle Buy Back {VBB) program funds spent over the last 3 years and represents the average cost of reducing ROG and NOx during that three year period. Only through the VBB program can the Air District achieve the contemporaneous emission reductions and other conditions set forth in MAQ-2b.

Air District staff continues to be willing to assist the City in implementing an off-site mitigation program. However, the Final Environmental Impact Report Response to Comments includes the following statement: "Acceptance of this fee by the BAAQMD shall serve as an acknowledgement and commitment by the BAAQMD to: (1) implement an emissions reduction project (s) within one year of receipt of the mitigation fee to achieve the emission reduction objectives specified above [i.e. 17 tons of ozone precursors per year]". Given this language, unless the City amends M-AQ-2b to fund this feasible mitigation measure at the $620,922 level previously discussed with City staff, the Air District will be unable to participate in offsetting this Project's air quality impacts. (*Bay Area Air Quality Management District, Jean Roggenkamp, letter, November 2, 2015 [A-BAAQMD2-1]*)

C. The Response to Comment AQ-7 is Inadequate.

Comment AQ-7 is that the per ton charge for emission offsets is too low to achieve complete offset of the Project's emissions. The response is cagey on this point, but it appears the BAAQMD agreed with the comment, because the response states:

> SF Planning has been in communication with BAAQMD with regard to its suggestion that a higher fee may be warranted to offset project emissions to a less than significant level and found that BAAQMD could not establish that an increased rate beyond that of the Carl Moyer Program plus a five percent administrative fee could meet the "rough proportionality" standard required under CEQA.

(RTC, p. 13.13-67.) The RTC's rationale for contending that a higher offset fee would not meet the "rough proportionality" standard is that offsets fees in other areas of the state are not higher than the offset fee proposed in the DSEIR. This is an error of law. The "rough proportionality" requirement requires a comparison of the cost of the mitigation to the degree of severity of the impact. The fee charged in other areas of the state are irrelevant to "rough proportionality." (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-4]*)

VII. The Lead Agency's Efforts on Behalf of the Applicant To Force Reduced BAAQMD Emission Offset Fees Jeopardizes the Project's Emission Reductions

At FEIR pg. 13.13-67 the Lead Agency appears to have rejected NOx offset fees estimated for the Events Center project, provided by BAAQMD:

> SF Planning has been in communication with BAAQMD with regard to its suggestion that a higher fee may be warranted to offset project emissions to a less than significant level and found that BAAQMD could not establish that an increased rate beyond that of the Carl Moyer Program plus a five percent administrative fee could meet the "rough proportionality" standard required under CEQA.

No evidence is provided in the FEIR that identifies the criteria used by SF Planning to determine that costs for the Applicant's emission credits provided by the BAAQMD would be unable to meet the "rough proportionality" CEQA standard; this information must be provided for the public's review.

At SDEIR pg. 5.4-41, M-AQ-2b appears to have been written to require the Event Center's use of BAAQMD NOx credits:

> "Mitigation Measure M-AQ-2b would require the project sponsor to pay an offset mitigation fee to the BAAQMD to fund emissions reduction projects that would reduce emissions of ozone precursors to below the applicable thresholds."

Based on information found in the FEIR, it appears that the Planning Department and BAAQMD have not resolved their disagreement on the costs for offsets to be provided by BAAQMD. It also appears that the Lead Agency has designed the above-referenced measure such that the project must acquire 17 tons (appearing to be underestimated based on comments noted elsewhere in this comment letter) of ozone precursor emission credits from BAAQMD. Found primarily at FEIR pg. 13.13-66, the Lead Agency appears to have indicated its intent to require the Events Center Applicant to pay no more than average emissions credit value established under the statewide Carl Moyer program. Nothing, however, requires that a local air district charge that value or less for emissions credits it establishes under the Program, nor can it since the average cost-effectiveness program values are established by actual supply-and-demand factors that float with market conditions that differ regionally and over time. The BAAQMD cannot be forced by the Lead Agency or the Applicant to provide credits at a price they feel is reasonable based on statewide or other averages. Further, lower cost tons in Sacramento or the San Joaquin valley are not relevant to the case at hand because the geographical equivalent of the "rough proportionality" CEQA argument the Lead Agency has made would prevent their use for the Events Center project.

It seems that the Lead Agency clearly has the cart before the horse now. It first established that the project must purchase emission offsets from BAAQMD, but then later decided that their fees were not in "rough proportionality" (without providing any evidence or criteria as to what they consider "rough proportionality") to the value of those same credits sold in other locations of the State—despite that the dollar values of those 17 tons of precursor emission credits to be found in Sacramento or the San Joaquin valley or elsewhere were made irrelevant by CEQA's requiring that mitigation and impact be co-located as closely as possible. Notwithstanding the Lead Agency's discourse that carries across both FEIR pages noted above, the FEIR's response never settles the uncertainty of whether the BAAQMD will provide what the Lead Agency believes are the necessary tons of offsets needed by the project or how the Applicant's fees of $321,646 will buy those tons that the BAAQMD has indicated that it will sell for appreciably more. As written, the FEIR has failed to settle the issue and provide the reasonable level of certainty that the project's emissions will actually be mitigated to less than significant levels beginning with construction startup. This is not acceptable under CEQA, and it is not appropriate that the Lead Agency attempt to dictate what market-based emission offsets/credits that it does not control are worth. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-17]*)

VII. Emission Offsets Required for the Project May Be Unacceptably Short-Lived

At FEIR pg. 13.13-67, the Lead Agency has not responded substantively or meaningfully to our earlier-expressed concern that emission offset credits for the Events Center project, created with short-term emission projects, will fail to provide durable emission benefits for the Events Center across its lifetime. Nothing in CEQA provides that short-term credits of several years duration would be adequate to offset the Events Center project across its 30 – 50 year lifetime, nor has the Lead Agency provided any evidence to the contrary. From FEIR pg. 13.13-67:

> Another commenter states that the offset amount presented on page 5.4-41 of the SEIR would only offset a single year of emissions. This assertion is incorrect. Emissions offset programs replace existing high-polluting engines with cleaner more efficient engines and the incremental benefit of these replacements are realized for successive years into the future until the original engine would have reached the end of its useful life or its operation is prohibited by regulation (e.g., California Code of Regulations, Title 13, Division 3, § 2449(d)(2) (in-use off-road diesel regulation)). Other offset programs, such as the shoreside power unit implemented by the Port of San Francisco pursuant to the Final EIR for the 34th America's Cup and James R. Herman Cruise Terminal and Northeast Wharf Plaza (Case No. 2010.0493E) continue to offset hoteling emissions of diesel ships in dry dock at Pier 70.

As noted elsewhere in our comments, the BAAQMD is required by Events Center EIR to provide precursor emission reductions to offset the 17 tons estimated in the EIR as required for the project[10]. However, whether those credits are produced by the BAAQMD or another entity proximate to the project area, the FEIR fails to require that they be derived from long-lived projects. As currently written in the EIR's M-AQ-2b, it is possible that BAAQMD will fund short-duration projects with the Events Center offset fees, or, based on our expressed concerns that BAAQMD offsets may not ultimately be acquired for the project due to SF Planning's disagreements with them over offset values, another credit-generating project approved by the Lead Agency may deliver only short-duration benefits. This would not provide the long-term emission reductions needed for the Events Center's offsets.

In fact, the Moyer Program has funded projects that traditionally have provided emission credits for no more than an average of nine years, and the average life of all Moyer projects, including onroad projects of the type identified for possible application to the Events Center project, is seven years[11]. 2011 Moyer Program Guidelines require that the maximum project life for offroad compression-ignition equipment replacement projects is five years except that for excavators, skid steer loaders and rough-terrain forklifts the maximum is three years, and for crawler tractors, off-highway tractors, rubber-tired dozers, and workover rigs it is a maximum of 7 years[12]. Marine projects may be undertaken but with no more than a sixteen year life. Even at their longest, Moyer project emission credits purchased only once for the Event Center project will last no more than a minor portion of the project's planned lifetime.

As currently devised, the Events Center EIR does not proscribe the purchase and use of short-term project (as little as one-year) emission offsets by the Applicant, nor does it prevent use of any combination of project emissions that would not match contemporaneously with Events Center significant emissions emitted at any point over its decades of planned life. Neither does the FEIR excerpt shown above provide information that disputes our previously submitted comment that mobile source credit-generating products, undertaken with Moyer funds, must be relatively short-term since project vehicles typically are rendered obsolete by new vehicles with lower emissions levels moving regularly into the marketplace. Rather than disputing our contention, the FEIR actually appears to have done no more than repeat it. This is not acceptable.

The Lead Agency has failed to define "successive years" in the excerpt above, nor has it identified a minimum project life for credits that it will approve for offsetting the Events Center significant emissions. Nowhere does the Lead Agency discuss purchase and use of successive emission reduction projects over the years so that the Events Center will always have adequate numbers of tons of reductions to offset its significant tons of emissions. Moreover, it has refused to prohibit use of short-term Moyer Project emission offsets that would last no more than a few years, despite the Events Center's emissions lasting decades longer. As currently written, M-AQ-2b provides no certainty that the project's tons of significant ozone precursors will be fully mitigated across their lifetime; in all likelihood, emission credits will provide no more than several years of emission reductions before their engendering Moyer projects expire.

Footnotes:

[10] As noted elsewhere in this comment letter, we argue that onroad and offroad emissions for the Event Center EIR have been underestimated as a result of a double-claim for existing vehicle trip emissions attributed historically to the Oakland Oracle arena, and because mitigations for operational and construction equipment contain unacceptable flaws and, with M-AQ-1's requirements, those flaws result in unattainable and unenforceable components.

[11] CARB; 2006 Moyer Program Status Report, pg. 12; http://www.arb.ca.gov/msprog/moyer/status/2006status_report.pdf

[12] CARB; 2011 Moyer Guidelines, Ch.7; pg. 7-5; http://www.arb.ca.gov/msprog/moyer/guidelines/2011gl/2011cmp_ch7_07_11_14.pdf

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-18]*)

The Alliance previously commented on the Draft SEIR (Comment AQ-7) that the per ton charge for emission offsets is too low to achieve complete offset of the Project's emissions. The City's response to comments on this point is cagey, but it does suggest what now turns out to be fact - that the BAAQMD agreed with the comment - because the response states:

> SF Planning has been in communication with BAAQMD with regard to its suggestion that a higher fee may be warranted to offset project emissions to a less than significant level and found that BAAQMD could not establish that an increased rate beyond that of the Carl Moyer Program plus a five percent administrative fee could meet the "rough proportionality" standard required under CEQA.

(RTC, p. 13.13-67.) The RTC's rationale for contending that a higher offset fee would not meet the "rough proportionality" standard is that offset fees in other areas of the state are not higher than the offset fee proposed in the DSEIR. This is an error of law. The "rough proportionality" requirement requires a comparison of the cost of the mitigation to the degree of severity of the impact. The fees charged in other areas of the state are irrelevant to "rough proportionality." (*Mission Bay Alliance, Thomas N. Lippe, letter, November 5, 2015 [O-MBA24L9-5]*)

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5. The Board of Supervisors cannot find that "Impact AQ-4: Potential conflicts with BAAQMD's 2010 Clean Air Plan" is less than significant with mitigation because the City and Project Sponsor refuse to agree to BAAQMD's offset fees per Mitigation Measure M-AQ-2b. (See Exhibits 4 and 5.) There is also no evidence that the "Option 2" offset idea within Mitigation Measure M-AQ-2b is feasible.

There are too many unanswered questions regarding Option 2, including lack of assured verification of offsets to ensure their effectiveness, and lack of assurance that offset sources are available in the quantity required. BAAQ MD' s offset program at least answers some, if not all, of these questions.

The Commission cannot find that all feasible mitigation measures that would substantially reduce "Impact AQ-1: Impacts of Criteria Air Pollutants from Construction" have been adopted as required by CEQA section 21081, because there is no evidence that paying the offset fees demanded by BAAQMD is infeasible. Also, as discussed above, there is no evidence that the "Option 2" offset idea within Mitigation Measure M-AQ-2b is feasible; therefore, it is not an adequate substitute for BAAQMD's offset program. This also applies to:

- Impact AQ-2: Impacts of Criteria Air Pollutants from Project Operations; and
- Impact C-AQ-1: Project Contribution to Regional Air Quality Impacts.

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 9, 2015 [O-MBA28L11-7*)

Two quick points. The Bay Area Air Quality Management District is not participating in your offset mitigation for ozone precursor pollution; therefore that mitigation measure is no longer effective to reduce -- we never thought it was, but even on your own terms, it's not effective to reduce those impacts to less than significant, because the agency to do the offset program is no longer agreeing to the price.

And that is a mitigation measure that the project sponsor apparently has refused to adopt, and that's a trigger for recirculating the EIR as a draft so that people can comment on this development. And this is a development that occurred yesterday, apparently, based on the letter that was on the table this morning. *(Thomas N. Lippe, transcript November 3, 2015 [PH2-Lippe-4]*)

Response to Late Comment AQ-1: Emissions Offsets Mitigation Measure

Mitigation Off Set Fee

The Bay Area Air Quality Management District (BAAQMD) letter states that a mitigation fee of $18,030 per weighted ton per year (plus a 5 percent administrative fee) identified in Mitigation Measure M-AQ-2b of the SEIR is insufficient to achieve the required reduction of 17 tons per year of ozone precursors. The letter proposes that the mitigation fee should be based on the BAAQMD's Vehicle Buy Back Program, at a cost of $620,922 (or approximately $36,525 per weighted ton per year, plus a 5 percent administrative fee) to achieve the required emissions reduction.

As discussed in the Draft SEIR (pp. 5.4-41 to 5.4-42) and the RTC document (pp. 13.13-65 to 13.13-69), the offset fee identified in Mitigation Measure M-AQ-2b is based on the California Air Resources Board (CARB) Carl Moyer program cost-effectiveness criteria. These criteria were developed by CARB to establish the upper limit for emissions offset projects eligible to receive funding through the Carl Moyer program. The Guidelines adopted by CARB, including those establishing cost-effectiveness criteria, apply to air district programs State-wide, and thus are relevant to determining the appropriate amount of an offset fee in the Bay Area.

Planning staff has been in communication with BAAQMD with regard to its statement that a higher fee may be warranted to offset project emissions. Planning staff has engaged in these communications in order to understand the rationale underlying BAAQMD's statement that an increased rate beyond that of the Carl Moyer Program plus a 5 percent administrative fee could meet the "rough proportionality" standard required under CEQA.

The Carl Moyer fee structure was reviewed and updated by CARB in March of 2015 and became fully implemented on July 1, 2015. The offset costs cited in Mitigation Measure M-AQ-2b Emission Offsets are consistent with those of the CARB and other operating California air districts. For example, in the Sacramento Metropolitan Air Quality Management District, the off-site construction mitigation fee rate is $18,030 per ton of excess NOx emissions as of July 1, 2015 (plus an administrative fee of 5 percent) and is based on the cost effectiveness formula established in California's Carl Moyer Incentive Program. In the San Joaquin Valley Air Pollution Control District, the Indirect Source Review (ISR) program requires that an offsite reduction fee of $9,350 per ton plus a 4 percent administration fee be applied for NOx emission reductions that cannot be achieved through onsite emission reduction measures. Furthermore, the offset costs in Mitigation Measure M-AQ-2b is consistent or even higher than comparable offset programs in the San Francisco Bay Area Air Basin (SFBAAB).[3] In particular, CARB prepares an annual report summarizing Emission Reduction Offset Transaction Costs under New Source Review and similar programs. The most recent report is for the year 2014. CARB reports that the median cost for NOx offsets during 2014 was $14,500 per ton, with a high cost of $15,000 per ton. For hydrocarbon offsets, the median cost was $7,000 per ton, with a high cost of $9,542 per ton. These figures indicate that the mitigation measure – which requires payment of a fee of "not less" than $18,030 – may already be significantly higher than the established market for offsets in the Bay Area. The CARB report also indicates that there is an established, functioning market for such offsets in the Bay Area, demonstrating the feasibility of this measure.[4]

The BAAQMD's November 2, 2015, letter does not establish that the CARB cost-effectiveness criteria are inappropriate for determining the offset costs under Mitigation Measure M-AQ-2b. Based on the information and analysis presented in the Draft SEIR, the RTC document, and supporting technical analyses, Planning Department and OCII staffs continue to believe that the offset fee established in Mitigation Measure M-AQ-2b is reasonable and sufficient to achieve the required emissions offsets. Nevertheless, in response to BAAQMD's November 2, 2015 comment letter, staff recommended, and the OCII Commission approved, an amendment to Mitigation Measure M-AQ-2b. The revision to Mitigation Measure M-AQ-2b clarifies that the amount of the BAAQMD offset fee is not capped. As revised, Mitigation Measure M-AQ-2b provides:

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[3] Keinath, Michael, Rambol Environ, 2015. Analysis of the Proposed Offset Program for the Golden State Warriors. October 19, 2015.

[4] California Air Resources Board, *Emission Reduction Offset Transaction Costs -- Summary Report for 2014 (April 2015)*, pp. 17-18.

> Upon completion of construction, and prior to issuance of certificate of occupancy, the project sponsor, with the oversight of OCII or its designated representative, shall either:
>
> 1) Pay a mitigation offset fee to the Bay Area Air Quality Management District's (BAAQMD) Strategic Incentives Division in ***an amount no less than*** $18,030 per weighted ton of ozone precursors per year requiring emissions offsets plus a 5 percent administrative fee to fund one or more emissions reduction projects within the San Francisco Bay Area Air Basin (SFBAAB). This fee is intended to fund emissions reduction projects to achieve reductions of 17 tons of ozone precursors per year, the estimated tonnage of operational and construction-related emissions offsets required. Documentation of payment shall be provided to OCII or its designated representative…..
>
> (Emphasis Added.)

This revision will enable the project sponsor to continue discussions with the BAAQMD to determine the amount of the appropriate fee, while establishing a "floor" of $18,030 per ton. The payment of this fee requires an agreement between BAAQMD and the project sponsor regarding the amount of the fee. If BAAQMD and the project sponsor are unable to reach agreement, then this fee will not be paid to BAAQMD.

In addition, as discussed in the RTC document, Mitigation Measure M-AQ-2b has been revised since publication of the Draft SEIR to provide the project sponsor with a second option under this measure to directly implement an emissions offset project as an alternative to entering into an agreement with the BAAQMD. To qualify under this option, the specific emissions retrofit project must result in emission reductions within the SFBAAB that would not otherwise be achieved through compliance with existing regulatory requirements. Prior to implementation of the offset project, the project sponsor must obtain OCII's approval of the proposed offset project by providing documentation of the estimated amount of emissions of ROG and NOx to be reduced (tons per year) within the SFBAAB from the emissions reduction project(s).

As an alternative to paying BAAQMD an offset fee, Mitigation Measure M-AQ-2b authorizes the project sponsor to "[d]irectly implement a specific offset project to achieve reductions of 17 tons per year of ozone precursors…" There is nothing novel about air quality offsets, which are commonly purchased throughout areas of California in which existing ambient air quality is polluted enough to require new development projects to seek ways to mitigate expected increases in air pollution. The requirement to reduce ozone precursors by 17 tons thus serves as a specific, quantifiable performance standard that the project sponsor must achieve.

Notably, successful air quality offset projects have previously been implemented within the City. For example, the 34th America's Cup and James R. Herman Cruise Terminal and Northeast Wharf Plaza Project EIR required construction of a long-term shoreside power

facility to be developed at the Port's dry dock facility at Pier 70 to offset the project's emissions.[5] This facility provides electrical grid power for ships brought in for unscheduled maintenance, eliminating the need for auxiliary loads to be supplied by on-board diesel generators, which emit much greater amounts of air pollutants. Estimated reductions for year 2013 were 11 tons of reactive organic gases (ROG), 215 tons of nitrogen oxides (NOx), and 6 tons per year of particulate matter (PM_{10} and $PM_{2.5}$). The shoreside power facility offset project has since been successfully implemented, and continues to provide emissions reductions. Notably, the State of California has recently formulated an approach to offsets similar to the one proposed for this project, by which the project sponsor could either purchase offsets through an existing air district program or, as an alternative, could purchase its own offsets an open-market transaction.[6] Therefore, evidence supports the conclusion that offset projects can be successfully implemented to offset emissions. Furthermore, should the project sponsor desire to comply with Mitigation Measure M-AQ-2b by implementing a specific offset project under option two, the project must first be approved by OCII in order to verify the amount of the offset that will be achieved by implementing the offset project.

Under either option included in Mitigation Measure M-AQ-2b, the project sponsor must achieve reductions of no less than 17 tons of ozone precursors per year, the estimated tonnage of operational and construction-related emissions offsets required for the project. The mitigation measure further provides that the measure must be implemented after "completion of construction" and "prior to issuance of the certificate of occupancy." Therefore, certificates of occupancy will not be issued until the project sponsor has either (1) paid BAAQMD's offset fee as per an agreement between BAAQMD and the project sponsor, with the amount of the fee not less than $18,030 per ton, or (2) directly implemented an offset project(s) approved by OCII to offset no less than 17 tons of ozone precursors per year. While it is anticipated that direct offset projects will be available to achieve this offset, if such offset projects are not available, then the project sponsor would need to pay the offset fee required by BAAQMD in order to obtain certificates of occupancy. Therefore, the mitigation measure is enforceable and ensures project operations will not commence until project emissions have been offset.

For the reasons summarized above and discussed in greater detail in the SEIR and RTC document, the November 2, 2015 letter from the BAAQMD does not alter the analysis or conclusions reached in the SEIR. OCII believes Mitigation Measure M-AQ-2b is feasible and would reduce identified construction and operational air quality impacts described in SEIR Impacts AQ-1, AQ-2, and C-AQ-1.

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[5] San Francisco Planning Department, 2011. *Final EIR on the 34th America's Cup & James R. Herman Cruise Terminal and Northeast Wharf Plaza.* Case No. 2010.0493E. State Clearinghouse No. 2011022040. Certified on December 15, 2011. See Vol. 6, Section 12.13, page 12.13-37.

[6] Department of Water Resources, December 2013, *Draft EIR/EIS for Bay Delta Conservation Plan*, pp. 22-52 – 22-56, State Clearinghouse No. 2008032062.

Rough Proportionality

Commenters disagree with the rough proportionality interpretation used in the development of Mitigation Measure M-AQ-2b. However, the commenter is mistaken that the fee charged in other areas of the state are irrelevant. Rather, the fee charged in other Northern California locations provide a direct comparison of the industry standard within the same geographic region. Moreover, the Carl Moyer Guidelines apply State-wide, and therefore encompasses the Bay Area. Nevertheless, as described above, the mitigation measure has been revised to indicate that the amount of the BAAQMD offset fee is not capped.

Emissions Offset Duration of Benefits

Commenters assert that emissions offsets may be unacceptably short-lived. OCII disagrees. As a condition of project approval, the project sponsor has committed to implementing all mitigation measures identified in the Final SEIR, including Mitigation Measure M-AQ-2b, Emissions Offsets. Mitigation Measure M-AQ-2b requires that offset project(s) achieve an annual 17 ton reduction. BAAQMD (option 1) or OCII (option 2) would be responsible for determining that the offset project meets the requirements of the measure. OCII staff disagrees with the assertion that the project sponsor will not comply with their obligation. OCII reasonably concluded BAAQMD can and should comply with full attainment of emissions offset under option 1, and similarly, it must be assumed that under option 2, OCII would comply with its obligations pursuant to the mitigation measure. The mitigation measure includes clear language specifying the purpose and intent of the emission offset project, such that the estimated annual amount of ROG and NOx to be reduced within the SFBAAB would offset the project emissions.

Issues Raised by Late Commenters on Mitigation of Construction-related Impacts

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-3 O-MBA20L7-14

I. Air Quality Impacts.

The Alliance's comments on the Responses to Comments related to Air Quality issues are set forth in the November 2, 2015, letter from John Farrow attached as Exhibits A and B, the November 2, 2015, letter from Greg Gilbert attached as Exhibit C, and in this letter.

A. The Response to Comment AQ-6a is Inadequate.

Mitigation Measure M-AQ-1 requires the use of Tier 2 or better engines for all off-road equipment. The "step-downs" from Tier 4 to Tier 3 to Tier 2, or from Tier 3 to Tier 2, are allowed when Tier 4 (or Tier 3) is not "commercially available." But step-downs from Tier 2 are not available under any scenario.

Mr. Gilbert's July 19, 2015, letter commented that this mitigation is not feasible because there is not enough Tier 2 or better equipment available for the Project Sponsor to use. The response to this

comment states that "in 2014 approximately 59 percent of all off-road equipment in the state were operating with Tier 2 engines or better" and, therefore, it appears the measure is feasible. (RTC, p. 13.13-53).

But the response does not specify whether the diesel off-road equipment sampled included equipment in private or government fleets that are not potentially available to the Project Sponsor to use, or alternatively, whether it consisted only of equipment that is potentially available to the Project Sponsor to use. If the former is true, then the 59% sampling result is meaningless, because the relevant population to sample is equipment that is potentially available to the Project Sponsor to use. A review of Figure 4 in the document cited in footnote 20 on RTC page 13.13-53 appears to indicate that the population of equipment sampled is all equipment, including equipment that is not potentially available to the Project Sponsor to use. Therefore, the 59% sampling result appears to be meaningless.

Moreover, even if the population of equipment sampled is equipment that is potentially available for the Project Sponsor to use, the idea that the Project Sponsor will be able to acquire 100% of its equipment at Tier 2 or better when only 59% of the potentially available equipment is Tier 2 or higher is illogical. It is more plausible that the Project Sponsor will be able to acquire only about 59% of its equipment at Tier 2 or better.

> As stated in Mr. Gilbert's November 2, 2015, report attached as Exhibit C:
>
> Further, the statistic provided by the Lead Agency does not say that 59% of all construction equipment vehicles in CA will meet Tier 2 or better status – rather, it says that all offroad vehicles do (as of 2014). All offroad vehicles are not all construction vehicles; in fact, construction vehicles are a small subset of all offroad vehicles. Moreover, the rate of compliance for construction vehicles, particularly large, expensive, long-lived ones (scrapers, excavators, pile drivers, etc.) will be far lower than the average for all offroad vehicles that include such non-construction equipment as ground support vehicles at airports, agricultural forklifts, and myriad other offroad, nonconstruction equipment types. Because the statistic represents all offroad vehicles in CA and not construction vehicles, it cannot be used to even roughly determine the proportion of construction vehicles supposedly available to the project with Tier 2 engines, VDECs, and 40% NOx control; hence, the statistic is irrelevant to the Events Center project environmental review and does nothing to refute our concerns expressed clearly at the SDEIR review stage.

(Exhibit C, p. 11.)

B. The Response to Comment AQ-6e is Inadequate.

Mr Gilbert's July 19, 2015, letter commented that:

> Further, M-AQ-1 specifies numerous sub-part requirements (A 1 through 5) to be included in the Construction Emissions Mitigation Plan, and in each case compliance with those sub-parts is left to the "project sponsor". So, too, is compliance with the Measure's additional duties required under M-AQ-1 items B and C. This is not appropriate when considering the extent, complexity, and costs that will be incurred for effective mitigation measure compliance across the 26-month construction period; permitting the project sponsor to create, implement, report, and determine compliance with the Measure is akin to having the fox guard the henhouse and must not be allowed. As written, the measure is not enforceable due to the subjective, undefined nature of "Air Quality Specialist" who will approve the project sponsor's Construction Emissions Mitigation Plan. Further, it is unacceptable that the Measure will permit the project sponsor to determine compliance with each of the measure's components, record and report information signifying compliance, and then, under part C certify their own compliance with the Plan and its various requirements. We have inspected construction project sites, under air district contract, to determine compliance with air district-imposed construction equipment mitigations and have found uniformly poor compliance; to exemplify, at one residential subdivision project in south Sacramento County we determined that only one offroad construction vehicle out of nearly twenty were actually compliant with the mitigation requirements that had been imposed on the

> project by the Lead Agency. This is because there has traditionally been very little, if any, post-EIR follow-through to verify mitigation compliance by Lead Agencies or by the local air district after the CEQA project has been approved for development and construction has started. Knowing this, construction and development firms commonly let air quality mitigations go unmet, although records purporting to show compliance can be easily formulated and submitted post hoc in order to fulfill a paper requirement. Without an independent, qualified 3rd party contractor onsite each day to track, verify, and record emissions-and activity-related information on construction vehicles used at the project site to ensure the EIR's mitigations are implemented effectively, the project is very unlikely to produce more than a token of the emission reductions claimed in the DSEIR.

The Responses to Comments (RTC) codes this comment as "AQ-6e." (Volume 5, p. 13.13- 60.) The response to comment AQ-6e states:

> The City and OCII have successfully monitored implementation of emissions minimization requirements on numerous construction projects over the past several years. Examples of past and ongoing projects with CEMP emissions minimization requirements include Candlestick Point-Hunters Point Shipyard Phase II Development Project, which requires staged increases in the percentage of Tier 4 equipment; the Seismic Upgrade of BDPL Nos. 3 & 4 at Hayward Fault Project, which had one year of tiered engine requirements for on-road spoils hauling trucks and off-road construction equipment; and the Pacific Rod and Gun Club Upland Soil Remedial Action Project, which also had tiered engine requirements for off-road construction equipment.

(Volume 5, p. 13.13-60.)

The RTC's assertion is made without any evidentiary support. Well before the Response to Comments issued, the Alliance attempted to discover if the City or the OCII have any evidence to support the DSEIR's assumption that the Project's compliance with adopted air quality mitigation measures will be effectively monitored. In this regard, on August 13, 2015, I submitted a request to the City and OCII for:

> All records relating to monitoring or enforcement of compliance with mitigation measures adopted to reduce potentially significant air quality impacts of development projects approved by the City, the Redevelopment Agency of the City and County of San Francisco, or the Successor Agency to the Redevelopment Agency of the City and County of San Francisco, including any records reflecting audits of such compliance.

(See Exhibit D attached to this letter). In my email to the OCII and City dated September 30, 2015, I provided further definition to this request, stating:

> With respect to all construction projects in these areas for which the EIR identified significant air quality impacts from construction activities that could not be entirely avoided, the City, Redevelopment Agency, or the Successor Agency would have adopted mitigation measures to reduce the projects' significant air quality impacts and would have adopted a Mitigation Monitoring and Reporting Plan ("MMRP"). These MMRPs should have resulted in the generation of reports documenting the project's compliance, or lack thereof, with these adopted air quality impact mitigation measures. I want to obtain these reports."

(See my email exchanges between the OCII and City dated September 11 through September 30 of 2015, attached as Exhibit E.)

Despite these requests, neither OCII nor the City have produced a single record showing they have either themselves conducted monitoring of CEQA required air quality mitigation measures or have taken steps to ensure that Project Sponsors tasked with self-monitoring their own compliance have faithfully done so. The agencies' failure to produce any such records leads inescapably to the conclusion that Mr. Gilbert's observation applies to the OCII and the City, and no such records exist because no such monitoring has been done.

Once again, I hereby request that the OCII and the City produce any such records, and if such records exist, continue the OCII's hearing regarding certification of the SEIR until a date after the records are produced. If such records exist, certification of the SEIR before producing the records would deny my client a fair trial under subdivision (b) of section 1094.5 of the Code of Civil Procedure. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-3]*)

IV. Project Mitigation to Reduce Construction and Operational Emissions Is Flawed

At FEIR pg. 13.13-53 the Lead Agency rebuffs concerns that Tier 2 engines and Tier 4 engines required in the SDEIR of all 195 pieces of project-related construction equipment may not provide adequate emission reductions:

> "As a part of the implementation guidance, the City Planning Department presents the results of a statewide data summary gathered by the California Air Resources Board as part of compliance with the In-Use Off-Road Diesel Regulation. The data indicate the available construction equipment at various engine tier levels. These data indicate that in 2014 approximately 59 percent of all off-road equipment in the state were operating with Tier 2 engines or better. Given that the majority of equipment statewide is capable of complying with the conditions of Mitigation Measure M-AQ-1, it is reasonable to conclude that the measure represents feasible mitigation."

No information has been provided in the SDEIR or FEIR as evidence, other than the statistic excerpted above, that all 195 pieces of project construction equipment will be available for work at the Event Center at all times necessary during the 26‐month long construction process. Rather than contacting major construction firms expected to bid on the project to determine actual Tier 2 or better equipment availability, the Lead Agency has belatedly decided to rely on nothing more than the belatedly‐developed statistic excerpted above. In actuality, this statistic reflects serious flaws; it acts as another example of the Lead Agency's inexperience with construction vehicles and practices.

A statistical average may look good on paper but it cannot ensure provision of all 195 pieces of equipment that must meet the FEIR MM-AQ-1's Tier, VDECs, and NOx requirements---only actual, compliant equipment available for use at the project will. Why did the Lead Agency fail to conduct a survey of construction firms that could be expected to bid on Event Center work? No information is provide in the EIR that actual fleets which can be expected to work at the Events Center project are available to meet the requirements of the mitigation measure. Further, the statistic provided by the Lead Agency does not say that 59% of all construction equipment vehicles in CA will meet Tier 2 or better status--rather, it says that all ***offroad*** vehicles do (as of 2014). All offroad vehicles are not all construction vehicles; in fact, construction vehicles are a small subset of all offroad vehicles. Moreover, the rate of compliance for construction vehicles, particularly large, expensive, long-lived ones (scrapers, excavators, pile drivers, etc.) will be far lower than the average for all **offroad** vehicles that include such non-construction equipment as ground support vehicles at airports, agricultural forklifts, and myriad other offroad, non-construction equipment types. Because the statistic represents all offroad vehicles in CA and not construction vehicles, it cannot be used to even roughly determine the proportion of construction vehicles supposedly available to the project with Tier 2 engines, VDECs, and 40% NOx control; hence, the statistic is irrelevant to the Events Center project environmental review and does nothing to refute our concerns expressed clearly at the SDEIR review stage. This is a major flaw, but others are no less important.

Rather than relying solely on the FEIR's statistic to respond to public concerns of construction mitigation challenges, the construction equipment list for the project found at FEIR Vol 6, pg. 413 of 1669 should have been used by the Lead Agency for comparisons to CARB offroad construction vehicle and equipment databases, and then, more importantly, to develop a survey of construction companies capable of working on the project for their compliant equipment lists. Other CEQA projects, particularly in the Sacramento area[4], have involved detailed surveys of construction firms to determine their equipment compliance mitigation potential and availability. Just as importantly, CARB offroad regulations (as of 2011) no longer require VDECs be installed on all Tier 2 vehicles, nor

will OSHA restrictions permit such due to sight-and-visibility concerns[5]. In reality, it is a near-certainty that all 195 pieces of offroad, each required to be Tier 2 or better engines and equipped with VDECs and producing 40% NOx reduction, will be unavailable—and unattainable-- for compliance with the mitigation's requirements.

While the FEIR's offroad emissions mitigation is unlikely to meet the Tier 2 or better requirement with mandatory VDECs, it is also virtually certain to fail the mandated 40% NOx reduction required of each piece of equipment. To an even worse extent than the VDECS requirement, the mitigation measure's linked NOx decrement is not practicably obtainable since there are no CARB-approved VDECs products that will provide highly effective particulate filtering with that level of NOx destruction. While the Cleaire Longview product would produce DPM control with 25% NOx destruction, it was limited to onroad vehicles only, no CARB certifications were obtained after early 2013, and Cleaire has been out business for some time. Cleaire's offroad counterpart product, the Lonestar product, was designed to produce similar emission benefits, but was limited to certain years of rubber-tired construction vehicles only.

(We note that the construction equipment list for the Events Center project at FEIR Vol 6, pg. 413 of 1669, lists use of scrapers, excavators, and other types of construction equipment that are tracked, not rubber-tired.) The Johnson-Mathey EGRT product, capable of Level III particulate control with 40% NOx destruction has been CARB-certified for certain pre-2003 onroad trucks only. The Nett BlueMax DPF-SCR product, while producing substantial reductions of NOx and particulate, is certified only for certain-year stationary gensets. Finally, the ECS DPF catalyst with use of an aqueous diesel product will produce only Level II particulate control with 20% NOx destruction; however, the PuriNOx diesel fuel product has not been available for a number of years and thus that option is not viable.

As written, the Events Center EIR's MM-AQ-1 requires that every piece of offroad construction equipment used at the project will be mitigated with required use of Tier 2 engines equipped with VDECs and 40% NOx reduction if similarly-equipped Tier 4 and then, next, Tier 3 equipment are not available. The measure mandates without exception that every piece of equipment to be used at the Events Center project, regardless of Tier, will include VDECs that must produce a collateral 40% NOx reduction. To our knowledge, there are no VDECs products, CARB-certified for use in CA, which will provide that level of NOx destruction. Further, we stress that M-AQ-1 requires the specified level of NOx destruction on both Tier 3 and 4 engines, and thus later model engines with relatively lower NOx emissions (due to more stringent emission standards) would still need to produce the 40% NOx decrement taken against either their respective Tier 3 or Tier 4 NOx certification levels.

We have provided here a screenshot of a relevant portion of M-AQ-1 from SDEIR pg. 5.4-35:

TABLE M-AQ-1-1
OFF-ROAD EQUIPMENT COMPLIANCE STEP-DOWN SCHEDULE

Compliance Alternative	Engine Emission Standard	Emissions Control
1	Tier 4 Interim	ARB NOx VDECS (40%)[52]
2	Tier 3	ARB NOx VDECS (40%)
3	Tier 2	ARB NOx VDECS (40%)

How to use the table: If the requirements of (A)(1)(b) cannot be met, then the project sponsor would need to meet Compliance Alternative 1. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 1, then Compliance Alternative 2 would need to be met. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 2, then Compliance Alternative 3 would need to be met.

b) All off-road equipment shall have engines that meet either U.S. Environmental Protection Agency (USEPA) or California Air Resources Board (CARB) Tier 4 off-road emission standards. If engines that comply with Tier 4 off-road emission standards are not commercially available, then the project sponsor shall provide the next cleanest piece of off-road equipment as provided by the step down schedules in Table M-AQ-1-1.

As the compliance alternatives above indicate, all tiered engines must be equipped with VDECs that will provide both particulate filtering and a reduction (against the particular engine's applicable emission standard determined by year of manufacture) of NOx by 40%. While this is almost certainly unattainable, SDEIR Table 5.4-8 (Mitigated Average Daily Construction-Related Emissions) clearly shows that the project has assumed it would, and has made a related emissions reduction claim for both particulate and NOx benefits to result from the mitigation measure's Compliance Alternatives. Because the construction industry in CA does not yet have enough Tier 4 offroad vehicles to readily supply all equipment types to large projects under concurrent construction such as the Events Center project6, because Tier 2 vehicles are not required by CARB to be equipped with VDECS, and because OSHA restrictions prevents all construction vehicles from being retrofitted with VDECs, M-AQ-1's mandated application of the related components to every piece of project-related construction equipment is probably unattainable.

Further, the requirement that each Tiered level of equipment have VDECS that will provide collateral reductions of 40% NOx appears to be impossible based on the unavailability of NOx destruction technology for construction equipment and as reflected by CARB's certified-VDEC listings. Finally, other than for what has turned out to be an inapplicable statistic, we remain unable to find substantive information in the Events Center FEIR, in response to our earlier-expressed concerns regarding M-AQ-1, that proves construction fleets in CA can meet the measure's requirements and that demonstrates that certified technologies are available in CA to provide the EIR's mandated and claimed emission reductions. As written, M-AQ-1 requirements and claimed emission reductions are likely unattainable; if this is correct, the flawed measure cannot be enforced nor will it provide the emission benefits claimed in the EIR to reduce the project's impacts to less than significant levels. M-AQ-1 and related emission benefits (NOx, PM10/2.5, reduced health risks) claimed for reductions of the project's impacts must be revised, with results recirculated for public review and comment.

Footnotes:

[4] Personal conversations with SMAQMD CEQA planner Karen Huss; October, 2015

[5] See OSHSB regulation regarding exhaust retrofit visibility; http://www.arb.ca.gov/msprog/ordiesel/vdecssafety.htm

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-14]*)

Response to Late Comment AQ-2: Mitigation of Construction-related Impacts

Availability of Tier 2 or Higher Off-road Equipment (Comment O-MBA20L7-3)

With regard to the availability of off road equipment with Tier 2 or higher engines, this requirement will be incorporated into the Construction Emission Minimization Plan, which the project sponsor must submit and OCII must approve before construction commences. (See Mitigation Monitoring and Reporting Program, p. MMRP-28.) It is appropriate to assume that this measure will be carried out as approved; OCII need not speculate about the possibility that this measure will not be carried out, insofar as the requirement to carry out this measure is a binding obligation. (*Berkeley Hillside Preservation v. City of Berkeley* (2015) 60 Cal.4th 1086, 1120-1121 [agency need not engage in speculation that building design would prove to be infeasible as proposed, despite report from engineer hired by petitioners stating that design could not be built].)

Moreover, OCII concludes that sufficient numbers of Tier 2 or higher engines will be available. Since 2008, as a result of the California Air Resources Board (CARB) and the U.S. EPA's Off-road Compression-Ignition (Diesel) Engine Standards, newly manufactured off-road equipment less than 750 horsepower must have Tier 3 or better engines; since 2011

this requirement now also applies to equipment greater than 750 horsepower. Consequently, since 2008 Tier 3 or Tier 4 equipment are the only equipment available for purchase. Because OCII and the City recognize that older tiered equipment may still exist in contractors' fleets, Mitigation Measure M-AQ-1 allows Tier 2 equipment to also be used provided that Verified Diesel Emission Control Strategy (VDECS) is in place.

As stated in the RTC document, the equipment sampled is from ARB's database used to determine fleet-wide compliance with the U.S. EPA's Off-road Compression-Ignition (Diesel) Engine Standards. This database includes all applicable equipment from off-road fleets statewide, showing that 59 percent of existing (2014) off-road equipment is currently Tier 2 or better. While this stated percentage may include equipment in government fleets (contractors would represent private fleets), it is reasonable to expect that such government fleets of off-road equipment would represent a relatively small percentage of statewide equipment as most governments such as San Francisco contract out construction work so as not to have to maintain an extensive fleet.

The commenter suggests that it is only reasonable that 59 percent of construction equipment could meet the requirements of Mitigation Measure M-AQ-1. A contractor's fleet may comprise a number of pieces of equipment in the same category (e.g., 2 or more graders of the same size) that may be of different Tier levels. Mitigation Measure M-AQ-1 does not permit off road equipment greater than 25 horsepower (hp) and operating for more than 20 total hours over the entire duration of construction activities to have Tier 1 engines under any circumstances. Therefore, Mitigation Measure M-AQ-1 does not permit a contractor to utilize such equipment included within its fleet if it has a Tier 1 engine. As a result, it is expected that a contractor would preferentially deploy equipment meeting the requirements of Mitigation Measure M-AQ-1 for use on the project site. Given as noted above, Tier 3 or Tier 4 equipment are the only equipment available for purchase since 2008, the premise of commenter's argument (that a sufficient amount of Tier 2 or higher equipment is unavailable) is flawed. If such equipment were not available in the contractor's fleet, the contractor would be required to either obtain the equipment for temporary use from equipment rental companies or purchase new equipment meeting the requirements.

Furthermore, construction-related impacts of ozone precursors are anticipated to exceed significance thresholds presented in the SEIR, and this impact was determined to be significant and unavoidable with mitigation. The intent of Mitigation Measure M-AQ-1 is to implement all feasible mitigation to address this significant impact. Mitigation Measure M-AQ-2b would require the project sponsor to calculate the amount of emissions offset required based on the degree of compliance with off-road equipment types that were determined to be commercially available and the reporting requirements of Mitigation Measure M-AQ-1. If the calculated construction emissions of ozone precursors require offsets in excess of 17 tons per year, then the applicant will be required to provide the additional offset amount commensurate with the calculated ozone precursor emissions exceeding 17 tons per year.

Availability of Tier 2 or Higher Off-road Equipment and VDECS (Comment O-MBA20L7-14)

Please see discussion above with regard to the availability of off-road equipment with Tier 2 or higher engines.

As stated in the RTC document, statewide 59 percent of existing (2014) off-road equipment is currently Tier 2 or better. While this stated percentage may include non-construction equipment, as shown in Table 2, similar data are available specifically for the San Francisco Bay Area Air Basin, which would have a minimal composition of agricultural equipment. The data in Table 2 also show the distribution of engine tiers by fleet size. Contractors involved with construction of the proposed project would be expected to be owners of large construction fleets that have been subject to an accelerated implementation schedule which is reflected in the greater inventory of Tier 2, 3, and 4 equipment for large contractors.

With regard to availability of VDECS, the commenter is correct that there are currently no options available for NOx control of off-road equipment. However, it should be emphasized that construction-related impacts of ozone precursors would be a significant and unavoidable impact with mitigation as identified in the SEIR. The intent of Mitigation Measure M-AQ -1 is to mitigate construction emissions of ozone precursors to the degree feasible to address this significant impact. Mitigation Measure M-AQ-2b would require the project sponsor to calculate the amount of emissions offset required from construction, based on the reporting requirements of Mitigation Measure M-AQ-1 and the degree of compliance with off-road equipment types that were determined to be commercially available. If the calculated construction emissions of ozone precursors require offsets in excess of 17.0 tons per year, then the applicant will be required to provide the additional offset amount commensurate with the calculated ozone precursor emissions exceeding 17.0 tons per year.

Verification of Compliance with Construction Emissions Minimization Plan (CEMP)

Verifying compliance with the documentation submitted pursuant to a CEMP will be performed by designated air quality specialists at the San Francisco Planning Department (SF Planning). As stated in the RTC document, SF Planning has air quality specialists with expertise in CEQA-related air quality technical analysis, including the ability to assess the availability and quality of existing data; evaluation of air quality modeling parameters and potential air quality impacts; and development, evaluation, and monitoring of air quality mitigation measures. SF Planning air quality specialists provide an analysis of a project's potential to emit criteria air pollutants, toxic air contaminants, and greenhouse gases, as well as the potential for pollutants to adversely affect sensitive receptors. Air quality specialists are familiar with modeling programs including, but not limited to: CalEEMod, URBEMIS, EMFAC, AERMOD, and CAL3QHCR Line Source Dispersion Model and work regularly with the BAAQMD staff and staff with air quality analysis expertise at the Department of Public Health (DPH) on individual projects and in the creation of technical support documentation for the continued development of a Community Risk Reduction Program for the City.

TABLE 2
SAN FRANCISCO BAY AREA AIR BASIN ALL FLEET SIZES
(PIECES OF EQUIPMENT, ACTIVITY HOURS AND TIER LEVEL BY EQUIPMENT TYPE) – 2010

Equipment Type	Pieces of Equipment	Activity Hours	Percent of Equipment Tier 2 or Higher[a]	Percent of Activity Hours Tier 2 or Higher[a]
Tractors/Loaders/Backhoes	5,724	2,880,678	47	65
Excavators	2,279	1,237,021	58	70
Skid Steer Loaders	1,898	555,975	69	78
Rubber Tired Loaders	1,897	1,565,292	40	55
Rough Terrain Forklifts	1,464	347,490	65	70
Rollers	1,452	419,915	42	48
Crawler Tractors	1,172	456,477	33	49
Scrapers	1,065	419,812	35	47
Other Construction Equipment	785	294,772	40	54
Graders	737	365,480	27	45
Cranes	636	252,685	28	32
Off-Highway Trucks	543	616,782	43	56
Off-Highway Tractors	518	289,772	44	52
Trenchers	344	104,917	39	48
Pavers	279	92,668	41	48
Bore/Drill Rigs	211	64,043	51	79
Paving Equipment	158	61,849	47	54
Rubber Tired Dozers	129	83,816	20	29
Surfacing Equipment	87	19,717	49	59
Total	**21,377**[b]	**10,129,160**[b]	**--**	**--**

[a] This was determined by matching the engine model year shown in the In-Use Off-Road Equipment, 2011 Inventory Model for an individual piece of equipment with the horsepower bin for the USEPA/CARB PM Emission Standard (Table C-1, Appendix C).

[b] Number may not match the sum of the column due to rounding. However, the number does reflect the actual total from the Model.

PM_{10} – particulate matter less than 10 microns in size

SOURCE: California Air Resources Board, "In-Use Off-Road Equipment, 2011 Inventory Model," Query accessed online, April 2, 2012, http://www.arb.ca.gov/msei/categories.htm#inuse_or_category.

To evaluate compliance of specific equipment submitted pursuant to the CEMP, air quality specialist staff will be able to verify engine tier claims by looking up the ARB-designated Equipment Identification Number (EIN) required to be visible on all equipment in the CARB's Diesel Off-road On-line Reporting System (DOORS), which is a database of all off-road equipment statewide. As noted above, Planning staff has sufficient expertise to perform this work.

The commenter cites a single instance of observed non-compliance with air quality mitigations which occurred is Sacramento County, and not within the Bay Area Air Basin or

San Francisco. This one observation in another air basin does not demonstrate that compliance with air quality mitigations are not successfully implemented in San Francisco.

As an example of compliance submittals to SF Planning pursuant to a CEMP, **Attachment B** to this Exhibit D contains off-road equipment inventory logs submitted for a project at the Pacific Rod and Gun Club Upland Soil Remedial Action Project from May to October 2015. Tiered equipment claims on this submittal can be verified through the DOORS program on the CARB website.

Issues Raised by Late Commenters on Health Risk Assessment

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-10 O-MBA20L7-11

For the reasons set forth below, we concur with your determination that the assessment TACs in the DSEIR and FSEIR (collectively, SEIR) is inconsistent, confusing, and legally erroneous and that it fails adequately to disclose the Project's impacts. This letter incorporates by reference the November 2, 2015 letter report authored by Paul Rosenfeld and Jessie Jaeger (attached as Exhibit 1).

I. The SEIR fails to provide a project-specific assessment of TAC health risks.

The DSEIR fails to provide a project-specific assessment of TAC health risks because it does not adopt or apply a threshold of significance for the project-specific impact. The SEIR's only threshold of significance for TACs is a threshold for cumulative impacts. The SEIR's threshold would find a considerable contribution to a significant cumulative impact only if (1) there were 100 excess cancers from all sources and (2) the project itself contributed 10 excess cancers. The SEIR's approach is wrong as a matter of law because it conflates project-specific and cumulative analysis and because it assumes without justification that the only relevant threshold is the threshold for whether the project makes a considerable contribution to a significant cumulative impact.

CEQA requires that an EIR assess both project-specific and cumulative impacts. (CEQA Guideline, §§ 15126.2, 15130.) Because assessment of project-specific and assessment of cumulative impacts are a distinct obligations, they require a distinct set of thresholds of significance. Whereas a project-specific analysis requires only that an EIR compare a project's effects to a single threshold, cumulative analysis requires two thresholds because cumulative impact analysis is a two-step process. In cumulative analysis an agency must separately (1) determine whether the impacts of the project in combination with those from other projects with related impacts are cumulatively significant by comparing that total impact to a "step-one" threshold, and (2) if so, determine whether the project's own effect is a considerable contribution by comparing the project's own effect to a "step-two" threshold. (CEQA Guideline, § 15130(a); see Kostka and Zischke, *Practice Under the California Environmental Quality Act* (2nd Ed., 2011 Update), §§ 13.39. 15.52; Remy, Thomas, et al, Guide to CEQA (11th Ed., 2007), pp. 474-475.)

CEQA recognizes that the thresholds used for project-specific analysis and for the second step of cumulative analysis differ. The step-two threshold of significance in cumulative analysis is used to determine whether the project's contribution to a significant cumulative impact is "considerable," i.e., "whether 'any additional amount' of effect should be considered significant in the context of the existing cumulative effect." (*Communities for a Better Environment v. California Resources Agency* ("*CBE*") (2002) 103 Cal.App.4th 98,119.) Even if a project's impact is "individually minor" and, thus,

not found significant in a project-specific analysis, it may make a considerable contribution because it is "collectively significant." (Id. at 119-120; *Los Angeles Unified School Dist. v. City of Los Angeles* ("*LAUSD*")(1997) 58 Cal.App.4th 1019, 1025-1026.) Indeed, the step-two threshold may need to be a sliding scale because "the greater the existing environmental problems are, the lower the threshold should be for treating a project's contribution to cumulative impacts as significant." *CBE*, supra, 103 Cal.App.4th at 120. In sum, because CEQA specifically recognizes that the step-two threshold in cumulative analysis may be lower than the threshold to determine whether an impact is individually significant, there can be no routine assumption that the project-specific threshold is the same as the threshold for step-two in a cumulative analysis.

Here, the SEIR does not provide, much less justify, any threshold for a project-specific analysis. The only form of analysis was cumulative analysis, and the SEIR simply declines to consider whether the Project's TAC impacts would be individually significant.

The omission of a project-specific analysis is legally erroneous. Furthermore, there is ample evidence that the omission is prejudicial to informed decision-making and public participation. Had the EIR provided a legally adequate project-specific analysis, it may well have determined that the project's individual impacts are significant, even if there were no significant cumulative impact from all projects taken together. First, as indicated in the attached letter from Paul Rosenfeld and Jessie Jaeger, the Project causes at least 42 excess cancers in one million. This impact is four times the 10-excess cancer threshold used by the majority of California Air districts, including BAAQMD, to assess the significance of single source impacts. Indeed, the Project's excess cancers nearly double the total ambient cancer risk. Finally, regardless of the conclusion that the EIR might have reached had it provided a project-specific analysis, the EIR is insufficient as an informational document without this analysis. To correct this error, the EIR should be revised and recirculated.

II. The SEIR's assessment of cumulative TACs is invalid because it fails to include all sources of related impacts.

As set forth in the attached letter from Jessie Jaeger and Paul Rosenfeld, the SEIR fails to include foreseeable future development in its analysis of cumulative TAC health risks. In particular, the SEIR fails to include the TAC emissions from the future construction and operation of the Mission Bay area redevelopment projects. This build-out was projected in the Mission Bay EIR to generate 218,549 vehicle trips and 2,684 truck trips per day. Because the EIR projects that excess cancers will be at least 86 per one million with the existing development plus the Project, this level of additional traffic clearly has the potential to cause excess cancers to exceed the 100 excess cancer threshold identified by the EIR as the threshold for a significant cumulative impact.

Cumulative analysis must include all sources of "related impacts," including past, present, and potential future projects. (CEQA Guideline, § 15130(a)(1), (b).) The unjustified omission of related sources of TACs is an error because without this disclosure the public and decision makers cannot "determine whether such information would have revealed a more severe impact." (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 720, 724.) The future development of the rest of the Mission Bay project is clearly foreseeable because it has already been approved at the program level. The Warriors Arena Project is but one phase of the overall Mission Bay project. The California Supreme Court has held that it is error for an EIR for one phase of a project to omit impacts from future phases in its analysis of cumulative impacts. (*Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 396.) The omission of this foreseeable future development is error.

The DSEIR implies that that impacts from future development may be ignored because "[o]ther future projects, whose emissions have not been incorporated into the existing Citywide health risk modeling . . . would similarly be subject to CEQA requirements to analyze the health risk impact of their project."[1] (DSEIR, p. 4.4-28.) However, the SEIR may not tier from future environmental reviews: "CEQA's informational purpose 'is not satisfied by simply stating information will be provided in the **future**." (*Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 440-441 (emphasis in original).)

III. The SEIR's assessment of TAC health risks is inadequate because it ignores current OEHHA guidance.

Comments on the DSEIR objected that the health risk assessment fails to use the most recent OEHHA Air Toxics Hotspots Program Risk Assessment Guidelines. OEHHA has revised its daily breathing rate for children upward to 1,090 L/kg-day, almost doubling the 581 L/kg-day breathing rate from the outdated 2000 guidelines used by the DSEIR. In response, the FSEIR does not dispute the validity of the new guidance and admits that BAAQMD intends to use the revised guidance in the future, but declined to provide an assessment of health risks based on the new guidance.

Children are the most vulnerable to TAC exposure, as evidenced by the elevated excess cancer rates for children as compared to adults. (See, e.g., DSEIR, Table 5.4-11, p. 5.4-49). The area of maximum vulnerability to TAC's from the project happens to be a children's hospital.

As the attached letter from Paul Rosenfeld and Jessie Jaeger indicates, contrary to the FSEIR, OEHHA published and recommended use of higher, differential breathing rates for children well before the SEIR's health risk assessment was prepared. Rosenfeld and Jaeger demonstrate that if excess cancers were determined using the OEHHA guidance for children's breathing rate rather than the outdated 2000 guidance, the excess cancers for the maximally exposed receptors at the UCSF Benioff Children's Hospital would in fact substantially exceed the 100 excess cancer threshold used by the DSEIR to determine a significant cumulative impact. Based on the threshold of significance adopted by the SEIR, the Project would make a considerable contribution to this significant cumulative impact because the Project adds well more than 10 excess cancers to this total. Thus, the SEIR's failure to use the most recent scientific data and its failure to provide reasoned analysis in response to comments requesting this analysis results in a failure to disclose this significant cumulative impact.

Refusal to respond to responsible comments from experts regarding analytic parameters with reasoned analysis, as well as mischaracterization of the currency of those Parameter, are failures to meet CEQA's disclosure obligations. For example, a court set aside an analysis of TAC's that was based on outdated CARB guidance after comments pointed out this flaw and the final EIR declined to provide corrected analysis:

> ". . . the use in the final EIR of data extrapolated from CARB's 1991 speciation profile # 508 for measuring aircraft emission of TAC's did not meet the standard of "a good faith effort at full disclosure" required by CEQA. (Guidelines, § 15151.) " ' "[W]here comments from responsible experts or sister agencies disclose new or conflicting data or opinions that cause concern that the agency may not have fully evaluated the project and its alternatives, these comments may not simply be ignored. *There must be good faith, reasoned analysis in response*." ' " (*Cleary v. County of Stanislaus* (1981) 118 Cal.App.3d 348, 357, 173 Cal.Rptr. 390, original italics.) By using scientifically outdated information derived from the 1991 profile, we conclude the EIR was not a reasoned and good faith effort to inform decision makers and the public about the increase in TAC emissions that will occur as a consequence of the Airport expansion.

(*Berkeley Keep Jets Over the Bay Committee v. Board of Port Com'rs* (2001) 91 Cal.App.4th 1344, 1367 [111 Cal.Rptr.2d 598, 615], *as modified on denial of reh'g* (*Sept. 26, 2001*.)

Here, the EIR should be revised and recirculated to provide a health risk assessment that is based on current science regarding the parameters that determine actual risk to children.

Footnote:

[1] The DSEIR mentions Pier 70 and Seawall Lot 337/Pier 48 as examples of such future projects, and then dismisses their impacts because they are allegedly too distant to affect the same receptors. (DSEIR, p. 5.4-28). But the DSEIR ignores the Mission Bay buildout adjacent to the project.

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-10]*)

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The FSEIR fails to resolve several issues raised in comments to the DSEIR. We maintain that the SEIR's health risk assessment remains flawed for three reasons:

- The FSEIR fails to provide a project-specific health risk assessment for the Project. The thresholds of significance and the analysis in the FSEIR provide only a cumulative impact analysis. Thus, the FSEIR fails to consider whether the Project's toxic air contaminant (TAC) emissions are, by themselves, a significant impact. Although the FSEIR fails to identify a threshold of significance for project-specific effects, Project-caused excess TAC cancers are more than four times the threshold used by most California air districts to determine the significance of an individual project's impacts.
- The FSEIR fails to include all foreseeable sources of TAC emissions in its cumulative impact analysis, as it omits foreseeable future construction and operation of developments approved in the vicinity of the Project. The health risk assessment should be revised to include TAC emissions from these sources, as they could potentially result in a significant cumulative impact.
- The FSEIR fails to incorporate updated child breathing rates, set forth by OEHHA, in its health risk assessment. Even though OEHHA published these higher breathing rates for children in 2012 and recommends that TAC analyses use these rates, and even though comments
- requested that the FSEIR provide an updated analysis using these breathing rates, the FSEIR failed to do so.

Failure to Assess Individual Health Risk from Proposed Project
In our July 27, 2015 comment letter, we found that the DSEIR failed to adequately evaluate the health risk posed to nearby sensitive receptors from exposure to toxic air contaminants (TACs) emitted during Project construction and operation. We maintain that the FSEIR incorrectly relies upon criteria used to identify communities located within an Air Pollutant Exposure Zone (APEZ), as defined by Article 38 under the San Francisco Health Code, and propose that the Project's individual health risk and PM2.5 emissions be compared to the Bay Area Air Quality Management District's (BAAQMD) project-level significance thresholds of 10 in one million and 0.3 micrograms per cubic meter (μ/m^3), respectively.[1]

As we pointed out in our July 27 letter, to evaluate the cumulative and individual health risk impacts of the Project, the DSEIR relies upon criteria used to define communities located within an APEZ. The DSEIR states,

> "an APEZ [is] defined as an area in which modeled air pollution exceeds either: (1) a cancer risk of greater than 100 per one million exposed, and/or (2) PM2.5 concentrations in excess of 10 microgram per cubic meter (μg/m3) (including ambient)'" (Appendix AQ, p. 9).

Using these criteria, both the DSEIR and the FSEIR's Responses concluded that because the Project's health risk, combined with background ambient sources, would not result in sensitive receptor locations meeting the Air Pollutant Exposure Zone criteria, the Project would have a less-than-significant health risk impact (FSEIR, p. 13.13-25). The FSEIR states,

> "The project site is not within an Air Pollutant Exposure Zone and, based on citywide modeling, the highest mitigated risk at a receptor near the project site (UCSF Hospital) from the contribution of emissions from all modeled sources is an excess cancer risk of 86 per one million persons exposed with an increased risk of 44 per one million due to background ambient sources and the remainder from modeled vehicles (construction and operation) and stationary source contributions from the project. These levels are below the SEIR threshold levels for identifying when sensitive populations may be exposed to substantial pollutant concentrations." (DSEIR p. 5.4-27; FSEIR p. 13.13-26).

The APEZ 100 excess cancer threshold is a threshold for cumulative analysis, not for evaluation of project-specific impacts. CEQA requires both assessments. BAAQMD's project-specific threshold of significance of 10 excess cancers is for "single source impacts;" thus, a single source such as the

Project should be deemed to have a significant impact if it causes 10 or more excess cancers regardless of cumulative conditions.

The 10 excess cancers threshold is widely used by California Air Districts as a threshold for project-specific impacts. The California Air Pollution Control Officers Association reports that, for TACS, "[f]or the majority of the air districts the excess cancer risk significance threshold is set at 10 in a million."[2] For example, the San Luis Obispo Air Pollution Control District finds that individual projects that generate over 10 excess TAC cancers have significant impacts.[3]

We maintain that the FSEIR's application of APEZ criteria to ignore the significance of project-specific impacts fails to disclose that the Project will expose sensitive populations to substantial pollutant concentrations, as discussed below.

Since the Project is not proposing to construct residential land uses on-site, it will not expose new on-site sensitive receptors to substantial air pollutant concentrations. There are, however, off-site sensitive receptors within the Project vicinity that could be potentially exposed to pollutants emitted by the Project. Sensitive receptor locations located within 1,000 feet of the Project site include: the UCSF Hearst Tower, the Madrone Mission Bay Residential Towers, and the UCSF Hospital (see table below) (p. 5.4-17).

TABLE 5.4-5
SENSITIVE RECEPTORS IN THE PROJECT SITE VICINITY

Receptor Type	Distance and Direction from the Project Site
Residential: UCSF Mission Bay Housing (Hearst Tower), Block 22	200 feet northwest
Residential: Madrone Mission Bay Residential Towers	800 feet to the north, on Mission Bay Boulevard North
Hospital: UCSF Benioff Children's Hospital facility at Mission Bay, plus the UCSF Betty Irene Moore Women's Hospital and the UCSF Bakar Cancer Hospital	300 feet southwest

Additionally, the DSEIR assessed the risk posed to the UCSF Mission Bay day care facility, located approximately 1,300 feet to the west (p. 5.4-16). Of the sensitive receptor locations evaluated in the DSEIR, a child resident at the UCSF Hospital was found to be the most affected by the Project. As pointed out in the FSEIR Responses, the maximally exposed sensitive receptor location had an estimated background ambient risk of approximately 44 in one million (p. 13.13-26). Mitigated emissions from Project operation and construction at that location would increase this risk to approximately 86 in one million excess cancers (see table below) (Volume 3, pp. 1225).

Lifetime Excess Cancer Risk at off-site Receptors

Source	Excess Cancer Risk (in one million)			
	UCSF Hearst Tower		UCSF Hospital Receptor	Uber/ARE Receptor
	Child Resident	Adult Resident	Child Resident	Daycare Child
Background at the maximally impacted receptor	26	26	44	20
Uncontrolled Construction Contribution	54	2.8	28	73
Controlled (Tier 2 + NOx VDECS) Construction Contribution	9.2	0.48	4.8	12.5
Project Operations – Generators	30	30	30	30
Project Operations – Mobile Sources	7.2	7.2	7.2	7.2
Cumulative Total (Uncontrolled/with Mitigation)	117/ 72	66/ 64	109/ 86	131/ 70
Significance Threshold	100	100	100	100
Significant (Uncontrolled/with Mitigation)?	Yes/ No	No/ No	Yes/ No	Yes/ No

The Project's emissions, alone, nearly double the health risk posed to a child resident at this sensitive receptor location. Similarly, the Project increases the total risk posed to a child resident at the UCSF Hearst Tower sensitive receptor location by a factor of 2.8, increases the total risk posed to an adult resident at the UCSF Hearst Tower location by a factor of 2.5, and increases the total risk posed to a daycare child at the Uber/ARE location by a factor of 3.5 (see table below). The Project's

excess cancers are well in excess of the 10 in one million threshold used by BAAQMD and most California Air districts to determine the significance of an individual project's impact.

Sensitive Receptor	Background Risk	Project Risk	Total Risk	Factor by which Risk Increases Due to Project
	Excess Cancers in One Million			*Total Risk/Background Risk*
UCSF Hearst Tower Child Resident	26	46	72	2.8
UCSF Hearst Tower Adult Resident	26	38	64	2.5
UCSF Hospital Child Resident	44	42	86	2.0
Uber/ARE Daycare Child	20	50	70	3.5

The fact that the FSEIR concludes that the Project would not expose sensitive populations to "substantial pollutant concentrations," even though the Project's contributions are equal to or greater than the background health risk at every sensitive receptor location is absolutely absurd. Simply because the Project "would not result in sensitive receptor locations meeting the Air Pollutant Exposure Zone criteria" does not mean that the Project will have a less-than-significant health risk impact, and the FSEIR is wrong to make such a ridiculous assumption (p. 13.13-25). The fundament problem is that the FSEIR entirely fails to consider whether the Project's own TAC impact is a significant impact regardless of the cumulative context.

Cumulative Impact Analysis Fails to Account for All Past, Present and Future Sources

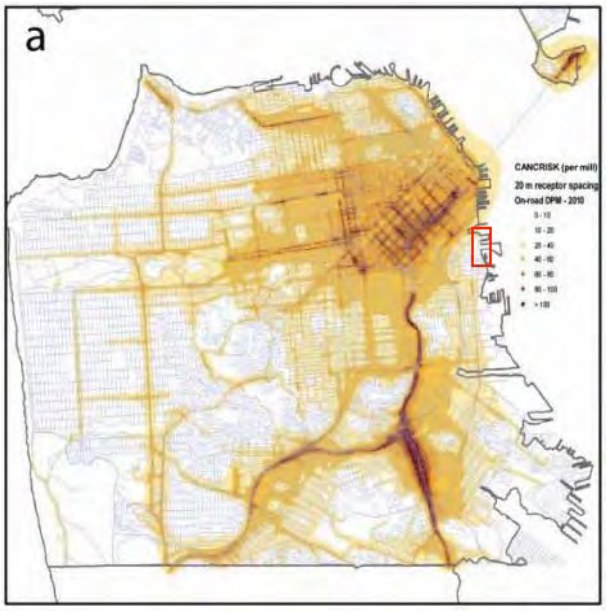
The DSEIR utilizes background ambient risk values from a local-scale citywide modeling effort conducted in 2012, and then combines the Project's health risk to this background risk to determine whether or not the Project would have a cumulatively considerable impact. Using this method, the DSEIR concludes that with mitigation, the Project would have a less-than-significant cumulative health risk impact (p. 5.4- 49). This determination, however, is based on a flawed analysis that fails to account for "all past, present, and foreseeable future sources."[4] As a result, the Project's cumulative health risk impact is greatly underestimated.

As previously stated, the ambient background health risk values, relied upon by the DSEIR, were derived from a city wide modeling effort. The methods used and specific emission sources included in this model can be found in The San Francisco Community Risk Reduction Plan: Technical Support Documentation.[5] According to this report, direct emissions from on-road mobile sources on freeways and streets with traffic volumes of more than 1,000 vehicles per day, permitted stationary sources, Caltrain passenger diesel locomotives, ships and harbor craft, local transit buses, and major construction projects in 2010 and 2025 were modeled. Emissions from indirect sources that generate vehicle trips such as distribution centers, retail centers, and postal service stations were not included in the model because they "were judged to be less important than similar sources that are included, such as the case of indirect sources (whose contribution is small compared to freeway and street traffic)…"[6]

While contributions from indirect sources may be negligible when compared to emissions from freeways and major streets, they could present a significant impact relative to local emissions near the Project site for several reasons.

First, the Project site is not located near any major freeways or streets that meet the above criteria; therefore, local impacts from mobile-source emissions within the Project vicinity were not accounted for. This statement is supported by data presented in The San Francisco Community Risk Reduction Plan: Technical Support Documentation. As evident from the figure below, excess cancer risks from direct on-road mobile emissions in 2010 within the Project area were not accounted for, as the entire area is white.[7]

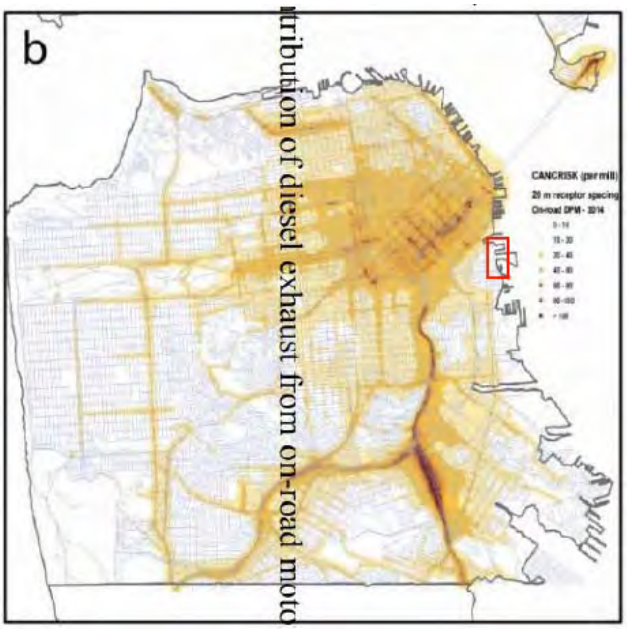
2010 Cancer risk from **diesel exhaust** emitted by on-road vehicles



2010 Cancer risk from **total organic gases** emitted by on-road vehicles

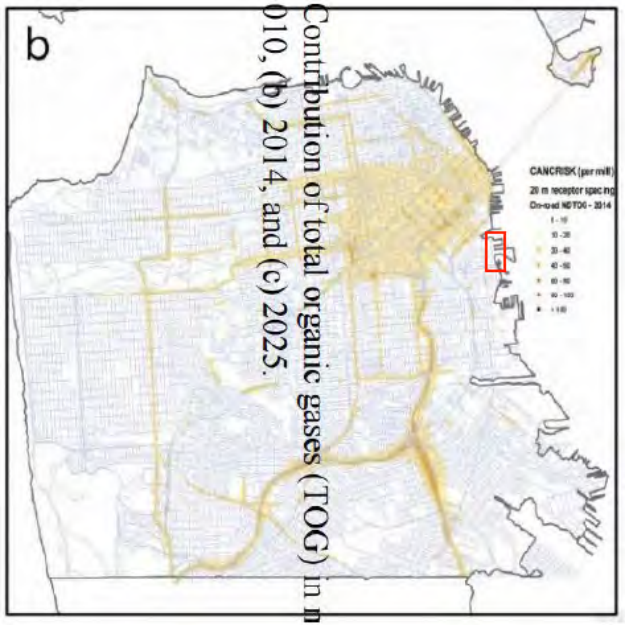
Similarly, figures for projected cancer risks from on-road mobile emissions in 2014 and 2025 demonstrate that these sources were not considered for future years (see figures below).

2014 Cancer risk from **diesel exhaust** emitted by on-road vehicles



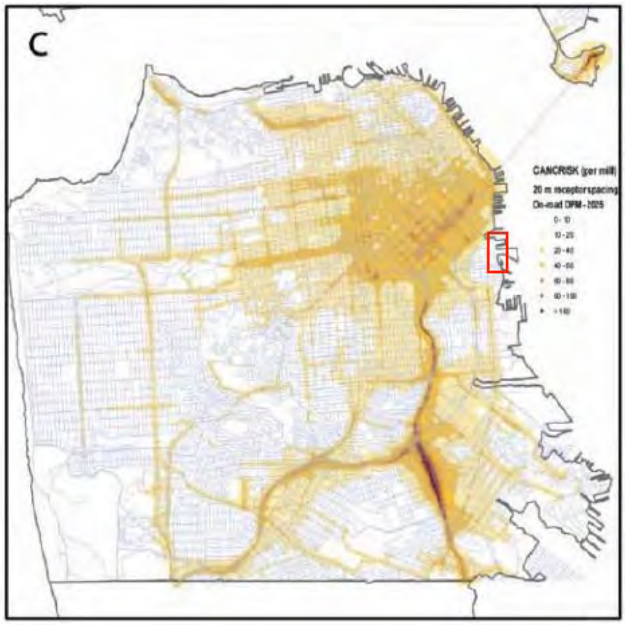
tribution of diesel exhaust from on-road moto

2014 Cancer risk from **total organic gases** emitted by on-road vehicles

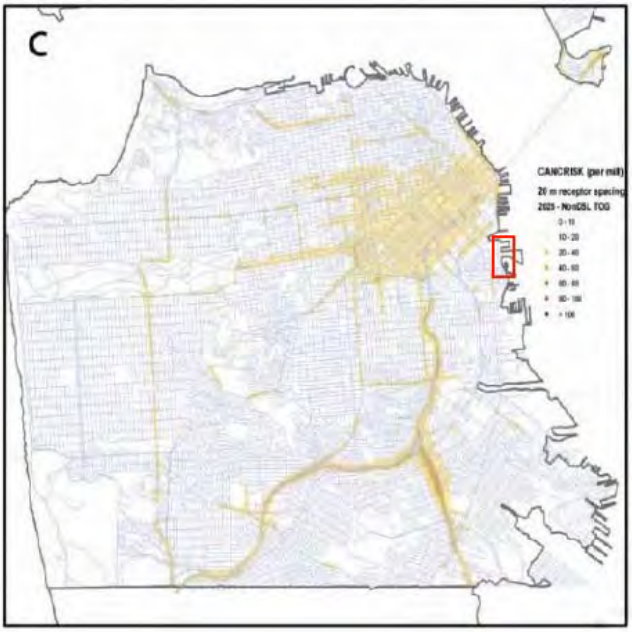


Contribution of total organic gases (TOG) in
010, (b) 2014, and (c) 2025.

2025 Cancer risk from diesel exhaust emitted by on-road vehicles



2025 Cancer risk from **total organic gases** emitted by on-road vehicles



Second, major developments within the Project area were under construction at time of modeling. These new developments are anticipated to generate a significant number of vehicle trips, thus increasing the amount of diesel particulate matter (DPM) and TAC emissions nearby sensitive receptors would be exposed to.

The DSEIR recognizes that emissions from all "foreseeable future sources" were not accounted for when evaluating the Project's cumulative health risk impact. The DSEIR states,

> "The HRA takes into account the cumulative contribution of localized health risks to sensitive receptors from sources included in the Citywide modeling plus the proposed project's sources. Other future projects, whose emissions have not been incorporated into the existing Citywide

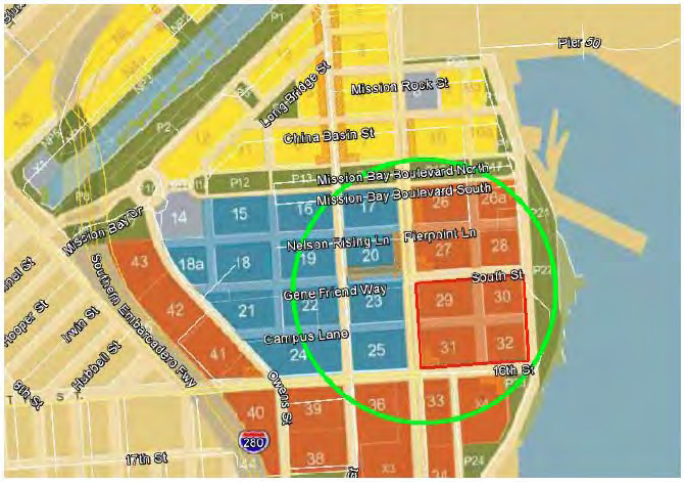
health risk modeling, such as Pier 70 and Seawall Lot 337/Pier 48 would similarly be subject to CEQA requirements to analyze the health risk impact of their project. However, health risk impacts are localized, and health risks from sources decrease substantially with increasing distance. Thus cumulative impacts from the Pier 70 and Seawall Lot 337/Pier 48 would not combine with the proposed project's emissions to substantially increase health risks within the project vicinity. Thus, because the project-level analysis includes health risks from all known existing sources, the project-level analysis is also a cumulative health risk analysis" (p. 5.4-28).

While the two projects discussed in the DSEIR would not necessarily contribute to the local health risk impact, there are many other projects located within the Project vicinity that could contribute to localized health risks. The proposed Project is one of many developments included in the Mission Bay Redevelopment Area (see figure below).[8]

According to the Mission Bay EIR, at buildout, the proposed developments are anticipated to generate approximately 218,549 vehicle trips per day, and approximately 2,684 truck trips per day (see table below).[9]

Project Land Use	Daily Vehicle Trips	Annual Vehicle Trips	Daily Truck Trips	Annual Truck Trips
Mission Bay North	73,710	26,904,150	674	246,010
Mission Bay South	144,839	52,866,235	2,010	733,650
Total Project	**218,549**	**79,770,385**	**2,684**	**979,660**

Once construction of the proposed Mission Bay developments are completed, the DPM and TAC emissions from operational mobile-sources alone could result in a potentially significant impact on local health risk. The health risk conducted in the DSEIR failed to account for these additional "foreseeable future sources," and as a result, the Project's cumulative health risk impact is underestimated. It should be noted that the proposed developments encompass approximately 300 acres of land. As is demonstrated in the figure below, a significant portion of the proposed developments are within 1,000 feet of the Project site.

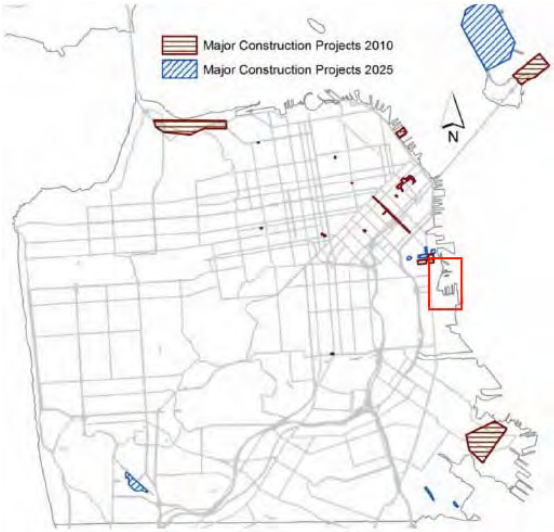


Therefore, the indirect vehicle emissions generated by the portion of developments located within 1,000 feet could still significantly contribute to the local cancer risk. When impacts from these sources are accounted for, the mitigated health risk at the UCSF Hospital of 86 in one million could substantially increase, potentially to a level in exceedance of the 100 in one million threshold.

Finally, construction emissions from major developments within the area, while analyzed, were not included in the citywide model. Modeled background ambient cancer risk relied upon by the DSEIR does account for major construction projects approved at time of modeling, including ones at Mission Bay. However, the analysis conducted was extremely limited, and the results of this analysis were not included in the total citywide model. The San Francisco Community Risk Reduction Plan: Technical Support Documentation report states,

> "No emission estimates were made for project year 2014. Emissions were estimated to represent the phase of construction expected to occur over the course of the modeling year and are not meant to encompass the entire project construction. Only exhaust emissions from construction equipment were included in the inventory; the analysis did not quantify emissions from fugitive dust or road dust. Health risk estimated from the emissions of construction projects are for informational purposes only and were not included in the city-wide assessment."[10]

As is evident from the figure below, there are major construction projects underway in 2010 within the vicinity of the Project, and major construction projects anticipated to occur in 2025.[11]



By failing to account for the additional impacts from these local sources, the cumulative health risk impact at the Project site is greatly underestimated.

Failure to Utilize Values from Updated Health Risk Assessment Guidelines

In February 2015, the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) released updated health risk assessment guidelines that require risk calculations for specific age groupings.[12] The FSEIR fails to incorporate recommended age specific inhalation rates set forth in this updated guidance document, arguing that "air districts do not always adopt OEHHA methodologies verbatim or immediately" (p. 13.13-50, 13.13-51). While this may be true, OEHHA is the regulatory agency responsible for determining what default values should be used within a health risk, and until the Air District updates its health risk guidance to reflect OEHHA's proposed updates, recommendations set forth by OEHHA should be used. Furthermore, these age-specific breathing rates were formally adopted and implemented prior to adoption of this most recent guidance (March 2015), contrary to what the FSEIR suggests. Due to these reasons, prior to certification of the FSEIR, an updated health risk assessment should be prepared to include these updated values.

OEHHA was tasked with to developing guidelines for conducting health risk assessments under the Air Toxics Hot Spots Program (Health and Safety Code Section 43360(b)(2)). OEHHA initially developed Technical Support Documents (TSDs) in 1999-2000 in response to this statutory requirement. Since 2000, they have revised and adopted TSDs in an effort to present updated methodologies that reflect scientific knowledge and techniques developed since the previous guidelines were prepared; in particular, to explicitly include consideration of possible differential effects on the health of infants, children and other sensitive subpopulations, in accordance with the mandate of the Children's Environmental Health Protection Act (Senate Bill 25, Escutia, Chapter 731, Statutes of 1999, Health and Safety Code Sections 39669.5 et seq.).[13]

Updated breathing rates for children and infants were adopted by OEHHA more than two years prior to the time the FSEIR's health risk assessment was conducted. In August of 2012, OEHHA formally adopted the *Technical Support Document for Exposure Assessment and Stochastic Analysis*.[14] Chapter three of this document discusses "age-specific breathing rates for use in health risk assessments for short-term exposure…and for long-term daily average exposures resulting from continuous or repeated 8-hour exposure."[15] OEHHA recommends the long-term daily breathing rates in Table 3.1 of this document (see excerpt below).

Table 3.1. Recommended Point Estimates for Long-Term Daily Breathing Rates

	3rd Trimester	0<2 years	2<9 years	2<16 years	16<30 years	16<70 years
	L/kg-day					
Mean	225	658	535	452	210	185
95th Percentile	361	1090	861	745	335	290
	m^3/day					
Mean	15.3	6.2	10.7	13.3	15.0	13.9
95th Percentile	23.4	11.2	16.4	22.6	23.5	22.9

Therefore, to provide an appropriate analysis of the health effects on children, the 95th percentile breathing rates for children should have been applied at the time the analysis was conducted, and should be applied now in an updated health risk assessment in an effort to determine the potential cancer risk posed to children and infants residing near the Project site.

The DSEIR utilizes a breathing rate of 581 L/kg-day for children at each sensitive receptor location, and uses a breathing rate of 302 L/kg-day for an adult resident (see table below) (Appendix AQ, Table 6.1-7).

Exposure Parameter	Units	Construction			
		Child Resident	Adult Resident	Hospital Child	Daycare Child
Daily Breathing Rate (DBR)[1]	[L/kg-day]	581	302	581	581
Exposure Time (ET)[2]	[hours/24 hours]	24	24	24	11
Exposure Frequency (EF)[3]	[days/year]	350	350	365	253
Exposure Duration (ED)[4]	[years]	2.0	2.0	1.0	0.67
Averaging Time (AT)	[days]	25,550	25,550	25,550	25,550
Intake Factor, Inhalation (IF_{inh})	[m^3/kg-day]	0.016	0.0083	0.0083	0.0018
Cancer Risk Adjustment Factor[5]	[-]	10	1.0	10	10
Modeling Adjustment Factor[6]	[-]	N/A	N/A	N/A	3.15

In an effort to demonstrate how greatly the breathing rates affect the overall health risk posed to each sensitive receptor, we conducted a simple analysis where we kept every health risk parameter the same, and only changed the breathing rates between the two assessments. Using the DSEIR's child breathing rate of 581 L/kg-day, and assuming that each receptor would be exposed to an ambient air concentration of 0.5 µg/m3 for two years, we estimated a child resident cancer risk of 88 in one million (see table below).

Parameter	Description	Units	Child
Cair	Concentration	µg/m^3	0.5
DBR	Daily breathing rate	L/kg-day	581
EF	Exposure Frequency	days/year	350
ED	Exposure Duration	years	2
AT	Averaging Time	days	25550
	Inhaled Dose	(mg/kg-day)	8.17E-06
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1
ASF	Age Sensitivity Factor	-	10
		Cancer Risk (in one million)	**88**

When OEHHA's updated breathing rate of 1,090 L/kg-day is used, we estimate a child resident cancer risk of 164 in one million (see table below).

Parameter	Description	Units	Child
Cair	Concentration	µg/m^3	0.5
DBR	Daily breathing rate	L/kg-day	1090
EF	Exposure Frequency	days/year	350
ED	Exposure Duration	years	2
AT	Averaging Time	days	25550
	Inhaled Dose	(mg/kg-day)	8.17E-06
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1
ASF	Age Sensitivity Factor	-	10
		Cancer Risk (in one million)	**164**

This simple analysis demonstrates that when the updated breathing rate for a child receptor is utilized, the cancer risk is nearly doubled.

It is particularly critical that the analysis consider the actual impacts of TACs on child receptors based on their actual breathing rates because the maximally exposed receptors near the Project site are children, including children at the UCSF Benioff Children's Hospital.

Conclusion

The FSEIR remains inadequate as an assessment of the health risks from the Project's TAC emissions, both by itself and cumulatively in combination with other TAC sources. It should be revised to provide a project-specific analysis, to provide a cumulative analysis that includes all foreseeable future projects, and to assess TAC impacts to children based on current science and OEHHA guidance.

Footnotes:

1 "California Environmental Quality Act Air Quality Guidelines." BAAQMD, May 2011, *available at*: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx, p. 5-3

[2] "Health Risk Assessments for Proposed Land Use Projects," California Air Pollution Control Officers Association 2009, page 11, available at: http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf.
[3] CEQA Air Quality Handbook, A Guide for Assessing the Air Quality Impacts for Projects Subject to CEQA Review, San Luis Obispo Air Pollution Control District 2012, *available at*: http://www.slocleanair.org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20Sept%20201 5%29.pdf.
[4] "California Environmental Quality Act Air Quality Guidelines." BAAQMD, May 2011, *available at*: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx, p. 2-5
[5] "The San Francisco Community Risk Reduction Plan: Technical Support Documentation." BAAQMD, December 2012, *available at*: http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Finding s_v9.pdf
[6] "The San Francisco Community Risk Reduction Plan: Technical Support Documentation." BAAQMD, December 2012, *available at*: http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Finding s_v9.pdf, p. 4
[7] "The San Francisco Community Risk Reduction Plan: Technical Support Documentation." BAAQMD, December 2012, *available at*: http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Finding s_v9.pdf, p. 40, 42
[8] Mission Bay Land Use Plan, November 2005, *available at*: http://sfocii.org/Modules/ShowDocument.aspx?documentid=783
[9] "Final Mission Bay Subsequent Environmental Impact Report." San Francisco Planning Department, September 17, 1998, available at: http://www.sfocii.org/index.aspx?page=61
[10] "The San Francisco Community Risk Reduction Plan: Technical Support Documentation." BAAQMD, December 2012, *available at*: http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Finding s_v9.pdf, p. 23.
[11] "The San Francisco Community Risk Reduction Plan: Technical Support Documentation." BAAQMD, December 2012, *available at*: http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Finding s_v9.pdf, p. 34
[12] Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessment." Office of Environmental Health Hazard Assessment, February 2015, *available at*: http://oehha.ca.gov/air/hot_spots/hotspots2015.html
[13] Adoption of the Revised Air Toxics Hot Spots Program Technical Support Document for Cancer Potency Factors, Office of Environmental Health Hazard Assessment, June 1, 2009, *available at*: http://www.oehha.ca.gov/air/hot_spots/tsd052909.html
[14] doption of the Revised Air Toxics Hot Spots Program Risk Assessment Guidelines: Revised Technical Support Document for Exposure Assessment and Stochastic Analysis, Office of Environmental Health Hazard Assessment, August 27,2012, *available at*: http://www.oehha.ca.gov/air/hot_spots/tsd082712.html
[15] http://www.oehha.ca.gov/air/hot_spots/pdf/2012tsd/Chapter3_2012.pdf p. 3-1

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-11]*)

Response to Late Comment AQ-3: Health Risk Assessment

Health Risk Significance Threshold

The comments state that the BAAQMD recommended threshold for individual projects (10 per one million) was ignored. As explained in Response AQ-1c of Chapter 13, Section 13.13 of the RTC document, a lead agency has discretion to determine the appropriate threshold of significance to evaluate the severity of a particular impact. OCII has selected a threshold that SF Planning applies to all projects in San Francisco, a threshold that relies on the San Francisco City-Wide Health Risk Assessment (HRA), which was conducted by the BAAQMD and the San Francisco Department of Public Health. This threshold incorporates risk estimates on a detailed and local level. RTC Response AQ-1c cites case law that a lead agency is not required to adopt the same threshold as other agencies. In fact, the threshold selected by OCII reflects the BAAQMD thresholds of significance and is based on a City-wide risk assessment that the BAAQMD themselves completed. The project site conditions are such that a single-source threshold did not apply in this instance as explained in RTC Response AQ-1c.

The commenter's citation and inclusion of the San Luis Obispo Air Pollution Control District construction risk threshold of 10 in one million is noted. In contrast, some air districts, such as the San Joaquin Valley APCD, do not have a construction risk threshold at all. The relevant threshold for this project is that selected by OCII, which is applied to all projects in San Francisco, and is described above.

A project-specific threshold may be appropriate in those areas where overall excess cancer risks have not been determined. Where this information is unavailable, it may be appropriate to adopt a threshold focusing on the cancer risk associated with an individual project. In this instance, however, a City-wide HRA is available. The appropriate focus is therefore whether TAC emissions from this project, in combination with those shown in the City-wide HRA, exceed the threshold of 100 in one million. Under such circumstances, OCII has discretion to evaluate the project's TAC emissions in the context of cumulative excess cancer risk. (Se *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal.App.4th 899, 932-934 [upholding reliance on air district guidance that recommended against separate analysis of project-specific and cumulative emissions].)

Project-specific Health Risk Assessment

The comments refer to an out-of-date analysis that was presented in the Draft SEIR, reflecting a project contribution to cancer risk of 42 in one million, which has since been refined in the RTC document. RTC document, Chapter 12, Project Refinements and New Variant, describes these refinements. An updated and more refined risk analysis was performed as a result of availability of information on specific locations of the proposed generators. Consequently, rather than relying on a screening level analysis that assumed the maximum possible risk from permitted sources (the proposed generators), it now became possible to include the diesel particulate emissions from the generators in the dispersion model and accurately and conservatively predict the resultant risks inclusive of generator emissions.

Table 6.1-8 of RTC Chapter 14, Draft SEIR Revisions, Section AQ2 Supplemental Air Quality Supporting Information, presents the updated risk analysis that shows that at that receptor, which is the Maximally Exposed Individual Sensitive Receptor (MEISR), the construction plus project contribution to lifetime incremental excess cancer risk (not "excess cancers" as the commenter mistakenly states) is 12 in one million. As described above, OCII has elected to use the cumulative health risk threshold of 100 in one million as the appropriate standard of significance for this project. It should be noted, though, that the project operational incremental cancer risk of 7.3 in one million at the MEISR is below the BAAQMD single-source threshold of 10 in one million, as is the project construction incremental cancer risk after mitigation at the MEISR of 4.9 in one million.

In Comment O-MBA20L7-11, SWAPE presents a table with its calculation of the "Factor by which Risk Increases Due to Project." These calculations are based on the analysis in the Draft SEIR. As noted above, the appropriate figures are presented in Table 6.1-8 of RTC Chapter 14, Draft SEIR Revisions, Section AQ2 Supplemental Air Quality Supporting Information. Using this updated information, the maximum Factor by which Risk Increases

Due to Project is 2.0, as shown in the table below, and at the MSEIR the Factor by which Risk Increases Due to Project is 1.3. In any event, the Factor by which Risk Increases Due to Project is irrelevant to the significance determination because all cumulative risks are well below the 100 in a million threshold adopted by San Francisco, as described above.

Sensitive Receptor	Background Risk	Project Risk	Total Risk	Factor by which Risk Increases Due to Project
	Excess Cancer Risk in One Million			*Total Risk/Background Risk*
UCSF Hearst Tower Child Resident	26	18	44	1.7
UCSF Hearst Tower Adult Resident	26	7.9	34	1.3
UCSF Hospital Child Resident	44	12	56	1.3
Uber/ARE Daycare Child	20	20	40	2.0

The comment also suggests the analysis for TAC health risk is inadequate, citing *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98,119, and *Los Angeles Unified School Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1025-1026. As noted in the comment, those cases explain that a cumulative impact analysis is used to determine whether a project's contribution to a significant impact would be cumulatively considerable and that the significance of a cumulative impact depends on the environmental setting in which it occurs. As explained above, the methodology used in the SEIR satisfies these requirements.

Cumulative TAC Health Effects

The comments express concern that the health risk impacts estimated in the SEIR may be underestimated because the analysis did not include foreseeable future development in the analysis of cumulative TAC health effects. Future development, including development in the Mission Bay Redevelopment Plan area, is included in SF Planning's City-wide HRA, which provides City-wide health risk assessments for 2025 and 2040. The complete Mission Bay Redevelopment Plan area growth is included at the program level in the City-wide HRA.[7]

The comment correctly notes that a cumulative analysis must include past, present, and probable future projects producing related or cumulative impacts, citing *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 720, 724.

The comments express further concern that because the images in the City-wide HRA Technical Support Documentation do not show color shading over the project area, certain activities such as on-road mobile sources were not included in the background risk assessment. On the contrary, the City-wide HRA database includes health risk from the on-road mobile sources. The analysis in the RTC document incorporates the City-wide HRA database and as

[7] Bay Area Air Quality Management District, San Francisco Department of Public Health, and San Francisco Planning Department, *The San Francisco Community Risk Reduction Plan: Technical Support Documentation*, December 2012, page 24. Available online at ftp.baaqmd.gov/pub/CARE/SFCRRP/ SF_CRRP_Methods_ and_Findings _v9.pdf Accessed November 23, 2015

such includes all background sources of risk including on-road traffic. The lack of shading indicates the relative lower risks than that of the shaded areas.

Future construction projects such as those mentioned by SWAPE are either consistent with the specific plans in which they are located and for which environmental review is completed? or will undertake their own environmental review. At this time, it would be speculative to estimate impacts due to construction slated for 2025 or even within the next five years, as detailed emissions and activity inventories are not yet available.

The comment's citation to *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 396 (*Laurel Heights I*), is misplaced. In *Laurel Heights I*, the court held that an EIR's project description failed to include future phases of the project, and by doing so, improperly segmented or "piecemealed" the analysis of a single project into smaller parts. Here, the Draft SEIR analyzes all parts of the project, and the comment does not suggest otherwise. Further, as noted in the comment, all parts of the Mission Bay Plan were properly analyzed in previous program EIRs. Therefore, *Laurel Heights I*, is inapplicable.

The Draft SEIR does not ignore impacts from reasonably foreseeable future development. As explained in the Draft SEIR, the HRA takes into account the cumulative contribution of localized health risks to sensitive receptors from sources included in the Citywide modeling plus the proposed project's sources. That modeling encompassed build-out of adopted plans, including the Mission Bay Redevelopment Plan. (Draft SEIR, pp. 5.4-56.) Although the Draft SEIR notes that other future projects, whose emissions have not been incorporated into the existing Citywide health risk modeling, such as Pier 70 and Seawall Lot 337/Pier 48, would be subject to CEQA requirements to analyze the health risk impact, it does not rely on any future studies for those projects. Rather, the Draft SEIR explains that health risk impacts are localized, and health risks from sources decrease substantially with increasing distance. Thus cumulative impacts from the Pier 70 and Seawall Lot 337/Pier 48 would not combine with the proposed project's emissions to substantially increase health risks within the project vicinity. Because those projects would not result in cumulatively significant impacts when combined with the impacts of the project, they did not need to be included in the cumulative impacts analysis. (See CEQA Guidelines, § 15130, subd. (b) [cumulative impacts analysis should "focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact"].) Therefore, the comment's reliance on *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412, is misplaced.

Use of OEHHA Guidance

The commenters cite 2015 OEHHA guidance regarding health risk assessments for AB 2588 Hot Spots analysis and suggest that the guidance should be followed in the SEIR. As described in Response AQ-5 in Chapter 13, Section 13.13 of the RTC document, air districts do not always adopt OEHHA methodologies verbatim or immediately; rather, the lead agency and the air district may each select the appropriate impact assessment techniques.

The 2015 OEHHA guidance, while relevant to CEQA, is designed specifically for Hot Spots Risk Assessments under AB 2588.

In this case, the BAAQMD adopted some parts of the 2015 OEHHA guidance early, namely the use of Age Sensitivity Factors. The Age Sensitivity Factors acknowledge and account for the heightened health effects of toxic air contaminant concentrations on younger children relative to adults.

The health risk analysis in the SEIR applies features of the 2015 OEHHA guidance cited by SWAPE, such as the application of the Age Sensitivity Factor, but does not use the 95th percentile of breathing rates by age category. This is consistent with current BAAQMD guidance and acknowledges the special characteristics of exposure in children.

The current circumstances are not analogous to those that existed in *Berkeley Keep Jets over the Bay Committee v. Board of Port Commissioners* (2001) 91 Cal.App.4th 1344. In that case, the EIR for an airport expansion plan stated that the public health impact of certain emissions was unknown, and that there was no standard for evaluating the risk associated with those emissions. The record showed, however, that the lead agency had been provided with "[v]oluminous documentary evidence" showing that an approved and standardized protocol that would enable the agency to conduct a health risk assessment did exist. The court held the agency violated CEQA because it had not analyzed health risks, despite readily available methods for doing so. (*Id.* at pp. 1368-1370.) In this case, the SEIR includes an analysis of health risks associated with TACs, including those TACs cited by the commenter. Nor does the SEIR deny the existence of the 2015 OEHHA guidance, or mischaracterize its contents. Rather, as explained above, the SEIR incorporates those aspects of the 2015 OEHHA guidance that have been incorporated into BAAQMD guidance. In short, the SEIR estimates risks associated with TAC emissions; those emissions have not been ignored.

Issues Raised by Late Commenters on Air Quality Significance Thresholds

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-12

II. BAAQMD's NSR-Derived Thresholds of Significance Used by the Lead Agency Continue to Under-Represent Project Emissions Significance

In our comments submitted previously on the DSEIR, we noted that the BAAQMD's CEQA thresholds of significance, applied by the Lead Agency to evaluate the Event Center project's emission impacts, were developed non-scientifically from NSR values that were designed to counterbalance anticipated growth in stationary source facility emissions under the jurisdiction of the BAAQMD. An inherent problem with using NSR emission thresholds for constructing CEQA thresholds is that the 9-county air basin's stationary sources represent no more than a small percentage of the total emissions inventory.

Vehicle emissions within the basin, by contrast, represent the lion's share of criteria pollutants and are chiefly responsible for the basin's ozone nonattainment designations that stretch back decades. Similarly, the region's nonattainment of particulate standards has been heavily influenced by vehicle emissions. To exemplify, fully 84% of NOx (ozone precursor) emissions in the Bay Area air basin are emitted by vehicles[1], and not by stationary sources. The region has been designated nonattainment for PM2.5; fine particulate is generated almost entirely by combustion (including internal combustion occurring in vehicle engines), and monitored values in the region continue to climb annually; 28% of the total inventory is attributed to vehicles. Importantly, population (people) regionally continues its historical growth in lockstep with numbers of vehicles and vehicle-miles-traveled; despite substantial advances in technical on-vehicle controls and reductions in tailpipe emissions of both NOx and particulates over the years, the region continues to exceed federal and state air quality standards.

As we noted previously, establishing CEQA thresholds of significance levels using NSR levels is to automatically undercut emission reductions that should be obtained from each new "indirect source" (such as the Event Center that will attract new vehicle trips and related emissions) subject to CEQA review. By using outdated, non-scientifically designed NSR values, CEQA thresholds adopted by BAAQMD and borrowed for use by OCII will automatically underrepresent air emission significance, particularly when evaluated against past nonattainment designations and PM2.5 ambient air monitoring values that, despite recession effects, continue to reflect a slowly worsening trend line.

At FEIR pg. 13.13-15, the Lead Agency states that ozone levels have declined 17% over the last 20 years, despite increases in VMT and vehicle population numbers. The implicit rationale here is that improvements in regional ozone numbers reflect validly-set CEQA threshold values and are to answer for some of that gain, yet this is not true. No evidence is provided by the Lead Agency to show that ambient air ozone monitoring data to support the 17% figure is linked causally to the levels at which the CEQA thresholds, based on under-representative NSR thresholds have been set for NOx and ROG precursor pollutants. Real reductions in NOx emissions over the last 20 years attributable by use of the District's CEQA NOx threshold on land use cases will represent, at mostly, only a tiny sliver of the total improvement picture if it represents any all. What answers for that 17% improvement statistic is not the District's CEQA thresholds that were set on the under-representative NSR lbs/day values, but the extraordinary reductions availed by increasingly stringent tailpipe standards invoked at the state and federal levels over the last five decades.

NOx and ROG are ozone precursors, and vehicle emissions controls and their related regulations and improvements have focused on them almost exclusively across the last several decades. To exemplify the gains, federal NOx tailpipe standards for cars dropped (becoming more stringent) 35% in 1977, then 50% more in 1981, then another 40% off the 50% in 1994, then another 50% from there in 1999, then, from that 1999 level another 77% through 2009 model year. For SUVs, vans, and heavier trucks between 6000-8500 lbs, NOx reductions were imposed with a 10% reduction required in 1994, and then with an additional 65% - 95% depending on vehicle type by 2009[2]. By comparison, the BAAQMD's NSR thresholds in 1999[3], shown at FEIR pg. 13.13-15, were set at 15 tons per year for ROG , NOx, and PM10, equating to 80 lbs/day. Those NSR trigger levels would drop, once, to ten tons a year roughly a decade later, and CEQA thresholds upon which they were based were reduced similarly to current levels (54 lbs/day each for ROG, NOx; PM2.5; 82 lbs/day PM10). For the daily NOx threshold in effect now, this represents a 32.5 % reduction from the NSR-based 1999 threshold. How relevant was that to improving regional air quality, as judged by the 17% statistic? Comparing that reduction to the percentage NOx reductions contributed by increasingly stringent federal tailpipe emission standards, the Bay Area's tailpipe onroad NOx, formative of ozone air pollution, decreased by at least sixteen times that amount on a percentage basis. (32.5% NOx threshold value decrease vs. decrease in NOx onroad tailpipe standards of 35% x 50% x 40% x 50% x 77%, or a net reduction of almost 97% via onroad NOx standards.)

Clearly, any inference by the Lead Agency in the FEIR that the CEQA thresholds, having been set arbitrarily on under-representative NSR thresholds, are to account for the 17% regional improvement in ozone air pollution over the past 20 years is unsupported by the evidence. In fact, it can and should be argued that only a 17% regional ozone improvement, as judged against the

stunning improvements in mobile source emission reductions provided by federal and state regulation, is a clear and obvious indictment of the growth in indirect source emissions (including the 17 tons of ozone precursors likely underestimated for the Event Center project) resulting from BAAQMD's improperly designed, under-representative CEQA thresholds of significance.

Further underscoring that mobile source criteria pollutants are decreasing not from local air agency programs but as a result of state and federal ones, the most recent summary report, the BAAQMD's "Bay Area Emissions Inventory Summary Report: Criteria Pollutants Base Year 2011", at pg. 13 attributes regional ROG (an ozone pre-cursor) improvements:

> "CARB regulations on mobile sources have also significantly reduced ROG emissions. On-road motor vehicle emissions have declined over the years despite annual increases in Vehicle Miles Travelled (VMT). This is due to the fleet turnover, with newer, lower emitting vehicles replacing older, higher emitting ones. The introduction of Reformulated Gasoline Phase II (RFGII) in 1996 and the introduction of Enhanced Inspection and Maintenance program (Smog Check II) in the Bay Area, which started in October 2004, have resulted in further reductions."

At pg. 14, NOx strategies and improvements for the Bay Area are identified:

> "Reductions in NOx emissions prior to 2011 were due in part to Air District regulations on combustion sources including refineries and power plants. Tighter emission controls on motor vehicles also significantly reduce NOx emissions. Smog Check II, introduced in the Bay Area in 2004, played an important role in achieving NOx reductions, as it requires that vehicles are tested and that failing vehicles are repaired. NOx emissions from on-road motor vehicles will continue to decline due to fleet turnover. CARB's aggressive regulations on on-road heavy duty diesel trucks, buses, and construction equipment will continue to reduce NOx and diesel particulate matter. "

This excerpt reinforces the BAAQMD's historical and largely exclusive focus on 1) imposing NOx reductions on the same stationary sources that represent only a very small margin of the air basin's NOx inventory; and 2) continuing the historical reliance on the State and federal government for Smog-Check, cleaner vehicle tailpipe standards, and other "aggressive regulations" to reduce both NOx and PM engine emissions.

BAAQMD's CEQA thresholds, adopted for use by OCII on the Events Center project EIR, have been and remain under-representative quantitatively based on non-scientifically derived NSR thresholds. NSR-derived CEQA thresholds will fail to adequately counterbalance land use growth-related increases in new, indirect source (vehicle) emissions of the Events Center, along with emissions from other land use projects in the Bay Area, subject to CEQA review, and those land use projects will generate thousands of tons of emissions on an annual basis no differently—aside from being greatly under-evaluated by use of the District's lax CEQA thresholds-- than those highly regulated local stationary sources operating under routine, severe restrictions by the air district.

In conclusion, use of the BAAQMD's CEQA thresholds to evaluate the Event Center project's impact significance for both onroad and offroad emissions have been based on under-representative NSR daily emission offset levels, and those levels, applied to evaluate the Events Center's air impacts, will understate their significance to local and regional air quality. This is no more appropriate than the Lead Agency's implication that the region's 17% improvement in regional ozone over a 20-year period is attributable to those under-representative CEQA thresholds.

Footnotes:

[1] A "vehicle" is typically characterized by its being self-propelled, and includes both onroad and offroad applications. See Table 4, pg. 6 for distribution of BAAQMD's annual average emissions by major source categories; "Bay Area Emissions Inventory Summary Report: Criteria Air Pollutants Base Year 2011" at http://baaqmd.gov/~/media/Files/Planning%20and%20Research/Emission%20Inventory/BY2011_CAPSummary .ashx?la=en

[2] US EPA; Emission Facts The History of Reducing Tailpipe Standards. See: www3.epa.gov/otaq/consumer/milestones.htm+&cd=1&hl=en&ct=clnk&gl=us

[3] See BAAQMD CEQA GUIDELINES Assessing the Air Quality Impacts of Projects and Plans; 1999; pg 16.

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-12]*)

Response to Late Comment AQ-4: Air Quality Significance Thresholds

The commenter states that because the BAAQMD thresholds were derived to address stationary sources that they are inappropriate for use as thresholds for land use development projects. The RTC document cite California Air Resources Board data to demonstrate that measures taken locally by BAAQMD are effective in reducing emissions and that a large portion of these reductions has been achieved by curtailing emissions from stationary sources. The NSR thresholds are therefore enabling the BAAQMD to capture a sufficient percentage of projects to effectively reduce ozone precursors within the basin. Data from the CARB's Almanac for Emissions and Air Quality[8] (year 2013) can further be used to demonstrate that not only have emissions inclusive of stationary and vehicular sources in the state declined but that, if taken alone, stationary source emissions statewide have declined by more than 50 percent from 2000 to 2015. Thus, even with an increase in stationary sources over the intervening 15 years, statewide emissions of ozone precursors from these sources have decreased. Use of NSR thresholds have resulted in emissions controls on significant stationary source contributors and thus are partly responsible for the decline in ozone precursors The fact that land use development projects include more than just stationary sources does not preclude the use of an NSR-based threshold from being an effective tool to determine significance and require mitigation.

Further, the use of the BAAQMD's mass emission significance thresholds is ubiquitous in environmental assessment under CEQA throughout the San Francisco Bay Area Air Basin. The commenter's assertion that these thresholds are inappropriate for use in assessing significance of land use development projects is unsupported and would render every CEQA document in the region that quantitatively address ozone precursor emissions inadequate.

Finally, case law confirms that a lead agency has discretion to rely on the guidance provided by local air districts concerning the appropriate significance thresholds to use in CEQA analysis of proposed projects. (See, e.g., *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal.App.4th 899, 932-934.)

Issues Raised by Late Commenters on Air Quality Traffic Assumptions

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-13

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[8] CARB, California Almanac of Emissions and Air Quality -2013 Edition, Chapter 4 Regional Trends and Forecasts, Table 3-3.

III. NBA-Game Vehicle Trips Associated with Oracle Arena Appear To Have Not Been Relinquished For Use by SF Warriors at Proposed Events Center

At FEIR 13.13-45, the Lead Agency has again repeated its contention that basketball-related games at the Oracle Arena in Oakland represent existing baseline vehicle emissions which, already existing, are transferable to the new SF arena. The FEIR's air emissions estimates rely on this baseline argument to avoid disclosinig greater emission offsets that would otherwise be necessary to reduce the project's emissions to less than significant levels.

> "These trips occur now so they are part of the existing baseline condition. It is reasonable to assume that the Oracle Arena will not be host to another NBA franchise in the Bay Area, so no new vehicle emissions associated with NBA basketball games would be expected in the region. This assumption is supported by substantial evidence and vetted by OCII. The assumption was also accepted by the California Air Resources Board when it approved the project sponsor's analysis of greenhouse gas emissions pursuant to its AB 900 application."...
>
> "The Specific Plan (Oakland Coliseum Area Specific Plan Final EIR) is based on Oakland's assumption that all three current City of Oakland sports franchises (the Raiders, the A's and the Warriors) will make independent business decisions to remain in Oakland, and at the Coliseum District, and that each of the sports franchises will have new, separate venues for their games. Consequently, the assumptions within the Coliseum Area Plan Final EIR are entirely different from those of the proposed project.

However, as we noted in our previous comments Oakland has clearly identified at various locations in its August 2014 Coliseum Area Specific Plan DEIR that it has assumed that its baseline involves retention of the Warriors, and hence EIR emissions estimates are predicated on that fact.

The issue here is not whether the Warriors intend to move to the new SF Events Center and that some existing vehicle trips will move with them, but whether the game-related vehicle trips the Events Center EIR has claimed in its emissions calculations and for mitigation value are transferable from the Oracle Arena. If the modernizing and expansion of the area, inclusive of the Oracle Arena, intends to keep those trips on their books (and the Coliseum SPA DEIR indicates they will), they cannot then also be claimed for application to the SF Event Center project (as they have been). We continue to contend that they cannot be applied in the Events Center project because they have not been relinquished by the existing facility that is anticipated within the Coliseum redevelopment process, and there is no evidence (a letter from the City of Oakland, a clear statement in the Coliseum SPA DEIR that they have not continued to count those NBA-franchise related vehicle trips, etc.) provided in the SF Events Center EIR to that effect. The Coliseum SPA DEIR anticipates modernizing the existing Oracle Arena with no substantive change in location, and retention of the NBA franchise or recruitment of a non-NBA sports team. At Coliseum SPA DEIR pg. 4.4-59 baseline emissions were identified for 2013. Further, the Oakland DEIR was released in July 2014, a year prior to issuance of the SF Events Center DEIR, and at least four months prior to the release of the Event Center NOP. Coliseum SPA DEIR pg. 4.4-59:

> "CalEEModTM 2013.2.2 was used to evaluate (...) criteria pollutant emissions for (...) existing criteria pollutant emissions from the Coliseum District area ("Existing No Project", or "2013 Baseline")."

Showing in the screenshot below, Coliseum SPA DEIR pg. 4.2-61, Table 4.2-7 provides baseline operational emissions for the Coliseum project, inclusive of existing Warriors game trips, for the 2013 baseline year, and then again for the 2035 baseline year. According to the DEIR:

> "Table 4.2-7 shows estimated average daily and annual maximum criteria emissions under current conditions (2013 Baseline), as well as the emissions projected from current land uses at the Coliseum District as they would occur in 2035 (2035 Baseline). These projected 2035 baseline emissions are based on a continuation of existing land uses, **vehicle trips**, **and VMTs**. (Emphasis added) Over time, regulatory changes at the state level are projected to go into effect, resulting in improvements primarily to vehicle exhaust emissions."

Table 4.2-7 Operational Criteria Pollutant Emissions – Change in Coliseum District Baseline

Emissions (tons/year)			
Pollutant	**2013 Baseline**	**2035 Baseline**	**Baseline Increment**
ROG	26	21	-5
NOx	30	11	-19
PM_{10} Total	9	9	0
$PM_{2.5}$ Total	3	3	0
Emissions (pounds/day)			
Pollutant	**2013 Baseline**	**2035 Baseline**	**Baseline Increment**
ROG	144	115	-29
NOx	165	62	-103
PM_{10} Total	52	50	-2
$PM_{2.5}$ Total	17	15	-2

Abbreviations:
CalEEMod™ = California Emissions Estimator Model
CEQA = California Environmental Quality Act

Immediately after, the DEIR states:

> "Table 4.2-8 shows average daily and maximum annual projected 2035 criteria air pollutant emissions with the Coliseum District project, compared with 2013 Baseline emissions levels, and the incremental increase of emissions. The table shows that for each criteria pollutant, in the year 2035, the development will emit more pollutants than the City's threshold."

A screenshot of Table 4.3-8 is provided:

Table 4.2-8 Coliseum District Operational Criteria Pollutant Emissions

Emissions (tons/year)					
Pollutant	**Existing (2013) Baseline**	**Future (2035) Coliseum District**	**Project Increment**	**Threshold**	**Greater than Threshold?**
ROG	26	99	73	10	YES
NOx	30	51	21	10	YES
PM10 Total	9	44	35	15	YES
PM2.5 Total	3	13	10	10	YES
Emissions (pounds/day)					
Pollutant	**2013 Baseline**	**2035 Coliseum District**	**Project Increment**	**Threshold**	**Greater than Threshold?**
ROG	144	544	400	54	YES
NOx	165	281	116	54	YES
PM10 Total	52	243	191	82	YES
PM2.5 Total	17	73	57	54	YES

Abbreviations:
CalEEMod = California Emissions Estimator Model
CEQA = California Environmental Quality Act
NOx – nitrogen oxides

The Coliseum SPA DEIR has made it abundantly clear in written and graphical form that it has assumed retention of the Warriors at their present Oakland area site or recruitment of a replacement non-NBA team, counted those related vehicle trips and their attendant air pollution impacts, and it has provided baseline emissions data for 2013 for estimation of emissions for the proposed Coliseum development, with Arena renewal, that reflects that retention. In Table 4.2-8 immediately above, the "Project Increment" column represents the difference between the Warrior's emission baseline values, inclusive of game-related trips that have been ongoing at the facility for decades, and the 2035 future-case projection. Nothing has been provided to show that the Oakland EIR has relinquished its historical NBA-franchise trips, and thus those "existing" trips and their emissions must not then be applied as, in effect, a credit in the SF EIR, since an automatic under-representation and under-mitigation of the Event Center's total, significant operational emissions (largely caused by vehicle trip emissions) will then occur. While this helps the Event Center Applicant since fewer emission offsets will need to be acquired to bring the project's significant emissions down to sub-threshold levels, it is not appropriate under CEQA.

No information is found in Table footnotes or surrounding to reflect that trips factored into the 2013 baseline were somehow relieved of the increment of historical Warrior game-related trips that must be carefully accounted for in the CEQA review process for both projects, nor has the SF Events Center EIR ever provided actual evidence that the Oakland Coliseum project has relinquished or abandoned those baseline Warrior trips, already studied and accounted for under CEQA, to the Oracle Arena as it is redeveloped and expanded. Unless the SF Events Arena project can provide factual information from Oakland Coliseum SPA EIR administrators that shows that trip emissions associated with the long-established NBA-style games at the Oracle Arena will not continue with the Warriors or any other similar sports team, and that the Coliseum project has abandoned any intent to have a replacement sports team for the purposes of estimating the emissions of the redeveloped, new arena proposed for the Coliseum Specific Plan Area, the SF Events Center cannot claim or use any measure of them for their emissions estimates or for mitigation offsetting.

Finally, CARB's AB 900 GHG streamlined analysis process for large (>$100 million) projects is not part of the CEQA process used to estimate and evaluate the proposed SF Arena's environmental impacts, does not afford the public effective review and input, nor is it subject to administrative review. Without evidence provided in the SF Events Center EIR of a potential for double-claimed Warriors trips, CARB likely erred if they assumed that Oracle Arena NBA trip emissions were wholly fungible with and transferable to the SF EIR. Before the SF Events Center can legitimately claim any benefit from Oracle's NBA-related vehicle trips for reducing its new, estimated vehicle emissions under CEQA, they must have been "taken off the books" in Oakland in order to prevent what would in effect be a double-counting. As we noted previously, those Oracle-based NBA trips cannot be transferred to San Francisco's proposed Events Center if they have been retained "on the books" in Oakland. Nothing in the FEIR proves otherwise. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-13]*)

Response to Late Comment AQ-5: Air Quality Traffic Assumptions

Assumptions for SEIR Air Quality Analysis

This comment concerns the baseline selected for the air quality analysis. The trips associated with the Golden State Warriors games at the Oracle Arena are considered in the analysis of the localized impact of the project. There is currently only one NBA franchise in the Bay Area. It is not considered reasonably foreseeable that another NBA franchise will relocate to the Bay Area, as neither the NBA nor a specific team has announced such plans. Accordingly, the trips associated with Golden State Warrior games would follow the team when they move to the proposed event center in the Mission Bay area of San Francisco. The ozone precursors

concerned, ROG and NOx, are regional pollutants in that they affect the entire region and not just the city in which the arena is located because they form ozone in the atmosphere in the presence of sunlight. Only the destination of these existing trips would change under the proposed project; there would not be a duplication of game-day trips between Oakland and San Francisco. As such, the Oracle Arena trips for Golden State Warriors games only are reasonably assumed to occur regardless of the team's move to San Francisco. The local impacts of the new trips in San Francisco are evaluated in the local health risks and hazards assessment of the SEIR. The SEIR analysis assumed that all concerts and other non-basketball events occurring at the proposed arena were "new" emissions and that these activities would not be transferred from Oracle arena, although it is probable that a portion of them would be.

The commenter states that offsets will bring the project's significant emissions down to sub-threshold levels. While this is true, Impact AQ-2 is still found to be significant and unavoidable in the Final SEIR. Even with implementation of identified mitigation measures, the SEIR notes that the air emissions from operation of the project are significant and unavoidable. Mitigation Measure M-AQ-2b is designed to reduce the appropriate quantity of NOx and ROG given the regional nature of the pollutants.

Assumptions for AB 900 Greenhouse Gases Analysis

The commenter is correct in stating that the AB 900 certification "is not part of the CEQA process used to estimate and evaluate the proposed SF Arena's environmental impacts." However, the AB 900 process did afford public review and input, through a public comment period from March 2, 2015, to April 1, 2015, prior to the Governor's Certification on April 30, 2015. As discussed in Response AB-2 in Chapter 13, Section 13.4 of the RTC document, the AB 900 administrative record is complete, sufficient, and publically available (hosted at http://gsweventcenter.com/). OCII was aware of the application as acknowledged in a letter included as Exhibit E to the AB900 application. OCII was given the opportunity to perform administrative review of the application.

The greenhouse gases emissions analysis conducted for the AB 900 process was reviewed and agreed to by CARB. The Governor certified the project as an environmental leadership project. That decision is final. The significance determination for criteria air pollutant emissions in the SEIR is based on appropriate project-generated sources(see Draft SEIR, Section 5.4), as required under CEQA.

Issues Raised by Late Commenters on Air Quality Specialist

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-15

V. Use of a Qualified 3rd Party Specialist or Engineer Is Needed to Ensure Actual Mitigation-Required Construction Eqpt Emission Reductions

At FEIR pg. 13.13-55 the Lead Agency contends that a potential conflict of interest posed by the Project Sponsor's "review role in the mitigation measure" is negated by their requirement that the Construction Emissions Control Plan be reviewed or approved by OCII or its "designated representative". OCII argues that "air quality specialists" at SF Planning are capable of verifying Event Center construction fleets for compliance with the project's mitigation measures, pointing to unspecified experience with, for example, a harbor hoteling project, and "familiarity with modeling programs" used for air quality analysis. We note that that the Lead Agency has used the term "air quality specialists" and not "Air Quality Specialists", indicating that their job descriptions likely reflect non-technical Planner skillsets rather than those required for an air quality agency engineering or specialist position involved with evaluating and verifying VDECs and CARB certifications; evaluating and verifying NOx reduction claims emissions for offroad construction equipment; evaluating and verifying engine Tiers on all pieces of offroad construction equipment; and ensuring that each and every piece of onsite equipment is verified and tracked regularly for hours of operation at the project site. Hands-on experience with construction vehicles of all types and vintages, emission control technologies, CARB regulations and aftermarket retrofit certification requirements, possessing CARB certification for performing visible emissions evaluations for construction equipment opacity violations, and other technical, hands-on, construction-related skillsets will be required to ensure that every piece of offroad construction equipment used at the Events Center project meets the highly-specific and technical requirements of M-AQ-1 for every day such equipment is used at the jobsite; it is highly improbable that a "planner" would possess such skillsets.

Further, "familiarity" can indicate little more than a vague awareness and thus it connotes little substance. As we argued in our comments previously, the Lead Agency should rely for onsite verification of the project's mitigation measures, in detail, on BAAQMD personnel or on an independent, trained, professional environmental specialist or engineer with expertise in air emissions, construction vehicles, and emissions control technologies and strategies used to control and reduce construction equipment emissions. The environmental compliance professional should be onsite daily, with weekly assessments in reports delivered to OCII. Based on a lack of experience with construction equipment, its availability, and with practicable construction mitigation, it is apparent that OCII has constructed M-AQ-1 in ways that are fundamentally flawed and the measure is unenforceable. Accordingly, OCII's choice of SF Planning personnel, or their own, to ensure compliance and enforcement of the project's air quality mitigations is likely to be similarly flawed. If OCII refuses to require use of highly qualified air pollution control personnel to ensure compliance and enforcement of M-AQ-1 and other air quality mitigations, we believe the MMRP must be amended to provide for regular (bi-weekly or monthly) independent audits provided by BAAQMD or a private, professional air quality consultant to verify equipment lists and details with actual vehicles on the project site; the auditor would have specialized training in visible emissions, air quality regulations, vehicle emissions and control technologies used in construction equipment, etc. Without such third-party verification the project will likely not produce the required emission reductions that have been claimed in the EIR in order to reduce the project's impact significance levels. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-15]*)

Response to Late Comment AQ-6: Air Quality Specialist (see also Response to Late Comment AQ-2)

As stated in the RTC document, SF Planning Department has an air quality group with technical expertise in CEQA-related air quality technical analysis, including the ability to assess the availability and quality of existing data; evaluation of air quality modeling parameters and potential air quality impacts; and development, evaluation, and monitoring

of air quality mitigation measures. Air quality specialists within the group provide an analysis of a project's potential to emit criteria air pollutants, toxic air contaminants, and greenhouse gases, as well as the potential for pollutants to adversely affect sensitive receptors. Air quality specialists are familiar with modeling programs including, but not limited to: CalEEMod, URBEMIS, EMFAC, AERMOD, and CAL3QHCR Line Source Dispersion Model and work regularly with the Bay Area Air Quality Management District (BAAQMD) staff and staff with air quality analysis expertise at the Department of Public Health (DPH) on individual projects and in the creation of technical support documentation for the continued development of a Community Risk Reduction Program for the City. OCII believes that the air quality staff at the SF Planning Department has the requisite expertise for its designated oversight role in the implementation of air quality mitigation measures.

Issues Raised by Late Commenters on Renewable Diesel as Mitigation

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-16

VI. Renewable Diesel Should Have Been Made Mandatory in Construction and Operational Mitigation Measures

No substantive explanation is provided in the FEIR for why the Lead Agency has failed to require use of renewable diesel to mitigate offroad construction equipment emissions and for use in emergency standby generators. As we pointed out in our previous comments renewable diesel is readily available, and it provides criteria and carbon emission reduction benefits that cannot be matched by the biodiesel mentioned in the EIR, it routinely costs less than biodiesel, and in many cases it costs less or is on par with costs for regular diesel.

At FEIR 13.13-61 the Lead Agency has applied conditions to the use of renewable diesel in emergency standby gensets that reflects its inexperience and reluctance to require use of available technology that has demonstrated clear cost-effective emission benefits within the region. As we pointed out in comments on the SDEIR, renewable diesel is available at multiple locations throughout central and northern CA at costs on par with conventional diesel (and routinely less than the less-effective biodiesel mentioned by the Lead Agency in the Events Center EIR), its substantial carbon benefits are unmatched against regular diesel or biodiesel, and it produces positive reductions compared with regular diesel in particulate (-34%), NOx (-18%)[7], and other pollutant reductions needed by the Events Center project. Use of renewable diesel in existing or new diesels requires no retrofitting and either does not affect performance or improves it incrementally. The Lead Agency's concern that renewable diesel's NOx benefit may be lost as a result of 12 miles of transport (see FEIR pg. 13.13-57) to the Event Center borders on the ludicrous, since traditional diesel (particularly from imported crude) is transported a greater distance, and because the Lead Agency has failed altogether to verify traditional diesel's transport distance to the Events Center for comparison purposes.

Renewable diesel's primary benefit is its extremely low carbon intensity; the Propel renewable diesel product we discussed in previous comments has zero land use or other indirect carbon intensity effect, and its (direct) carbon intensity (CI) is 68% less than traditional diesel's CI value; why, then, has OCII not embraced renewable diesel's carbon benefits that, importantly, will help offset the project's actual GHG emissions and criteria pollutant emissions? Renewable diesel is readily fungible with traditional diesel for storage and has better product life characteristics. Its use in construction

and onroad diesels requires no adjustments or adaptations, it is locally available, and it is functionally transparent with traditional diesel for use in diesel engines.

While the Lead Agency has refused to embrace renewable diesel for the Events Center project, its own parent agency has not. San Francisco's mayor publicly announced that the City-and-County had committed to 100% renewable diesel use last July, with full transition by the end of 20158. The City of Walnut Creek committed to 100% use of renewable diesel previously, and relies on it exclusively now. 9 If the City of Walnut Creek and the City and County of San Francisco, with their experts in diesel technology and fleet management, and with ready access to BAAQMD air quality expertise, have embraced the multiple air and energy benefits of renewable diesel, what explains the Lead Agency's intransigent failure (FEIR pg. 13.13-57) to require its use in the Event Center's air quality mitigations? CEQA requires the use of all reasonable, feasible mitigations for the reduction of the project's significant air quality impacts; the Lead Agency's tepid response to renewable diesel is, against the evidence of its considerable benefits that has been readily available since prior to issuance of the project's SDEIR, inadequate to ensure its use on the project.

Further, if the "OCII or the City's air quality specialists" lack the expertise necessary to have already reviewed and selected renewable diesel as they should have (based on the City's adoption of it prior to issuance of the Events Center FEIR), and for what appear to be fatal flaws built into M-AQ-1 (as pointed out elsewhere in this comment letter), we again propose the project's use of a highly qualified, independent and unconflicted, professional environmental consultant, or BAAQMD specialist or engineer, with relevant expertise to ensure use of and compliance with the Event Center's air quality mitigations and to ensure the use of all reasonable, feasible options (including renewable diesel) for every day of the project's construction process.

Footnote:

7 "Low Carbon Fuel Statistics", pg 9; http://propelfuels.com/assets/hpr-launch/docs/california-low-carbon-fuel-consumer.pdf

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-16]*)

Response to Late Comment AQ-7: Renewable Diesel as Mitigation

The comment states that renewable diesel should be required for use in operation of the proposed stand-by generators as well as by construction equipment. Page 14-116 of the RTC document specifically identifies use of renewable diesel for generator operations as indicated below in Mitigation Measure M-AQ-2a, which the RTC document revised as shown:

> **Mitigation Measure M-AQ-2a: Reduce Operational Emissions**
>
> The project sponsor shall implement the following measures ~~as feasible~~:
>
> - Provision of outlets for electrically powered landscape equipment
> - <u>Use of renewable diesel to power back-up diesel generators if it can be demonstrated to OCII or the City's air quality specialists that it is compatible with tiered engines and that emissions of ROG and NOx from transport of fuel to the project site will not offset its NOx reduction potential.</u>

Page 13.13-57 of the RTC document revised element 4 of Mitigation Measure M-AQ-1: Construction Emissions Minimization to require use of renewable diesel:

4. The Plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but are not limited to: equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation. For VDECS installed: technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date and hour meter reading on installation date. For off-road equipment using alternative fuels, reporting shall indicate the type of alternative fuel being used. Renewable diesel shall be considered as an alternative fuel if it can be demonstrated to OCII or the City's air quality specialists that it is compatible with tiered engines and that emissions of ROG and NOx from transport of fuel to the project site will not offset its NOx reduction potential. The plan shall also include estimates of ROG and NOx emissions.

The City implemented the use of renewable diesel for its citywide fleet on the basis of its lower emission potential of diesel particulate matter and not for the purposes of reduction of ozone precursors. As a consequence, the verification of NOx reduction potential is required by the mitigation as locally-sourced diesel may be acquired with less transport emissions.

Issues Raised by Late Commenters on Air Quality Impacts of Project Refinements and New Variant

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-5

D. Changes to the Project Since Publication of the DSEIR Require Recirculation of a Revised DSEIR Due to New and More Severe Significant Impacts.

Under CEQA, if the project changes after publication of the Draft EIR, and these changes create a new significant impact not identified in the Draft EIR, or a substantial increase in severity of a significant impact that was identified in the Draft EIR, the lead agency must recirculate the draft EIR for public comment. (CEQA section 21092.1.)

Here, the RTC describes a number of "construction refinements", including using dewatering generators, using a soil treatment pug mill, and removing rapid impact compaction from the construction plan. With respect to the air quality impacts of these "construction refinements" the RTC states:

> The addition of the construction refinements would not substantially increase (approximately 2 percent for ROG and 4 percent for NOx) the average daily construction-related emissions disclosed in the Draft SEIR. This would not result in a substantial increase in the severity of the previously identified significant and unavoidable impact, and the same mitigation measures would apply requiring the project sponsor to minimize construction emissions.

(RTC, p 12-22.)

The RTC also describes a new variant, the Muni UCSF/Mission Bay Station Variant, and discloses that:

> The Muni UCSF/Mission Bay Station Platform Variant would not substantially increase (approximately 2 percent for ROG and 5 percent for NOx) the average daily emissions disclosed in the Draft SEIR for the proposed project (see Table 5.4-7, page 5.4-31). Furthermore, Mitigation Measure M-AQ-1 (Construction Emissions Minimization) would also apply to the variant. While the estimated construction emissions under the variant shown in Table 12-2 are slightly higher than those identified for the proposed project in the Draft SEIR, this impact is not substantially more severe than the previously identified significant and unavoidable impact.

(RTC, p 12-22.)

There are several problems with these assertions. First, the RTC does explain whether construction refinement caused increases of 2 and 4 percent for ROG and NOx, respectively, are included within or additive to the Platform Variant caused increases of 2 and 5 percent for ROG and NOx. Without this information, the public does not know what additional quantum of ozone pollution the RTC deems insubstantial.

Assuming for the moment that the construction refinement caused increases are included within or the Platform Variant caused increases, the RTC offers no rationale why the 2 and 5 percent increases are not considered a "substantial" increase in the severity of the previously identified significant effect that Project construction will have on ozone precursor pollution. The RTC authors apparently believe these number speak for themselves. They do not. In fact, reliance on these appears to reflect a silent assumption that these increases above the previously identified quantities of emissions for these pollutants is "de minimis." It must be remembered, however, that these increases are not above a previously identified less-than-significant quantity of emissions; the previously identified quantities were significant!

The RTC thus commits the exact errors of law rejected by the Court of Appeal in *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98 ("CBE"), i.e., using a "de minimis" rationale or any type of simple numerical ratio of the incremental impact compared to the pre-existing impact. "[T]he relevant question... is not how the effect of the project at issue compares to the preexisting cumulative effect, but whether 'any additional amount' of effect should be considered significant in the context of the existing cumulative effect. [footnote omitted] In the end, the greater the existing environmental problems are, the lower the threshold should be for treating a project's contribution to cumulative impacts as significant." (Id. At p. 120; see also *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 720-721.)

These increases should be considered substantial and the SEIR recirculated for public comment. Instead, the October 23, 2015, notice of publication of the Response to Comments informed the public they would have no opportunity to comment on the environmental effects of these changes in the Project. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-5]*)

Response to Late Comment AQ-8: Air Quality Impacts of Project Refinements and New Variant

The commenter states that increased construction emissions resulting from construction refinements and a new variant identified in the RTC document are substantial and should result in recirculation of a revised SEIR. Chapter 12 of the RTC document discusses the relative increases in emissions associated with operation of dewatering generators, operation of a pug mill to treat soil on-site and removal of previously assumed rapid impact compaction activities. As stated in Chapter 12, the increase in NOx emissions from construction refinements would be 5 percent over the significant construction-related NOx emissions identified in the SEIR of 144 pounds per day, or 151 pounds per day. The

144 pounds per day of NOx emission identified in the SEIR is 90 pounds per day (12 tons per year) over the significance threshold of 54 pounds per day. A 5 percent increase of NOx emissions from 144 pounds per day to 151 pounds per day would result in emission of 97 pounds per day (13 tons per year) over the threshold. The project variant would also result in an increase in construction emissions beyond what was estimated with the construction refinements above. As indicated in Table 12-3 of the RTC document, NOx emissions under this variant (and including project construction refinements discussed above) would result in 157 pounds per day, which would be 103 pounds per day (14 tons per year) over the threshold.

These marginal increases in temporary construction emissions over what was identified in the Draft SEIR are not considered a substantial increase. This judgment is based on the significance threshold of 54 pounds per day which, as stated in page 5.4-25 of the SEIR, represents a significant increase in emissions under CEQA for NOx emissions. Consequently, for project revisions to result in a substantial increase in emissions over that identified in the SEIR, they would need to increase emissions by 54 pounds per day over the 144 pounds per day, or 198 pounds per day. Because project emissions with consideration of revisions and the project variant would result in emissions of 157 pounds per day or less, there contribution is not considered a substantial increase.

Mitigation Measure M-AQ-2b requires the project sponsor to offset operational and construction–related emissions. Because operational emissions are presently calculated to exceed construction-related emissions, operational emissions form the basis of the requirement to provide 17 tons per year of ozone precursor offsets identified in the SEIR Increased construction-related emissions with the proposed construction refinements or the MUNI Variant would still be less than the operational emissions and would be offset through implementation of Mitigation Measure M-AQ-2b. That is, the amount of offsets provided would be greater than the project's construction-related NOx emissions; for this reason, in providing such offsets, the project sponsor would more than offset the project's construction emissions. Furthermore, Mitigation Measure M-AQ-2b would require the project sponsor to calculate the amount of emissions offset required from construction based on the reporting requirements of Mitigation Measure M-AQ-1 and the degree of compliance with off-road equipment types that were determined to be commercially available. If the calculated construction emissions of ozone precursors requires offsets in excess of 17.0 tons per year, then the applicant must provide the additional offset amount commensurate with the calculated ozone precursor emissions exceeding 17.0 tons per year. Regardless, the significant and unavoidable determination of the SEIR related to construction-related emissions would not change with the construction refinements or the MUNI Variant.

Recirculation of a Draft EIR is required only when "significant new information" is added to the EIR "in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect … that the project's proponents have declined to implement." (CEQA Guidelines, § 15088.5, subd. (a); *Laurel Heights Improvement Assn. v. Regents of University of*

California (1993) 6 Cal.4th 1112, 1129-1130 (*Laurel Heights II*); *San Francisco Baykeeper, Inc. v. California State Lands Comm'n* (2015) ___ Cal.App.4th ___ (slip op. at pp. 17-19) (A142449).) As the comment notes, recirculation may be required when the Final EIR reveals a new significant impact not identified in the Draft EIR or a substantial increase in the severity of a significant impact that was identified in the Draft EIR. (Guidelines, § 15088.5, subds. (a)(1), (a)(2).)

"An agency's determination not to recirculate an EIR is given substantial deference and is presumed to be correct. A party challenging the determination bears the burden of showing that substantial evidence does not support the agency's decision not to recirculate." (*Beverly Hills Unified School District v. Los Angeles County Metropolitan Transportation Auth.* (2015) 241Cal.App.4th 627, 661.) As the Supreme Court has emphasized, recirculation is the exception, not the rule. (*Laurel Heights II, supra,* 6 Cal.4th at p. 1132.)

The comment suggests changes to the proposed project triggered the need for recirculation. That is not correct. "CEQA allows, if not encourages, public agencies to revise projects in light of new information revealed during the CEQA process." (*Citizens for a Sustainable Treasure Island*, *supra*, 227 Cal.App.4th at p. 1062.) "The CEQA reporting process is not designed to freeze the ultimate proposal in the precise mold of the initial project; indeed, new and unforeseen insights may emerge during investigation, evoking revision of the original proposal. [Citation.]" (*Ibid*., quoting *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 199 (*County of Inyo*).) As noted above, project changes do not trigger recirculation unless they would result in a new significant environmental impact or a substantial increase in an environmental impact and failure to recirculate would deprive the public of a meaningful opportunity to comment upon a substantial adverse environmental effect. (CEQA Guidelines, § 15088.5, subs. (a)(1), (a)(2).)

The comment states that changes in the proposed project will result in new and substantially more severe significant impacts. The comment does not describe any new impacts revealed in the RTC document that were not previously disclosed in the Draft SEIR. Instead, the comment cites to air quality impacts that are described in the Draft SEIR, and states that the increase in ROG and NOx emissions (2 and 5 percent, respectively) from the construction refinements and Muni UCSF/Mission Bay Station Variant identified in the RTC document constitutes a substantial increase in the severity of impacts requiring recirculation. As described above, these slight increases are not considered substantially more severe than the impacts described in the Draft SEIR. Further, the identified offset mitigation measure would more than offset the construction-related emissions resulting from the construction refinements and MUNI UCSF/Mission Bay Station Variant.

Relying on *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, and *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 720-721, the comment seems to suggest that *any* increase in a previously identified significant impact triggers recirculation.

That suggestion is incorrect. First, the two cases cited in the comment address whether a project's contribution to a cumulatively significant impact should be considered cumulatively considerable. They do not address the standards for recirculation, and therefore, are not applicable. In any event, both of those cases note that just because a project contributes to a cumulatively significant impact, it does not mean that the project's contribution is cumulatively considerable. (See *Communities for a Better Environment v. California Resources Agency, supra,* 103 Cal.App.4th at p. 128 [the "one [additional] molecule rule" is not the law."].) Instead, the lead agency has discretion to determine whether the project's incremental contribution to a significant cumulative impact is cumulatively considerable. (*Ibid*.) Similarly, for recirculation, an agency has discretion to determine whether an increase in the severity of an impact is "substantial." (See *Laurel Heights II*, *supra*, 6 Cal.4th at pp. 1120, 1133.)

Second the plain language of the CEQA Guidelines – and Supreme Court precedent – refutes the commenter's position. (See *Laurel Heights II*, *supra*, 6 Cal.4th at pp. 1129-1130.) Under the CEQA Guidelines, the standard for recirculation is not whether the Final EIR reveals *any* increase in a significant impact, but whether the Final EIR reveals "*a substantial increase*" in the severity of a significant impact. (CEQA Guidelines, § 15088.5, subds. (a)(2).)

Here, the RTC document properly concluded that the construction refinements and Muni Variant would not result in a substantial increase in air quality impacts, as described above. (see also RTC, pp. 12-21 to 12-22; 12-29 to 12-34.) Therefore, OCII's determination that recirculation is not required is supported by substantial evidence.

Further, a Draft EIR needs to be recirculated only if it is changed in a manner "that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project[.]" (CEQA Guidelines, § 15088.5, subd. (a).) There is no evidence that the information added to the SEIR deprived the public of a meaningful opportunity to comment on the project's significant impacts.

SECTION 11: RESPONSES TO LATE COMMENTS ON GREENHOUSE GASES EMISSIONS

The comments and corresponding responses in this section cover topics analyzed in SEIR Section 5.5, Greenhouse Gas Emissions, as augmented by RTC document. These include topics related to:

- Issue GHG-1: Approach to Analysis

Issues Raised by Late Commenters on GHG Approach to Analysis

This response addresses all or part of the following comments, which are quoted below:

O-MBA16S6-3 O-MBA16S6-11

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3. Greenhouse Gas Emissions

The Alliance, among others, commented that the DSEIR's analysis of greenhouse gas ("GHG") emissions relied on the Project's defective AB 900 analysis to conclude that the Project had net zero GHG emissions. The FSEIR's response to these comments falls well below its duty of good faith.

Rather than candidly acknowledge that the DSEIR relied upon the analytical methodology followed in the AB 900 certification, which was fatally flawed, the City now attempts to distance itself from that analysis with a misleading claim that public commenters were somehow "confuse[d]" about the relationship between the AB 900 analysis and the DSEIR's analysis. (FSEIR, p. 13.14-5.) This response is nonsense. The public was not confused. To the contrary, public commenters correctly noted that the DSEIR expressly relied upon the AB 900 analysis to repeatedly represent that the Project would result in no net additional GHG emissions. To wit:

> Construction activities would also result in temporary increases in GHG emissions. However, as described above under Regulatory Framework, the proposed project is a certified environmental leadership project under AB 900, and CARB has determined that the project would not result in any net additional GHG emissions due in part to the voluntary purchase of carbon credits by the project sponsor.
>
> . . .
>
> Thus, the Governor's certification of the proposed project as a leadership project further supports the determination that the proposed project would not have a significant impact on global climate change due to GHG emissions . . .
>
> [A]nd because the proposed project would not result in any net additional GHG emissions, the project would not contribute to cumulative GHG emissions impacts.

(FSEIR, p. 14-123-125.)

Thus, there is no "confusion" by the public. And the City's attempt to eliminate this clear analysis in the FSEIR is evidence of the City's attempt to deceive the public regarding the Project's true GHG emissions. The DSEIR unquestionably asserted that the Project's GHG emissions had been quantified, and were a net zero. The assumptions and analysis supporting the DSEIR's conclusion is demonstrably flawed. As a result, the City has a legal duty under CEQA to publicly acknowledge and correct that flawed analysis. The City has not yet done this, which renders the FSEIR misleading and therefore defective as an informational document.

Rather than correct the DSEIR's defective GHG analysis, the City disingenuously sidesteps the issue by claiming that the FSEIR is now engaging in a purely "qualitative" analysis of GHG emissions rather than a "quantitative" analysis, as allowed by the CEQA Guidelines. (FSEIR, 13.14-5.) While it is true that the

referenced CEQA Guidelines permit an agency to use a qualitative analysis for GHG emissions in certain instances, this same guideline also advises, "A lead agency should make a good-faith effort, based on the extent possible on scientific and factual data." (CEQA Guidelines, § 15064.4, subd. (a).) Further a lead agency "shall have discretion to determine, in the context of a particular project, whether to" "use a model or methodology to quantify" GHG emissions or to "rely on a qualitative analysis." (CEQA Guidelines, § 15064.4, subd. (a)(1), (2).)

As explained in the attached letter by SCS Engineers ample information was available that allows the City to quantify the Project's GHG emissions, consistent with regulatory guidance. (See Exhibit 1, SCS Engineers Memorandum dated November 2, 2015.) Thus, while the City might ordinarily have discretion to utilize a qualitative analysis, that discretion is constrained because extensive quantitative data has already been prepared for the Project that was readily available to the City. (*Berkeley Keep Jets Over the Bay Committee v. Board of Board Commissioners of the City of Oakland* (2001) 91 Cal.App.4th 1344, 1371 (Berkeley Keep Jets) (agency abused discretion by not quantifying project's air emissions).) As in *Berkeley Keep Jets*, the City's failure to accurately disclose the Project's GHG emissions, and its evasive responses to comments asking for an adequate analysis, fail to satisfy its duty under CEQA.

One of the major defects in the DSEIR's GHG analysis was to exclude emissions associated with operation of the two office towers by claiming that this Project component is somehow "vested." Though, the DSEIR never acknowledges that fact. (FSEIR, p. 13.4-11-12.) The FSEIR openly "acknowledge[s]" this critical defect.

The City's response fails the good faith standard. First, it is telling that the City never even attempts to explain in the FSEIR how the office uses are "vested" in response to comment directly challenging that assumption. Second, even if the towers were somehow "vested," which they most surely are not, it is well established that a CEQA document must analyze the "whole of the action." (CEQA Guidelines, § 15378.) Unrealized hypothetical "permitted" or "vested" rights are not excluded from analysis of a project's impacts. (*Communities for a Better Environment v. South Coast Air Quality Management Dist*. (2010) 48 Cal.4th 310, 320.) Third, excluding the towers' GHG emissions establishes that the SEIR is premised on an inconsistent project description because the FSEIR analyzes the towers' impacts in other resources areas. (*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 197.) As just one example, the new CEQA Guidelines Appendix F analysis expressly includes energy requirements from the two towers. (FSEIR, 13.23-10.) If the towers were "vested" and therefore excluded from analysis, the DSEIR also would not analyze the tower's impacts in other resources areas either.

In conclusion, the FSEIR's analysis of GHG is fundamentally flawed and fails as an informational document. The responses to comments are evasive and misleading, and fail to satisfy the City's duty of good faith. Further, the information submitted by the Alliance constitutes substantial evidence of a fair argument that the Project will have a significant adverse effect on GHG emissions. (*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-3]*)

SCS does not agree with the conclusion that Project GHG emissions have been adequately addressed in the SEIR. The Responses to Comments dismiss criticism of the analysis performed for AB900 and indicate that the SEIR concludes that GHG emissions are not significant based on a qualitative analysis. SCS believes this level of analysis is inconsistent with existing guidance, that it fails to provide an accurate representation of the emissions from the project, and the inclusion of the AB900 analysis is misleading.

EXISTING GHG GUIDANCE

The SEIR is not consistent with guidance from regulatory agencies such as Bay Area Air Quality Management District (BAAQMD) or organizations such as the California Air Pollution Control Officers Association (CAPCOA).

The BAAQMD is the regulatory body for the San Francisco Air Basin (SFAB), which includes the Project location. The BAAQMD has issued CEQA guidelines in its *California Environmental Quality Act*

Air Quality Guidelines (BAAQMD, May 2012) document (BAAQMD Guidance) that include guidance on the assessment of GHG. While the BAAQMD is no longer recommending the thresholds in that document, the BAAQMD has indicated that other elements of that guidance can be utilized by planning agencies. That 2012 BAAQMD Guidance recommends the quantification of GHG emissions from projects for purposes of CEQA and states that "Emissions should be estimated in terms of carbon dioxide equivalent."

CAPCOA is an organization of air pollution control officers from all local air districts in California. It is not a regulatory agency, but it has provided guidance for agencies throughout the state on air pollution, air toxics, and climate change. CAPCOA issued *CEQA and Climate Change* (CAPCOA, January 2008). That guidance states that:

"…the defensibility of a CEQA analysis rests on the following concerns:

- Whether the public agency has sufficiently analyzed the environmental consequences to enable decision makes to make an intelligent decision;
- Whether the conclusion of the public agency are supported by substantial evidence in the administrative record; and
- Whether the agency has made a good faith effort to disclose significant effects."

The SEIR fails to meet these criteria because it has not sufficiently analyzed the environmental consequences, provided evidence of the conclusion, or made a good faith effort to disclose significant effects. As SCS noted in a memorandum dated July 20, 2015, the AB900 analysis of the Project is fundamentally flawed and inconsistent with California GHG policies. The SEIR does not sufficiently analyze GHG impacts from the Project other than by referencing the flawed AB900 analysis. Without quantification or more robust analysis of the actual GHG emissions from the Project, the public agency does not have sufficient information to make a decision, and the agency has not made a good faith effort to disclose significant effects.

Both the BAAQMD and CAPCOA have proposed quantitative GHG emission thresholds for purposes of determining significance for purposes of CEQA. While neither threshold is binding, the SEIR should compare the GHG emissions from the Project to the BAAQMD and CAPCOA thresholds to enable the public and policy makers to gauge the significance of GHG emissions.

GHG QUANTIFICATION

The SEIR has failed to quantify GHG emissions. If the Project is not relying on the AB900 analysis, as Response GHG-2 of the SEIR indicates, then no quantification of GHG emissions from the Project has been performed. Without quantification of the GHG emissions, the public agency cannot adequately determine whether how much GHG will be emitted by the Project relative to proposed significance thresholds, local GHG emissions, or other GHG sources.

As evidenced by the AB900 analysis, the tools to quantify GHG emissions exist. While the accounting methodology in the AB900 analysis is fundamentally flawed, the inventory methodology used in the analysis is generally appropriate for the quantification of GHG emissions from the Project. The BAAQMD Guidance lists several models that can be used by project proponents to quantify GHG emissions, including the Urban Emission Model (URBEMIS) and BAAQMD GHG Model (BGM). Voluntary registries such as The Climate Reserve (TCR) have also developed GHG quantification methodologies.

MISLEADING USE OF AB900 ANALYSIS

Response GHG-2 of the SEIR indicates that the SEIR is not relying on the AB900 analysis to demonstrate that GHG emissions are not significant, yet the SEIR makes repeated references to the AB900 analysis to support claims that GHG emissions are not significant. The AB900 analysis and the SEIR GHG analysis "have separate and distinct requirements and purposes," as stated on page 13.14-5. Thus, the AB900 analysis cannot and should not be relied upon by the SEIR as quantification of the GHG emissions from the Project. Nor should it be used to support conclusions for CEQA purposes unless it can be demonstrated that it is consistent with CEQA requirements for a GHG analysis. The SEIR has not

provided evidence that the AB900 analysis can or should be used to support conclusions about the significance of GHG emissions from the Project. The AB900 analysis is fundamentally flawed for purposes of CEQA for reasons described in the July 20, 2015 Memorandum provided by SCS.

Impact C-GG-1 states that "As part of the AB900 application, the project sponsor has committed to purchase carbon credits from a qualified GHG emissions broker in an amount to offset all GHG emissions from project construction and operations." This statement is misleading because it implies that the AB900 analysis is a sufficient analysis of the Project for CEQA purposes and that the Improvement Measure I-C-GG-1 provided consistent with the AB900 analysis is sufficient for CEQA purposes. The AB900 analysis uses inappropriate boundaries to analyze the GHG emissions and cannot be used for CEQA purposes. The SEIR appears to recognize the flaws of the AB900 analysis in suggesting it was not relied upon, but then it does just that – relies upon the AB900 analysis.

CONCLUSIONS

The Response to Comments in the SEIR indicate that the AB900 analysis is not being relied upon for CEQA purposes to demonstrate that GHG emissions from the Project are less than significant. If the AB900 analysis is not being relied upon, the SEIR has provided no quantification of GHG emissions for CEQA purposes and has misleadingly referred to the AB900 analysis to support the conclusion that GHG emissions are not significant. For reasons stated in the July 20, 2015 memorandum from SCS, the AB900 analysis of GHG emissions from the Project is fundamentally flawed and cannot be relied upon for CEQA purposes of determining significance.

GHG analysis used to support the determination that the Project met the requirements of CEQA or AB900 is insufficient to demonstrate that the GHG emissions from the Project will be net zero or less than significant under CEQA for the following reasons:

- The SEIR fails to provide an appropriate quantification of GHG emissions for CEQA purposes. In the response to comments regarding the use of the AB900 analysis, the SEIR indicates that the AB900 analysis is not being used as the basis for evaluating GHG emissions from the Project.
- The AB900 analysis omits planned office towers from the GHG emission calculation, as specifically noted on SEIR Vol. 4, p.13.4-11. Because it omits these towers, the GHG quantification is inappropriate for use as a CEQA baseline.
- The GHG analysis makes unsupported assumptions about Oracle Arena, trip linkage, and energy use which artificially lower the expected GHG emissions from the Project and do not provide an accurate evaluation of the GHG emissions that can be expected to result from the Project.
- The GHG analysis does not require project monitoring and periodic GHG reporting to assure the accuracy of the projected emissions.
- The GHG offsets proposed as a mitigation measure are not required to be consistent with California GHG reduction goals and policies, could be used for other projects, and may not ever be required for the operational emissions.
- Without the accurate quantification of GHG emissions from the Project, the amount of necessary offsets cannot be determined.

(*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-11]*)

Response to Late Comment GHG-1: Approach to Analysis

The commenter reiterates the same comments previously submitted as part of comments on the Draft SEIR regarding the SEIR greenhouse gases (GHG) emissions impact analysis and refutes the detailed response presented in the RTC document, Section 13.14, Response GHG-2. The commenter provides no additional supporting evidence or reasons for refuting the

responses and simply repeats the same assertions. The GHG emissions analysis in the Draft SEIR, as modified in the RTC document, is in full compliance with CEQA and the CEQA Guidelines, as described in RTC Response GHG-2 and elaborated upon below.

As explained in the RTC document, even though both the AB 900 process and the CEQA process require analysis of GHGs, the two processes have separate and distinct requirements and purposes. (RTC, pp. 13.14-5 to 13.14-6.) The Draft SEIR does not rely on the AB 900 process or the project's certification as an environmental leadership project under AB 900 for the impact significance determination. The language quoted in the comment to suggest the SEIR improperly relies on the AB 900 analysis is shown as ~~strikethrough~~ to show the text was deleted. (RTC document, p. 14-123-125.) This revision was made to clarify the distinction between the CEQA GHG emissions impact analysis and the AB 900 GHG analysis. (See RTC document, pp. 13.14-8 to 13.14-11.)

Qualitative Approach to GHG Impact Analysis

SEIR Section 5.5 (pp. 5.5-8 to 5.5-9) explains the approach to the analysis of the potential impacts of GHG emissions due to the proposed project. The GHG emissions significance thresholds are based on CEQA Guidelines Appendix G, section VII. These thresholds state that the project would have a potentially significant impact related to GHG emissions if the project were to: "generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases." The analysis used in the SEIR is consistent with CEQA Guidelines Sections 15064.4 and 15183.5, which address the analysis and determination of significant impacts from a proposed project's GHG emissions. CEQA Guidelines Section 15064.4 allows lead agencies to rely on a *qualitative* analysis to describe GHG emissions resulting from a project. CEQA Guidelines Section 15183.5 allows for public agencies to analyze and mitigate GHG emissions as part of a larger plan for the reduction of greenhouse gases and describes the required contents of such a plan.

Accordingly, San Francisco has prepared its own Greenhouse Gas Reduction Strategy,[1] which the BAAQMD has reviewed and concluded provides aggressive GHG reduction targets and comprehensive strategies that help the Bay Area move toward reaching the State's AB 32 goals. San Francisco's Greenhouse Gas Reduction Strategy identifies actions the City is implementing to achieve cleaner energy, energy conservation, and alternative transportation and solid waste policies. For instance, the City has implemented mandatory requirements and incentives that have measurably reduced GHG emissions; these actions include, but are not limited to, increasing the energy efficiency of new and existing buildings, installation of solar panels on building roofs, implementation of green building strategies, adoption of a zero waste strategy, a construction and demolition debris recovery ordinance, a solar energy generation subsidy, incorporation of alternative fuel vehicles in the City's transportation fleet (including buses), and a mandatory recycling and composting ordinance. The Strategy

[1] City and County of San Francisco, 2010. *Strategies to Address Greenhouse Gas Emissions in San Francisco*. Prepared by the San Francisco Planning Department. November 2010.

identifies 42 specific regulations for new development that would reduce a project's GHG emissions. San Francisco's policies and programs have resulted in a reduction in GHG emissions to below 1990 levels, exceeding statewide AB 32 GHG reduction goals.

The San Francisco Greenhouse Gas Reduction Strategy contains a quantitative analysis of City-wide GHG emissions and required reductions to lower City-wide GHG emissions to 1990 levels by 2020. The Greenhouse Gas Reduction Strategy quantifies the effects of actions to lower GHG emissions and determines that the implementation of the Greenhouse Gas Reduction Strategy will reduce GHG emissions in San Francisco to 1990 levels by 2020. The quantification completed for the Greenhouse Gas Reduction Strategy is sufficient such that projects compliant with the Strategy do not need to quantify their own individual GHG emissions.

The commenter points out that the BAAQMD CEQA Guidelines contain quantitative standards of significance, which were not addressed in the Draft SEIR or RTC document. However, this is a selective characterization of the BAAQMD CEQA Guidelines, which also allow "Compliance with Qualified Greenhouse Gas Reduction Strategy" as the threshold of significance in addition to the options of two quantitative thresholds. "Compliance with a Qualified Greenhouse Gas Reduction Strategy" is actually the first of the three alternative thresholds recommended by the BAAQMD and is the threshold OCII applied for the proposed project, as the City and County of San Francisco was one of the first lead agencies to have a GHG Reduction Strategy approved by the BAAQMD. This approach is consistent with how all other projects in San Francisco determine the significance of their GHG emissions.

Furthermore, the CAPCOA guidance cited by the commenter is considered by the BAAQMD in developing its own guidance, which OCII has elected to use to select the threshold of significance method for the proposed project, consistent with standard practice in San Francisco since the Greenhouse Gas Reduction Strategy was approved by the BAAQMD in October 2010.

The SEIR GHG emissions analysis determined that the proposed project would be consistent with San Francisco's Greenhouse Gas Reduction Strategy, as documented on the Greenhouse Gas Analysis Compliance Checklist (Impact C-GG-1, SEIR pp. 55.5-10 to 5.5-12). Because the City's local GHG reduction targets are more aggressive than those of the region or the State, consistency with the City's Greenhouse Gas Reduction Strategy necessarily demonstrates consistency with the State's GHG regulations, the Governor's executive orders, and the Bay Area 2010 Clean Air Plan. Therefore, the project's impacts related to GHG emissions were determined to be less than significant.

The comment cites *Berkeley Keep Jets Over the Bay Committee v. Board of Board Commissioners of the City of Oakland* (2001) 91 Cal.App.4th 1344, 1371 (*Berkeley Keep Jets*), for the proposition that OCII was required to perform quantitative analysis for GHG impacts because quantitative data were available. Nothing in that case, however, suggests that OCII was required to perform a quantitative analysis in additional to the qualitative analysis included in the Draft SEIR.

In *Berkeley Keep Jets,* the court found an EIR's analysis of air quality impacts to be inadequate where the agency made no attempt to assess the health effects of Toxic Air Contaminants (TACs) emitted from mobile sources and therefore did not determine whether there would be a significant impact or discuss mitigation measures that might reduce the potential impact. In response to comments on this subject, the final EIR simply stated that the public health impact of the TAC emissions was "unknown" because there was no standard for evaluating the significance of the risk associated with mobile-source emissions of TACs. (*Berkeley Keep Jets*, *supra*, 91 Cal.App.4th at p. 1367.) Evidence was submitted to the agency, however, showing that an approved and standardized protocol did exist which would enable the agency to conduct a health risk assessment. (*Ibid*.) The court held that the agency could not ignore this information and must attempt to quantify the TAC emissions from mobile sources and determine whether those emissions would result in any significant health impacts. The court did not prescribe any particular methodology that the agency was required to use for its analysis. It simply found the agency's conclusion that there was no method available, and therefore no analysis could be performed, was unsupported. Here, in contrast, the Draft SEIR does analyze GHG emissions impacts and uses a qualitative analysis to analyze GHG impacts as permitted by CEQA Guidelines section 15064.4. OCII was not required to also perform a quantitative analysis to comply with CEQA. As the comment notes, a lead agency "shall have discretion to determine . . . whether to use a model or methodology to quantify GHG emissions" or to "rely on a qualitative analysis." (CEQA Guidelines, § 15064.4, subd. (a)(1), (2).)

The comment's disagreement regarding the methodology used to analyze GHG emissions impacts is noted. Under the substantial evidence standard, however, such disagreement does not mean the methodology was wrong or that additional analysis is required. (See *North Coast Rivers Alliance v. Marin Municipal Water District Board of Directors* (2013) 216 Cal.App.4th 614, 642 [substantial evidence standard applies "to disagreements concerning the methodology used for studying an impact, and the reliability or accuracy of the data upon which the EIR relied."].) As explained by the California Supreme Court: "A project opponent or reviewing court can always imagine some additional study or analysis that might provide helpful information. It is not for them to design the EIR. That further study . . . might be helpful does not make it necessary." (*Laurel Heights home Improvement Assn. v. Regents of the Univ. of Cal.* (1988) 47 Cal.3d 376, 415.)

Relationship to AB 900 GHG Analysis

The commenter repeats assertions that the SEIR GHG emissions impact analysis relied on the results of AB 900 GHG analysis. This is clearly not true. As described above, the SEIR GHG emissions impact analysis is based on finding consistency of the project with San Francisco's Greenhouse Gas Reduction Strategy. The quantification of GHG emissions for AB 900 is separate and independent from the determination of significance required for CEQA. As a matter of disclosure, however, the SEIR GHG emissions impact discussion does include a description of the AB 900 process, under which the California Air Resources Board determined that the proposed project would not result in any net additional GHG emissions for purposes of certification as an environmental leadership project under AB 900. Thus,

whether or not the AB 900 GHG emissions quantification included the office towers is immaterial to the determination of CEQA significance.

Furthermore, the comment states that the Draft SEIR's GHG emissions impact analysis is defective because it excluded emissions associated with operation of the two proposed office towers by claiming that this project component is "vested." The comment is wrong. The Draft SEIR analyzes potential GHG emission impacts for the entire project, including the office towers, using the qualitative methodology described above. (Draft SEIR, pp. 5.5-1 to 5.5-12.) Again, the comment seems to confuse the GHG analysis conducted for the AB 900 process with the GHG emissions impact analysis conducted for the SEIR as part of the CEQA environmental review process. As explained in the RTC document, even though both the AB 900 process and the CEQA process require analysis of GHGs, the two processes have separate and distinct requirements and purposes. (RTC, pp. 13.14-5 to 13.14-6.) The Draft SEIR does not rely on the AB 900 process or the project's certification as an environmental leadership project under AB 900 for the impact significance determination. Because the comment is referring to the AB 900 analysis and not the CEQA analysis in the Draft SEIR, the case law cited in the comment - *Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 320 (*CBE*) – regarding the adequacy of EIRs does not apply.

The comment also states that excluding the towers from the SEIR's GHG emissions impact analysis but including them in the analysis of other impacts resulted in an inconsistent project description in violation of the court's holding in *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185 (*County of Inyo*). As noted above, the SEIR does not omit the office towers from any of the impact analyses and the project description is consistent and complete throughout the document. Therefore, *County of Inyo* does not apply.

GHG Monitoring and Reporting

The commenter also states that the GHG analysis does not require project monitoring and reporting. As described above, the GHG impact was determined to be less than significant based on the project's consistency with the City's Greenhouse Gas Reduction Strategy. Although no mitigation measures are required for this less-than-significant impact, the regulations listed in the Greenhouse Gas Analysis Compliance Checklist is included in the Mitigation Monitoring and Reporting Program (MMRP), which, as described in Section 13.7 of the RTC document, Response IO-2, is part of the conditions of project approval.

Improvement Measure: Purchase Voluntary Carbon Credits

As described above, SEIR Impact C-GG-1 was determined to be less than significant, and therefore no mitigation is required under CEQA. However, in acknowledgment of the project's designation as an environmental leadership project under AB 900 and its associated requirements, the SEIR includes Improvement Measure I-C-GG-1, Purchase Voluntary Carbon Credits. Inclusion of this improvement measure in the SEIR requires that this measure be included in the MMRP and further confirms the project sponsor's commitment to implement the measure. The amount of offsets is immaterial to the CEQA analysis, as no

mitigation is required under CEQA. Please see Response AB-1 in Section 13.4 of the RTC document for more detail on the offsets required by AB 900.

Project Design Features

The commenter appears to suggest that project design features that are beneficial in terms of reducing GHG emissions should be treated as mitigation measures and not part of the project description. The commenter does not identify any specific design features in making this comment. The way a project is designed will necessarily impact the types, and significance, of environmental effects that may be caused by a project. Therefore, a lead agency should (and OCII properly did) evaluate the proposed project's potential GHG impacts in consideration of the project as proposed by the project proponent. (See, e.g., *North Coast Rivers Alliance v. Marin Municipal Water Dist. Bd. of Directors* (2013) 216 Cal.App.4th 614, 652 [upholding the GHG analysis for a desalination project and acknowledging that the design of the project "incorporate[s] high-efficiency pumps and the most advanced energy recovery systems available. The facility's system operations would also be designed to minimize energy use depending on the salinity and temperature of the Bay water."].) This approach is consistent with CEQA and is distinguishable from *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645 (*Lotus*). In *Lotus*, the EIR assumed as part of the project description that various, unspecified construction techniques that could "be done at the discretion of the contractor" would be implemented and determined impacts to old growth redwood trees were less than significant in consideration of these construction techniques. The court held that these types of construction techniques were too vague and uncertain, and should have been treated as mitigation measures for the purposes of CEQA.

SECTION 12: RESPONSES TO LATE COMMENTS ON WIND

The comments and corresponding responses in this section cover topics analyzed in SEIR Section 5.7, Wind and Shadow, as augmented in RTC document Sections 12.2 and 13.15. These include topics related to:

- Issue WS-1: Wind Impacts

Issues Raised by Late Commenters on Wind Impacts

This response addresses all or part of the following comments, which are quoted below:

O-MBA16S6-4

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4. Wind and Shadow

MBA previously commented that the DSEIR failed to analyze the Project's impact on on-site open space, which renders it defective as an informational document. (FSEIR, p. 13.15-1.) The FSEIR's response to this comment is not made in good faith, and instead is intended to conceal a significant impact (and thereby avoid recirculation) and improperly deferred mitigation.

The FSEIR first suggests that the open space provided on-site is somehow exempted from analysis because it consists of "publically [sic] accessible but private recreational areas." (FSEIR, p. 13.15-1.) This characterization, however, is inconsistent with the FSEIR's characterization of this open space as counting towards the Project's requirement to construct 0.46 acres of open space for each 1.0 acre of development area, which the FSEIR characterizes as "directly serv[ing] the project's demand for recreational facilities." (FSEIR, p. 13.16-3.) It is also inconsistent with the project applicant's own application materials, which provide:

> DESIGN NARRATIVE: OPEN SPACE
> The goals of the landscape design at Blocks 29-32 are to develop a unique place identity, ***to connect new public spaces to the larger neighborhood, and to serve as a local and regional amenity. In addition to maximizing the quality of public space amenities for visitors and community members***, the landscape design also incorporates a diverse array of sustainability strategies.
>
> . . .
>
> Third Street Gardens and Plazas
>
> . . .
>
> This space is intended to both facilitate a porous connection between the street and the main plaza ***and serve as an independent public space***.
>
> . . .
>
> Main Plaza
> The main plaza is designed to accommodate seasonal programming and large events for the Bay Area community, as well as ***function as a quality public space for the local neighborhood***. To accomplish this, the space is designed with maximum flexibility at its heart. Large-scale occupiable movable planters can be rearranged to accommodate various programs.
>
> Generous lawn panels and a few large specimen trees will create a neighborhood park atmosphere during non-event times.

(Golden State Warriors Even Center and Mixed-Use Development Combined Basic Concept/Schematic Design Submittal, Blocks 29-32: Open Space, Gatehouse & Parking and Loading, p. 5 (emphasis added).)

In other words, the FSEIR characterizes this open space as "private" to avoid a wind analysis, but "public" for purposes of dismissing impacts to recreational facilities. The FSEIR's characterization of this space as "private" is also inconsistent with the project applicant's repeated representations about this space. This type of shifting project description is misleading and thwarts informed decision-making. (*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 197.)

What is more, the FSEIR's attempt to narrow the scope of the required wind analysis by reference to Planning Code section 148 is misplaced. Indeed, if one were to simply apply the scope of that code section directly, it would not apply at all because the Project is being developed in a redevelopment area. Here, the 1998 Mitigation Monitoring and Reporting Program did not limit the application of a wind analysis to only those instances where Section 148 would apply on its own terms, but rather much more broadly:

> Require a qualified wind consultant to review specific designs for buildings 100 feet or more in height for potential wind effects. The Redevelopment Agency would conduct wind review of high-rise structures above 100 ft. Wind tunnel testing would also be required unless, upon review by a qualified wind consultant, and with concurrence by the Agency, it is determined that the exposure, massing, and orientation of buildings are such that impacts, based on a 26-mile-per-hour hazard for a single hour of the year criterion, will not occur. The purpose of the wind tunnel studies is to determine design-specific impacts based on the above hazard criterion and to provide a basis for design modifications to mitigate these impacts. Projects within Mission Bay, including UCSF, would be required to meet this standard or to mitigate exceedances through building design.

(1998 EIR, p. VI.6., mitigation measure D.7.)

Thus, by its own terms this mitigation measure applies to "high-rise structures above 100 ft." within any land use designation, and the scope of the affected area to review is in no way limited to "public open space" rather than so-called "private open space." Nor is there any explanation that the scope of affected area is to be limited by Section 148.

The FSEIR's misrepresentation on this issue is important because the FSEIR acknowledges that the Project would "exceed the wind hazard criterion" at no less than "three test points on the project site," but promptly dismisses the significance of those exceedances because "wind effects at these locations are not considered significant impacts on the environment." (FSEIR, p. 13.15-3.) The FSEIR reaches this strained legal conclusion, however, in order to avoid the factual issue that the de facto mitigation offered for that significant impact is impermissibly deferred under CEQA.

In short, the FSEIR undertakes a tortured legal analysis in order to conceal from the public the Project's significant wind impacts on public open spaces within the Project. The SEIR must be recirculated to disclose this significant impact. (*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-4]*)

Response to Late Comment WS-1: Wind Impacts

The commenter claims the Draft SEIR failed to analyze the project's impact on on-site open space, and that this was intended to conceal a significant impact. As discussed in the Draft SEIR and in RTC document Section 13.15.2, Wind and Shadow, Response WS-1, consistent with the determination made in the 1998 Mission Bay FSEIR, the use of City Planning Code Section 148's wind hazard standards are an appropriate methodology and criteria for the analysis of the proposed project. The intent and applicability of the City's Section 148 wind hazard standards are to assess the environmental impact of winds in public areas of substantial pedestrian use. Section 148 criteria are not applied to private open spaces (with

or without public access), service areas, and other non-public areas. Consequently, the SEIR explicitly stated that the potential project exceedance of this hazard criterion in *off-site public* areas would be a significant environmental impact. Accordingly, the SEIR appropriately analyzes project wind hazard effects at off-site public areas, and identifies feasible mitigation measures to reduce those effects. However, because Section 148 criteria are not applicable to private areas, the wind effects on *on-site* publically accessible open space are not considered a significant environmental impact.

Nevertheless, because project wind effects on pedestrians at on-site, private open space may be of interest to members of the public and to decision-makers, the SEIR also presented a separate discussion of potential wind effects at the on-site areas of substantial pedestrian use, although this was for informational purposes only. The SEIR reported that this wind analysis indicated three test points on the project site would exceed the wind hazard criterion, and noted that the project sponsor would consider a range of feasible design refinements to effectively reduce on-site wind effects, including but not limited to, the proposed addition of landscaping within the plazas; and the potential installation of vertical porous screens, overhead protection such as tilted foils and archways, and/or other screening features on the event center perimeter walkway and other publicly accessible areas. As explained above, however, wind effects at these on-site private open space locations are not considered significant impacts on the environment, and therefore, mitigation is not required.

The commenter asserts that the "FSEIR first suggests that open space provided on-site is somehow exempted from analysis because it consists of 'publically-accessible but private recreational areas.' " As discussed above and in Response WS-1 in the RTC document, the significance criteria used in the SEIR for potential wind hazard impacts are not applied to private open spaces; and furthermore, while the SEIR did discuss potential wind hazard effects at certain on-site privately-owned, publically accessible areas for informational purposes, such wind effects at these on-site publically accessible areas are not considered significant impacts on the environment.

The commenter claims the wind hazard significance criteria presented in the SEIR Wind and Shadow section is inconsistent with the Mission Bay Plan's public open space requirements for new development that were presented in the Initial Study Recreation section. As discussed above, the SEIR wind hazard standards assessed the environmental impact of winds in public areas of substantial pedestrian use; this included public sidewalks (e.g. along Third Street, 16th Street, Terry A. Francois Boulevard and South Street) and public parks (e.g., Bayfront Park) in the project vicinity. The Mission Bay Plan's public open space requirements that the commenter refers to (i.e., ratio of 0.46 acres of open space for each 1.0 acre of developable area) are related to the amount of open space within the Mission Bay Plan's Open Space parcels (e.g., those that comprise Bayfront Park) that would need to be developed for each acre of developable area; this open space requirement does apply to the privately-owned publically-accessible open space being developed within Blocks 29-32. The

wind hazard significance criteria and Mission Bay Plan's public open space requirements are not related to each other, and there is no inconsistency between the two.

Similarly, the commenter claims the wind hazard significance criteria presented in the FSEIR Wind and Shadow section are inconsistent with the project sponsor's application materials, including the Design Narrative: Open Space. However, the FSEIR makes clear that the project proposes privately-owned, publically accessible space within the project site, and accordingly, that wind effects at these on-site private open space locations are not considered significant impacts on the environment. The wind hazard significance criteria and sponsor's Design Narrative for Open Space are not related to each other, and there is no inconsistency between the two.

In short, the discussion of open space from other documents that is quoted in the comment is not relevant to the wind impacts analysis. In any event, the comment does not identify any statements that are inconsistent with the information in the wind section, either in the Draft SEIR or elsewhere.

The comment cites *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, to suggest the inconsistent characterization of on-site open space mislead the public regarding the Project's potential wind impacts. As explained above, there are no inconsistencies in the description of on-site open space in any of the documents cited in the comment. In any event, *County of Inyo* is inapposite. As noted by the court in *Citizens for a Sustainable Treasure Island v. City and County of San Francisco* (2014) 227 Cal.App.4th 1036, 1062, "the problem with the EIR in *County of Inyo* was that the project description changed throughout the document itself. Many of the environmental impacts described in the EIR were related to the much broader project, rather than the smaller project described at various other points in the EIR." That has not occurred here. The comment does not point out any instances in the Draft SEIR where the project's open space elements are described inconsistently.

The comment states that the wind analysis is inconsistent with the 1998 Mission Bay SEIR and mitigation included in that document. That is not correct. Prior to discussing mitigation for wind impacts, the 1998 SEIR states: "The following mitigation measure is required to ensure that any potentially significant wind effect resulting from project are identified, evaluated and mitigated. While the standards of city Planning Code Section 148 do not apply to the project, its standards provide an appropriate methodology and criterion for the analysis of wind effects." (1998 Mission Bay SEIR, p. A.36.) Thus, consistent with the 1998 Mission Bay SEIR, the wind analysis performed for the project properly used Section 148 as the methodology and criterion for the analysis of wind effects. As explained above, Section 148 criteria are not applied to private open spaces (with or without public access), service areas, and other non-public areas. Therefore, as explained in the SEIR, potential wind effects at on-site publically accessible open space are not considered a significant impact on the environment. The commenter also asserts that Planning Code Section 148 should not apply to the project since the project site is located within a redevelopment area. As explained above, and further in Section 5.6 of the Draft SEIR, and in Section 13.15, Response WS-1, in

the RTC document, the Mission Bay FSEIR determined the use of City Planning Code Section 148's wind hazard standards were an appropriate methodology and criteria for the original wind analysis conducted for the Mission Bay Redevelopment Plan. Consistent with the determination made in the Mission Bay FSEIR, the use of City Planning Code Section 148's wind hazard standards are an appropriate methodology and criteria for the analysis of individual projects planned in the Mission Bay Redevelopment Plan area.

The commenter then references the discussion of wind effects of on-site publically-accessible areas of substantial pedestrian uses that was presented in the SEIR. As stated above, this discussion of potential wind effects at on-site publically-accessible areas was presented in the SEIR for informational purposes only. Furthermore, the SEIR notes that while wind effects at these locations are not considered significant impacts on the environment, and therefore, mitigation was not required, the project sponsor would consider a range of feasible design refinements to effectively reduce on-site wind effects.

See Response WS-1 in the RTC document for additional information on wind impacts.

SECTION 13: RESPONSES TO LATE COMMENTS ON RECREATION

The comment and corresponding response in this section cover topics analyzed in the Initial Study, Section E.10, Recreation, which is included in Appendix NOP-IS of the SEIR, as augmented in RTC document Section 13.16. These included comments related to:

- Issue REC-1: Bayfront Park

Issues Raised by Late Commenters on Bayfront Park

This response addresses all or part of the following comments, which are quoted below:

O-MBA16S6-5

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5. Recreation

The Alliance previously commented that the DSEIR's project description, including the routine influx of up to 18,000 people up to 225 times a year, refuted the DSEIR's conclusory assertion that the Project's demand for recreational facilities "would generally be consistent with that described in the Mission Bay FSEIR." The FSEIR fails to provide a good faith response to this comment. Rather than actually cite any report or analysis, the FSEIR merely restates its prior unsubstantiated claim. (DSEIR, p. 13.16-2.) Thus, there is no evidence whatsoever supporting this conclusion.

In the absence of any meaningful analysis regarding the Project's demand for recreational facilities, the FSEIR claims that the Project will not substantially degrade Bayfront Park in part because of "the inclusion of on-site publically accessible open space proposed by the project that would directly serve the project's demand for recreational facilities." (FSEIR, 13.16-3.) Yet this characterization of the Project's "open space" is inconsistent with the FSEIR's treatment of these areas in its wind analysis, which it characterizes as "publicly accessible but private recreational areas," (FSEIR, 13.15-1.) The FSEIR's inconsistent treatment of this important component of the Project thwarts informed decision-making and public participation.

The FSEIR also fails to respond in good faith to comments about hazardous materials exposure associated with construction and occupancy of Bayfront Park. The City first claims that Bayfront Park is somehow a separate CEQA project notwithstanding the fact that its existence is triggered by construction of the arena. (FSEIR, 13.16-4.) Setting aside the FSEIR's attempted legal obfuscation, the FSEIR then conclusively asserts that all issues of hazardous materials are satisfied because a Risk Management Plan ("RMP") has been approved for the area. (FSEIR, 13.16-5.) This response, however, ignores that the RMP itself is not sufficiently protective of human health because it is: (i) premised on outdated screening levels that are significantly higher than now utilized; (ii) does not address contaminated soil that was subsequently imported onto the Project site; and (iii) does not even address several contaminants that have been recently identified onsite at levels well above current screening levels.

In summary, the information submitted by the Alliance constitutes substantial evidence of a fair argument that the Project will have a significant adverse effect on recreational facilities. In the alternative, per CEQA section 21166 and CEQA Guidelines section 15162, the facts described above constitute a change in circumstances since the 1998 SEIR involving, and significant new information showing, a new significant effect not previously analyzed in the 1998 SEIR. Under either standard, the City must prepare and circulate for public comment an environmental impact report to review the Project's impacts on recreational facilities. (*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-5]*)

Response to Late Comment REC-1: Bayfront Park

The commenter asserts that the FSEIR provides no evidence supporting why the project's demand for recreational facilities would generally be consistent with that described in the Mission Bay FSEIR. As explained in RTC document Section 13.16.2 (Response REC-1), the Initial Study Section E.10, Recreation, acknowledges that development of the proposed project would increase demand for recreational facilities. Such demand would generally be consistent with that described in the Mission Bay FSEIR for the entire Plan area and would be readily met by planned parks and open space areas developed as part of the Mission Bay Plan, as well as by existing facilities in the project vicinity. As reported in the Initial Study, the Mission Bay FSEIR indicated 47 acres of open space were proposed within the Mission Bay Plan area, of which more than 15 acres of new, non-UCSF parks and open space have been completed. Pursuant to the Mission Bay Plan, open space would be constructed with each phase of Mission Bay development, in the amount of 0.46 acres of open space for each 1.0 acre of developable area until all open space is developed. The SEIR Initial Study, Recreation, also noted that the commercial uses proposed under the project would be located within the recommended 900-foot distance of open space, pursuant to the Mission Bay Plan.

As discussed in the RTC document, Section 13.16.2, Response REC-1 (page 13.16-5), existing and planned urban recreational facilities, such as Bayfront Park, Agua Vista Park, Bay Trail, and the cycle track on Terry A. Francois Boulevard are/would be designed and constructed to withstand substantial use and are capable of serving large numbers of visitors. These public facilities are regularly maintained by the applicable City departments to ensure substantial deterioration from use does not occur.

The project also proposes on-site open spaces areas to serve the project demand, including the proposed landscaped Third Street Plaza, the Southeast Plaza, Bayfront Overlook, Food Hall roof and various on-site pedestrian paths. Convenient bicycle facilities would also be located throughout the project site, including bike racks, and during events, temporary bike corrals. These on-site areas would directly serve the project demand for recreational facilities, and consequently, would limit the project demand for use of, and any associated effects to, other existing nearby recreational facilities.

Given the availability of existing recreational facilities in the project vicinity and region and the ability of these facilities to accommodate large crowds combined with the inclusion of on-site publically accessible open space proposed by the project that would directly serve the project's demand for recreational facilities, the increased use of existing recreation facilities would not result in substantial physical deterioration of these resources, or otherwise result in physical degradation of existing recreational resources. As explained in the Initial study, the proposed project's impacts on recreational resources were determined to be less than significant, and no mitigation is required. Furthermore, the project would not result in any new or substantially more severe impacts than those previously identified in the Mission Bay FSEIR.

The commenter also asserts that the characterization of the project's demand for "on-site publically-accessible open space" is inconsistent with the FSEIR's treatment of these areas in its wind analysis, which it characterizes as "publicly accessible but private recreational areas." However, the FSEIR accurately describes the project as a privately-owned development, but would provide on-site publically-accessible open space areas that would offer a variety of programmed and passive recreational uses. Consequently, there is no inconsistency between references in the SEIR to the proposed on-site publically-accessible open space and on-site publically-accessible recreational areas. More importantly, consistent with the significance criteria expressly used for each topic, the SEIR appropriately analyzes all potential project and cumulative impacts to off-site public recreational resources and facilities (see Initial Study Section 10, Impact RE-1, RE-2 and RE-3). Please also see Response to Late Comment WS-1: Wind Impacts, above.

The commenter also disputes that Bayfront Park is a separate CEQA project from the proposed project. As discussed in Section 13.16.2, Response REC-1, the Bayfront Park public access improvements on P22 are triggered by development on Block 29-32 according the Mission Bay Plan. However, Bayfront Park is not part of the project and therefore does not need to be analyzed in the SEIR for the proposed project. Bayfront Park was planned as part of the Mission Bay Plan and analyzed in the Mission Bay FSEIR long before the project and will be implemented by the master developer, FOCIL-MB, LLC. Environmental review for the park has already been completed as part of the Mission Bay Plan and portions of the park have already been developed. Further, the project and Bayfront Park each have independent purposes, can be implemented independently, and have different project sponsors. Therefore, Bayfront Park was not required to be analyzed in the SEIR as a component of the project. Nevertheless, potential cumulative impacts of the development of Bayfront Park were appropriately addressed in the SEIR.

The commenter contends that the FSEIR fails to respond in good faith to comments relating to the potential exposure to hazardous materials at the Bayfront Park. The commenter's reasoning is that the 1999 Mission Bay Risk Management Plan (RMP) is not sufficiently protective of human health because it (i) is premised on outdated screening levels that are significantly higher than now utilized; (ii) does not address contaminated soil that was subsequently imported onto the Project site; and (iii) does not even address several contaminants that have been recently identified onsite at levels well above current screening levels.

OCII disagrees with this comment and has responded in good faith to the issues raised by the comment. Both the RTC document Section 13.22 and Responses to Late Comments Section 18 provide extensive discussion of why the implementation of the RMP and the legally required Article 22A of the San Francisco Health Code (as specified in the RMP) ensure that the public would not be exposed to hazardous materials in the soil during construction and subsequent use of sites within the Mission Bay Plan area. While much of the discussion focuses on requirements as they relate to the project site, the same requirements are applicable to all development sites in the Mission Bay Plan area, including Bayfront Park.

As discussed in Response HAZ-9 of the RTC document, construction activities at Bayfront Park would need to comply with the requirements of the RMP that address notification of the RWQCB; handling and reuse of soil; air monitoring; design of utilities; use of backfill; and storage, treatment, and disposal of excavated soil. Section 4.3.5.5 of the 1999 Mission Bay RMP requires that soil used in landscaped areas accessible for human use must meet the prevailing standards for clean fill used in commercial development or meet specific requirements specified in the RMP. The fill must be between 1 and 1½ feet deep and must be underlain with water permeable synthetic fabric, which would restrict contact with contaminated soil by park users once the park is constructed. Soil containing visible or free flowing hydrocarbons may not be reused on site.

Further, as specified in the 1999 Mission Bay RMP and discussed in Responses HAZ-1 and HAZ-9 of the RTC document as well as Response to Late Comment HAZ-1, construction activities at Bayfront Park would be subject to Article 22A of the San Francisco Health Code (the Maher Ordinance), which requires site specific analysis of soil and groundwater and preparation of a site mitigation plan if hazardous substances are detected above California hazardous waste levels, RWQCB Environmental Screening Levels, or DTSC's California Human Health Screening Levels. In addition, the work will require preparation of a Dust Control Plan in accordance with Article 22B of the San Francisco Health Code which supplements the requirements of the RMP. While the measures specified in the 1999 Mission Bay RMP are deemed appropriate for the protection of human health and the environment during and after construction, in the event any special site conditions are found at the site during the implementation of the requirement specified above, Section 4.3.11 of the RMP requires the developer to prepare a site-specific RMP supplement if it is determined that the 1999 Mission Bay RMP does not adequately address site risks. Upon completion of construction, the developer would be required to submit a closure report to the San Francisco Department of Health, Environmental Health Branch, Site Assessment and Mitigation (EHB-SAM) documenting compliance with the RMP, site-specific RMP supplement, and Articles 22A and 22B of the San Francisco Health Code. With implementation of the requirements described above, park users would not be exposed to unacceptable levels of hazardous materials, and use of the park would not result in significant environmental impacts related to exposure to hazardous materials. As discussed in Response to Late Comment HAZ-1, the EHB-SAM has confirmed the applicability of Articles 22A and 22B of the San Francisco Health Code and their role in the regulatory oversight at Mission Bay sites.[2]

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[2] Cushing, Stephanie K. J., Principal Environmental Health Inspector, City and County of San Francisco Department of Public Health, Environmental Health, 2015. Letter dated November 10, 2015 to Karen Toth, Department of Toxic Substances Control, regarding Soluri Meserve Letter—October 23, 2015, Mission Bay Development Contamination, including all attachments.

SECTION 14: RESPONSES TO LATE COMMENTS ON UTILITIES

The comments and corresponding responses in this section cover topics analyzed in SEIR Section 5.7, Utilities and Service Systems and the Initial Study, Section E.11, Utilities (see Appendix NOP-IS of the SEIR), as augmented in RTC document Section 13.17. These include topics related to:

- Issue UTIL-1: Cumulative Impacts on Wastewater Facilities
- Issue UTIL-2: Description of Interim Improvements

Issues Raised by Late Commenters on Cumulative Impacts on Wastewater Facilities

This response addresses all or part of the following comments, which are quoted below:

A-UCSF2-4 O-MBA20L7-6

- Finally, we ask that the City produce an explanation of how the wastewater treatment capacity at Mission Bay's Mariposa basin will be made adequate to serve all projected development at Mission Bay, and what the mitigation plan is and the solution is to this longstanding problem. Despite repeated requests from UCSF, the City has produced no information, nor identified a specific solution to this problem. This will affect all development parties at and around Mission Bay, including UCSF, both in wastewater service for existing facilities, as well a proposed new facilities. (*University of California San Francisco, Lori Yamauchi, letter, November 3, 2015 [A-UCSF2-4]*)

A. The Response to Comment UTIL-3 is Inadequate.

The response to comment UTIL-3 states:

> Impact C-UT-2 explains that the project, in combination with past, present, and foreseeable future development in the drainage area of the Mariposa Pump Station, would require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. As the owner and operator of the combined sewer system, the SFPUC is responsible for design and construction of the needed improvements to the wastewater facilities in the Mariposa sub-basin. The SFPUC has not identified the specific improvements that would be required to accommodate wastewater flows from the reasonably foreseeable projects and site-specific analysis cannot be performed until they are identified by the SFPUC. (SEIR, p. 5.7-15.) For this reason, site-specific environmental review for the future improvements cannot be included in the SEIR.
>
> Although it is not possible to analyze the impacts of construction of the permanent pump station improvements in greater detail than provided in the SEIR because the SFPUC has not identified specific improvements required, Impact C-UT-2 discloses the type of environmental impacts that would be expected from construction of new wastewater treatment facilities or expansion of existing facilities and the likelihood that such impacts will occur. This discussion satisfies CEQA's requirements for cumulative impacts analyses. (CEQA Guidelines, § 15130, subd. (b); see also Association of Irritated Residents v. County of Madera, supra, 107 Cal.App.4th at p. 1403 [cumulative impacts analysis satisfies CEQA when it "sets forth the possible cumulative impacts . . . and then analyzes the likelihood of the actual occurrence of such impacts"].)

> Any future permanent improvements to address cumulative wastewater impacts are not part of the project and are not a reasonably foreseeable consequence of the project itself. (SEIR, pp. 5.7-11 to 5.7-13 [the existing wastewater treatment facilities have sufficient capacity for the proposed project by itself].) Rather, as explained in Impact C-UT-2, the improvements would be necessary only as a result of the combined demand on the wastewater system from the project in combination with other future cumulative development projects in the drainage area of the Mariposa Pump Station. Future improvements in the SFPUC's wastewater system are beyond the project sponsor's control.

(FSEIR, Vol. 5, pp. 13.17-11.)

This response essentially says that the Project is "first come, first served" for purposes of using up remaining sewer system capacity in the Mariposa sub-basin. But the assertion that the cumulative future projects listed in the referenced report by Hydroconsult Engineers (i.e., Blocks 25b, 33-34, 40 and Hospital Phase 2),[1] will be operational further in the future than the Project is unsupported. In fact, these cumulative future projects are not even listed in the cumulative future projects list on page 5.1-8 - 10. As a result, the SEIR's assertions are unsupported and untestable.

The response's assertion that "Future improvements in the SFPUC's wastewater system are beyond the project sponsor's control" is also unsupported; in fact, it is contradicted by overwhelming evidence. Where it is advantageous to the project, the SEIR assumes the City will do things over which the project sponsor has no control to support the project, e.g., comply with its NPDES permit, provide transportation infrastructure to handle the crowds, etc. Indeed, the City is named as a responsible party or is directly involved in dozens of mitigation measures identified in the proposed Mitigation Monitoring and Reporting Program.[2] But here, the SEIR takes an inconsistent position, disclaiming any Project Sponsor control over a different matter within the City's control, i.e., expansion of the sewer system, apparently for no reason other than it is advantageous to the project to do so.[3]

Footnote:

1 Hydroconsult Engineers, Inc. 2015. Combined Sewer Impact Analysis, Golden State Warriors Arena EIR. February 25, referenced on RTC, p. 13.17-15, n 8.

2 One example is Mitigation Measure M-TR-2b: Additional Strategies to Reduce Transportation Impacts: "The project sponsor shall work with the City to pursue and implement commercially reasonable, if feasible, additional strategies (i.e., in addition to those included in the project TMP) to reduce transportation impacts. In addition, the City shall pursue and implement, if feasible, additional strategies to that could be implemented by the City or other public agency (e.g., Caltrans)."

3 The San Francisco Public Utilities Commission is a department of the City and County of San Francisco.

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-6]*)

Response to Late Comment UTIL-1: Cumulative Impacts on Wastewater Facilities

The commenter contends that Response UTIL-3 of the RTC document does not adequately address previous comments regarding the capacity of the Mariposa Pump Station to accommodate cumulative wastewater flows. The comment states that cumulative projects considered in the wastewater flow projections are not included in the list of potentially cumulative projects provided on pp. 5.1-8 through 5.1-10 of the SEIR. In addition, the commenter questions the conclusion that future improvements to SFPUC's wastewater system are outside of the project sponsor's control because in other sections of the SEIR City agencies are named as a responsible party or are directly involved in implementation of the specified mitigation measures. Another comment (A-UCSF2-4) asks the City for an

explanation of how the wastewater treatment capacity in the Mariposa Sub-basin will be made adequate to serve all of the projected development in Mission Bay.

Basis for Cumulative Analysis

The SEIR uses a professionally-accepted, standard approach to assessing impacts related to exceeding the capacity of the Mariposa Pump Station. As discussed in Impact UT-5 (SEIR pp. 5.7-9 through 5.7-13) as augmented in Response UTIL-5 of the RTC document (Section 13.17.6), the direct impact of the project on the capacity of the Mariposa Pump Station is based on the estimated peak wastewater flows from the project compared to the remaining capacity of the Mariposa Pump Station. Total peak wastewater flows from the project in combination with existing peak waste water flows were determined to be 3.48 mgd. These flows are within the existing 3.5 mgd capacity of the Mariposa Pump Station. Thus, the existing system has adequate conveyance capacity to handle existing peak wastewater flows, along with peak wastewater flows associated with the project.

Cumulative Impact C-UT-2 of the SEIR (pp. 5.7-13 through 5.7-17) addresses operational impacts associated with conveyance of project-related wastewater flows in combination with those from past, present, and reasonably foreseeable future development in the drainage area of the Mariposa Pump Station. The SEIR analyzes whether the combined flows could exceed the 3.5 mgd capacity of the Mariposa Pump Station, and if so, whether permanent upgrades to the pump station, force mains, and downstream gravity sewers would be necessary to provide the capacity to convey the cumulative wastewater flows to the Southeast Water Pollution Control Plant.

As documented in the technical memorandum provided in Appendix HYD of the SEIR,[3] reasonably foreseeable future developments in the drainage area of the Mariposa Pump Station that are considered in the volume of future wastewater flows include developments on Blocks 25b, 33 to 34, and 40 as well as Phase 2 of the University of California, San Francisco (UCSF) Medical Center. The commenter states that these projects are not properly described in the SEIR. This statement is incorrect. As stated in SEIR Section 5.1.5.2 (pp. 5.1-8 to 5.1-9), the SEIR only lists projects that could contribute to operational cumulative impacts that were *not* anticipated in the 1998 Mission Bay FSEIR. Projects that were previously analyzed and accounted for in the 1998 Mission Bay FSEIR are not listed; in particular, individual projects that are a part of the overall Mission Bay Redevelopment Plan, such as the development on Block 40, are not listed as a cumulative project for operational impacts because they were previously analyzed in the 1998 Mission Bay FSEIR. The project planned on Block 25b is a UCSF research and parking facility and the project planned on Block 33 to 34 is a UCSF research facility to be constructed as part of UCSF's East Campus. These and UCSF's Phase 2 Medical Center are all projects associated with implementation of the UCSF Long Range Development Plan for the Mission Bay Campus that is described on p. 5.1-8 of the SEIR. Adding anticipated flows from these potential projects into the cumulative impact analysis would result in double-counting these same anticipated flows.

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[3] Hydroconsult Engineers, Combined Sewer Impacts Analysis, February 25, 2015.

Impact C-UT-2 concluded that the project would contribute to a cumulative impact related to the need for future improvements to the Mariposa Pump Station and associated facilities, and that the project's contribution would be considered cumulatively considerable. The SEIR further concluded that cumulative impacts related to requiring or resulting in the construction of new wastewater treatment facilities or expansion of existing facilities would be significant unavoidable because of the following: the design of the conveyance improvements has not been determined; the design and construction of the facilities is outside of the project sponsor's control; and the timing for completion of the improvements is not known.

Project Sponsor Control over Construction of Pump Station Improvements

The commenter is mistaken in stating that the SEIR conclusion that "Future improvements in the SFPUC's wastewater system are beyond the project sponsor's control" is "unsupported." The SFPUC is responsible for the overall operation of the combined sewer system throughout the entire City, and must design and construct the Mariposa Pump Station improvements in a manner that conforms to the overall system-wide needs. More specifically, the design of the Mariposa Pump Station must consider overall operation, maintenance, and regulatory requirements of the Bayside system, including compliance with the National Pollutant Discharge Elimination System (NPDES) permit for the Southeast Water Pollution Control Plant, the North Point Wet Weather Facility, and the Bayside wet-weather facilities (referred to as the Bayside NPDES Permit).[4] The design of the conveyance improvements in the Mariposa Sub-basin of the combined sewer system must be integrated with the design and operation of the overall system to ensure continued compliance with the Bayside NPDES Permit. The design must also take into account such issues as cost effectiveness and reliability. The design of these improvements must also be determined in consultation with the Regional Water Quality Control Board, San Francisco Bay Region, which has regulatory authority over the Bayside NPDES permit. These design considerations transcend the issues associated with wastewater flows from any particular project within the Mariposa Pump Station drainage area, such as flows from the project. That is why the SEIR states that addressing this cumulative impact is beyond the project sponsor's control and is the responsibility of the SFPUC. While the project sponsor may have some influence over implementation of other SEIR mitigation measures that involve other City agencies, in this case the project sponsor does not have this control. The SEIR appropriately includes and relies on the actions of City agencies to mitigate an impact where feasible measure have been adequately developed and it is within the project sponsor's control to implement them.

SFPUC has not abdicated its responsibility for addressing this cumulative impact. SFPUC is actively engaged in determining the appropriate design of such facilities, taking into account the considerations outlined above.

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[4] California Regional Water Quality Control Board, San Francisco Bay Region. City and County of San Francisco, Southeast Water Pollution Control Plant, North Point Wet Weather Facility, Bayside Wet Weather Facilities, and Wastewater Collection System. Order No. R2-2013-0029. NPDES No. CA0037644.

Design of Conveyance Improvements

In response to Comment A-UCSF2-4, permanent and long-term improvements to the Mariposa Pump Station and associated force mains and downstream gravity sewers would be required to convey cumulative wastewater flows from the Mariposa sub-basin of the combined sewer system to the Southeast Water Pollution Control Plant, as discussed in Impact C-UT-2 of the SEIR (pp. 5.7-13 through 5.7-17). The SFPUC is responsible for implementing these improvements. While the SFPUC has not yet identified a timetable for completing these long term improvements and has not developed specific plans or designs for construction of the proposed improvements, the SFPUC has initiated the design process. Upon determination by the SFPUC of the nature and cost of needed improvements, the SFPUC will coordinate with both the project sponsor and UCSF regarding the design of these improvements as part of each party's commitment to pay their fair share towards the construction of the long-term improvements in accordance with SEIR Mitigation Measure M-C-UT-4 (p. 5.7-20 of the SEIR) and Mitigation Measure UTIL-MB-1 of UCSF's 2014 Long-Range Development Plan EIR (p. 7-100). In particular, Mitigation Measure M-C-UT-4 ensures that the project sponsor will contribute to the cost of the long-term improvements, once those improvements have been identified by SFPUC.

The potential long-term improvements to the system would consist of installing higher-capacity pumps at the Mariposa Pump Station, expanding the capacity of force mains and downstream gravity sewers, or some combination of these improvements. SFPUC has determined that these improvements are feasible. The specific improvements have not been identified. SFPUC is in the process of identifying the appropriate design of these improvements, taking into account the various considerations outlined above, and in consultation with UCSF, the project sponsor and the Regional Board.

Issues Raised by Late Commenters on Description of Interim Improvements

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-37

UTIL-6 Description of Interim Improvements

The response identifies that the interim improvements have already occurred and were not associated with the project, however further identifying that the proposed project would have needed the same improvements to accommodate the project. Yet, even more improvements will be required beyond the interim improvements:

> *"The SFPUC has concluded that long-term permanent improvements to the Mariposa Pump Station will be required in order to handle anticipated, cumulative future flows. As noted in Impact C-UT-2 of the SEIR (p. 5.7-15), the SFPUC has not identified a timetable for completing the long term improvements to the Mariposa Pump Station, and has not developed specific plans or designs for construction of the proposed improvements."*

The project appears to attempt to have it both ways, the capacity is sufficient, after having built the interim improvements for the current project, yet close enough to the physical limits of these improvements that it is likely to need significant re-engineering in the near, but indeterminate future. It appears that the project is attempting to avoid the current impact analysis and not have to deal with its cumulative impacts. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-37]*)

Response to Late Comment UTIL-2: Description of Interim Improvements

The commenter states that "The project appears to attempt to have it both ways, the capacity is sufficient, after having built the interim improvements, yet close enough to the physical limits of these improvements that it is likely to need significant reengineering in the near, but indeterminate future. It appears the project is attempting to avoid the current impact analysis and not have to deal with its cumulative impacts." This statement misrepresents the SEIR analysis and is factually wrong.

Project impacts related to exceeding the capacity of the Mariposa Pump Station are addressed in Impact UT-5 of the SEIR (pp. 5.7-11 through 5.7-13). As discussed in that impact analysis and in Response UTIL-6 of the RTC document (Section 3.17.7), the SFPUC constructed interim improvements to the pump station in 2015 to accommodate peak wastewater flows from the planned and approved development in the Mission Bay Plan area, including flows from planned UCSF developments. These interim improvements have already been completed and were necessary regardless of construction of the proposed project; they were not constructed to accommodate wastewater flows from the project. With these existing improvements in place, the conveyance capacity of the Mariposa Pump Station is adequate to handle existing peak flows, plus peak flows associated with the project.

As discussed in Impact UT-5 (SEIR pp. 5.7-11 through 5.7-13) as augmented in Response UTIL-5 of the RTC document (Section 13.17.6), the total peak wastewater flows from the project in combination with existing peak waste water flows would be 3.48 mgd. This total peak wastewater flow volume is close to the 3.5 mgd capacity of the Mariposa Pump Station, but does not exceed the capacity of the pump station. Therefore, the proposed project would not require the construction of new wastewater treatment facilities or expansion of existing facilities, and this project-level impact would be less than significant as concluded on p. 5.17-12 of the SEIR.

Cumulative impacts related to exceeding the capacity of the Mariposa Pump Station and associated force mains and downstream gravity sewers are addressed in Impact C-UT-5 of the SEIR (pp. 5.7-13 through 5.7-18) and Response UTIL-3 of the RTC document (Section 13.17.4). As discussed in this impact analysis and response, project-related flows in combination with those from past, present, and foreseeable future development in the drainage area of the Mariposa Pump Station could exceed the 3.5 mgd capacity of the Mariposa Pump Station and future upgrades to the pump station, associated force mains,

and/or downstream gravity sewers would be necessary to accommodate the estimated cumulative wastewater flows. The SEIR determines that the project would contribute to a cumulative impact related to the need for permanent improvements to the waste water conveyance system. The SEIR further concludes that cumulative impacts related to requiring or resulting in the construction of new wastewater treatment facilities or expansion of existing facilities would be significant unavoidable for the reasons described above in Response to Late Comment UTIL-1.

As discussed above, the commenter states that "the project appears to attempt to have it both ways." This statement is incorrect. The SEIR concludes that the Mariposa Pump Station has the capacity to accommodate project-related flows under current conditions (Impact UT-5, pp. 5.7-11 to 5.7-13) and that the direct impacts of the project would be less than significant. Conversely, under cumulative conditions, the capacity of the pump station, associated force mains, and downstream gravity sewers could be exceeded with the addition of future cumulative flows, including those of the proposed project, and the SEIR conservatively determined that the project's contribution would be cumulatively considerable, resulting in a significant and unavoidable impact (Impact C-UT-2, pp. 5.7-13 to 5.7-17). As approved, the project sponsor must pay its fair share towards the cost of the long-term improvements, once SFPUC has determined what those improvements will be, estimated the cost, and calculated the project's fair share. (See Mitigation Measure M-C-UT-4.) OCII approved this measure. (See Mitigation Monitoring and Reporting Program, p. MMRP-34.)

SECTION 15: RESPONSES TO LATE COMMENTS ON BIOLOGICAL RESOURCES

The comments and corresponding responses in this section cover topics analyzed in the Initial Study, Section E.13, Biological Resources (see Appendix NOP-IS of the SEIR), as augmented in RTC document Section 13.19. These include topics related to:

- Issue BIO-1: Wetlands
- Issue BIO-2: Biological Resources Setting
- Issue BIO-3: Special-status Species and Sensitive Natural Communities
- Issue BIO-4: Avian Impacts

Issues Raised by Late Commenters on Wetlands

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-8 O-MBA20L7-41 O-MBA20L7-44 O-MBA20L7-48 O-MBA20L7-49

C. The Response to Comment Bio-5 is Inadequate.

1. Waters of the U.S. and Waters of the State are Present on the Site

The FSEIR argues that the wetland feature on the site is not a state or federal wetland. Yet Response BIO-5 provides no evidence of consultation with either the U.S. Army Corps of Engineers ("Corps") or the State Water Resources Control Board ("SWRCB") regarding the status of the feature. With respect to the jurisdiction of the Corps, the FSEIR claims that under draft regulations that are stayed, the feature would be exempted from jurisdiction. This interpretation is not supported by any specific language in the referenced Sixth Circuit Court of Appeals decision, and thus has no authority.

The FSEIR also argues that the site was never abandoned such that the feature would have been "recaptured" as a wetland under the Clean Water Act. Yet no explanation is provided for the lack of any activities at the site or changes to the wetland feature between 2007 and 2014, a period of seven years. This inactivity at the site is demonstrated in the plates included in the July 16, 2015, BSK Technical Memorandum Regarding the Proposed Warrior Arena Wetland Features. (Attached as Exhibit K, see Figures 2a-2e.)

The FSEIR also makes the circular argument that the existence of priority pollutants within the wetland feature is irrelevant because the City does not consider the wetland feature to be jurisdictional. Again, no credible evidence is provided to support the argument that the wetland is not subject to federal jurisdiction in the first place.

The FSEIR incorrectly relies exclusively on federal law and ignores the broader jurisdiction of the state over all of its waters, including wholly constructed features. As such the SEIR fails to adequately describe the site physical features, the relevant regulatory requirements, and the avoidance, minimization and mitigation requirements it would be subject to. State waters are more broadly defined than waters of the U.S.: "'Waters of the state' means any surface water or groundwater, including saline waters, within the boundaries of the state." (Wat. Code, 13050, subd.(e).) This has been interpreted by the SWRCB to literally "include all waters within the state's boundaries, whether private or public, including waters in both natural and artificial channels."

Contrary to RTC BIO-5, the fact that the remediation at the site was at one time overseen by the San Francisco Regional Water Quality Control Board ("RWQCB") has no bearing on whether the feature would be considered jurisdictional by the SWRCB. While the SWRCB may choose to follow jurisdictional determinations by the Corps, the SWRCB has much broader authorities and may also

assert jurisdiction under the parameters of Water Code section 13050, subdivision (e). As the FSEIR cannot point to any jurisdictional determination by the Corps, there is nothing for the SWRCB to follow; therefore, it would follow its own regulations and orders. (Executive Order W-59-93 attached as Exhibit N; State Water Resources Control Board Memorandum, January 25, 2001, Effect of SWANCC v. United States on the 401 Certification Program attached as Exhibit O; State Water Resources Control Board Guidance, June 25, 2004, for Regulation of Discharges to "Isolated" Waters attached as Exhibit P; State Water Resources Control Board Order NO. 2004-0004-DWQ attached as Exhibit Q; State Water Resources Control Board Resolution NO. 2008-0026 attached as Exhibit P).

The FSEIR's attempted rebuttal of the need for a Coastal Zone Management Act ("CZMA") consistency determination is also incorrect. In addition to claiming that the requirement does not apply because the City (not the Corps or the SWRCB) has determined that the feature is not jurisdictional, the FSEIR argues that filling the wetland would have no effect on resources in the coastal zone. As explained below, however, the wetland complex has significant habitat value to biological resources and supports coastal resources.

To further substantiate the existence of the wetland features on the site, BSK Associates has prepared a desktop delineation for submittal to the Corps to finally resolve the issue of jurisdiction. (See Exhibit L.) The exact nature of the wetland feature is described in the attached report, which determines that there are 0.51 acres of permanent wetlands at the site. The delineation also explains that the wetland provides the following nexus functions with the San Francisco Bay: (i) Sediment trapping, (ii) Nutrient recycling,(iii) Pollutant trapping, transformation, filtering, and transport, (iv) Retention and attenuation of flood waters, (v) Runoff storage, (vii) Export of organic matter, (viii) Export of food resources, and (ix) Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species.

The purpose of environmental review is to inform the public of the likely effects of carrying out a project. Here, the IS/NOP failed to accurately describe the wetland on the site, or to even provide a process by which the feature would be further investigated and the appropriate mitigation required. The information submitted by the Alliance constitutes substantial evidence of a fair argument that the Project will have a significant adverse effect on biological resources. In the alternative, per CEQA section 21166 and CEQA Guidelines section 15162, the facts described above constitute a change in circumstances since the 1998 SEIR involving, and significant new information showing, a new significant effect not previously analyzed in the 1998 SEIR. Under either standard, the OCII and the City must prepare and circulate for public comment an environmental impact report to review the Project's impacts on this wetland resource. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-8]*)

Response BIO-5: Wetlands

The basic premise of the Response is that there simply is no reversion, since at any time the site could have been developed, and the pit filled in (p. 13.19-31). Again, as stated in the initial BSK assessment of site conditions, that particular line of argument fails to acknowledge again that the site was not consistent with the Order and the Revised Remedial Management Plan (RRMP) at the time it did not backfill the pit [[grammer makes this unclear]] . The Response ignores the BSK rebuttal that by the DSEIR's own logic, no site could ever revert since all that is required to demonstrate that it was not reverted would be an assertion of future development potential. All of the discussion regarding waters definitions has already been rebutted by BSK's detailed analysis. No substantive new information has been provided by the Response. The only new information in the Response is that they believe that state wetland laws only apply to federal wetlands and waters, which BSK showed previously it does not, and state wetland law is vastly more expansive and subject to different, state authorities. (p. 13.19-34) (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-41]*)

It remains our opinion that the DSEIR continues to fail to identify and mitigate for the project impacts to waters and wetlands at the site; as well as the potential impacts to biological resources within and around the site through contact with hazardous waste. The following section goes into each of these issues in greater detail. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-44]*)

The purpose of this memorandum is to provide description and an assessment of the site's waters and wetland conditions at Blocks 29-32, Mission Bay Project in San Francisco, California (Vicinity Map Figure 1).

BSK Associates (BSK) provided a screening-level site visit of the proposed project area to assess its condition from the public right-of-way, shown on Figure 2. A combination variable intensity, pedestrian and vehicular survey was made of the site perimeter and of areas of the project site clearly visible from the public right-of-way on June 30, 2015. The approach, assumptions, significance evaluation, and results are summarized below.

SITE OBSERVATIONS

The proposed project footprint consists of two large paved areas (Southwest parking lot approximately 79,910 sq.ft./1.83 ac. and Northeast parking lot approximately 91,776 sq.ft./2.11 ac.)[1] currently being used as paid parking lots; an area of soil stockpiles (31,066 sq.ft./0.71 ac) on the eastern edge of the property (Terry A. Francois Boulevard); and an adjoining large open field, open water (22,115 sq.ft./0.51 ac) and wetland swale complex, (904 sq.ft./0.02 ac.) (closest to the Southwest parking lot) shown on Figure 2. A series of photographs were taken of the site and the adjoining areas (Attached Photo Plates).

At the time of observation, the open water area encompassed the majority of the water feature, with a patchy, but substantial fringe of palustrine emergent (predominately alkali bulrush [*Bolboschoenus maritimus*]) and riparian plants (willows [Salix sp.]). The visible forb layer was typical of this sort of site. The plants were concentrated on the two narrow ends of the water feature. The narrower channel and the seasonal wetlands apparent from the aerial photographs (Figures 2a-i) were not clearly visible from the site perimeter fence(es).

Numerous native birds were observed within, and in some cases flying to and from the water body. Several Canada geese (*Branta canadensis*) were seen, including what appear to be adult plumage juveniles; three killdeer (*Charadrius vociferous*), including two juveniles; a female mallard and a juvenile (*Anas platyrhynchos*); several crows (*Corvus brachyrhynchos*); two non-native Eurasian collared-doves (*Streptopelia decaocto*); and numerous non-native rock doves/pigeon (*Columba livia*). The site has significant use for nesting and foraging by these bird species.

WATERS AND WETLAND FEATURE HISTORY

The site is within the footprint of the historic Mission Bay, which has been filled in over time (ESA 2014; Pg. 1). The original Bay muds are still found below the site, as evidenced by the site soil borings (LTR 2015; Pg. 13 and Figures A-2 and A-3). The excavation intercepted local shallow groundwater and is evidently maintained by that natural source (LTR 2015; Pg. 14). The site also has seasonal wetland features which appear to be dominated by stormwater. It is not clear that these seasonal features would not be maintained for far longer in the spring, but they have been captured through an excavated trench apparently intended to drain them to the open water body (ESA 2014; Pg. 2). The site "remedial" activities thus captured the local water table and allowed for the expression of open water and wetland features (ESA 2014; Pg. 2). The ESA analysis goes on to specifically identify that the: "…deeper excavation and surrounding shallow depressions within the proposed project site are features that exhibit hydrology and vegetation characteristics of wetlands. Hydric soil is presumed present due to the year-round inundation and presence of obligate wetland plants." (ESA 2014; Pg. 3)

For additional purposes of comparison, BSK has provided a time-series of aerial photos of the site using Google Earth historic imagery for the period spanning 1938 through 2013 (Figures 2a, through 2i). The imagery provides a clear indication of vegetation through its distinct shape, and indications of both reflectance and morphology for water features. The time series does not provide information for the missing intervals, and so the relative changes of feature geometry (relative position and size) over time are used to confirm persistence of those features.

July 1938 - The site has numerous apparent industrial uses, ranging from warehousing and tank storage, to railroads (Figure 2i). There is a ruderal area on the site on the northwestern corner.

July 1946 - These conditions appear similar to 1938 (Figure 2h).

June 21, 1987 - The site has similar activities, but with new buildings, less rail facilities and what appears to be a small concrete batch plant and material storage area on the western edge of the site (Figure 2g).

September 25, 2001 - These details are much clearer, with the inclusion of a large soil stockpile on the eastern edge of the site (Figure 2f). On October 5, 2005, the site has had most of the buildings removed and several large stockpiles, as well as a large parking area (Figure 2e). The apparent interception of the local water table in one of the excavated areas is visible (See WRA 2014; ESA 2014; and LTR 2015.

February 2007 - The large excavation and a single large water feature are visible, by March 2007, that feature was approximately 87,000 sq.ft./2 ac. (Figure 2d).

May 6, 2009 - There are two large parking lots visible and the main excavation has been filled through the middle such that it now has two features, and numerous small seasonal water features (Figure 2c). On April 3, 2011, the apparent open water and seasonal wetland features have naturalized with several areas of vegetation growing in around them (Figure 2b).

January 1, 2013 - The water features are again fully flooded and consist of two large wetted areas (Figure 2a). According to the aerial photograph, the total waters and wetland area was approximately 31,000 sq.ft./0.71 ac. on October 24, 2014. The available Google Earth historic imagery supports the history of water body formation and maintenance over time.

WATERS AND WETLANDS

The Clean Water Act (CWA) is the primary federal law in the United States governing water pollution and regulating water quality standards for surface waters. The basis of the CWA was enacted in 1948 (the Federal Water Pollution Control Act), but the Act was significantly reorganized and expanded in 1972. Both the US Army Corps of Engineers (USACE) and the US Environmental Protection Agency (USEPA) administer elements of these laws, but typically the USACE provides the waters and wetlands delineation protocols, administers the permitting program for wetland-impacting projects, and the USEPA provides oversight. Federal waters and wetland policy differs in several key regards from California, although there is much similarity. California also has a role in the CWA wetland permitting process through the 401 Certification process.

The term "wetlands" from a 404 perspective generally means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands typically include swamps, marshes, bogs, and similar areas. These are typically identified using a three-part test, examining the presence of water, wetland (hydric) soil, and wetland dependent (hydrophytic) vegetation, following specific guidance(s). The federal CWA section 404(b)(1) Guidelines list both wetlands and mud flats as types of “special aquatic sites”.

In California, the State Water Resources Control Board (State Water Board) is responsible for establishing policy on State waters and wetlands. The policy is implemented through regulations established by the State Water Board and nine Regional Water Quality Control Boards (in the site’s case the San Francisco Regional Water Quality Control Board). The Boards also administer the CWA 401 Certification, which in some cases covers only portions of wetlands, and the Water discharge

Requirements (WDR) for the non-Federal portions, if present. There are additional specific statutes and orders that also define or promote policy objectives regarding California's wetlands, such as EO-W-59-93[2] and California Department of Fish and Game Streambed Alteration Agreement, among others. In addition, Porter-Cologne Water Quality Control Act (Cal. Water Code, Div. 7) can apply to coastal wetland projects (§ 13142.5), in particular to unabated chemical discharges from construction or chemical waste stockpiles.

A wetland under California's regulations contains the following features:

An area that is covered by shallow water or where the surface soil is saturated, either year-round or during periods of the year; Where that water coverage has caused a lack of oxygen in the surface soil; and, has either no vegetation or plants of a type that have adapted to shallow water or saturated soil. Some examples are fresh water marshes, bogs, riparian areas, vernal pools, coastal mud flats and salt marshes.

In addition, wetlands according to the CA Coastal Commission are defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats (14 CCR 13577(b)). Furthermore, given the special salinity conditions associated with wetlands within the coastal zone, they also means lands which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens (Cal. Pub. Res. Code § 30121).

In this case, there are both a permanent water body and a seasonal feature (possibly a small complex) with wetland characteristics by the admission of the experts who prepared the environmental documentation for the project. These characteristics clearly meet the definitions contained in the various regulations, including 14 CCR 13577(b), Cal. Pub. Res. Code § 30121. The open water feature and its hydrophytic vegetation was verified in the field, and through the use of aerial photos, showing their presence over time, both by season and by year.

Federal Jurisdiction

Wetlands created by human actions fall under a couple of discrete classes under Federal jurisdiction. Most typically these are agricultural features that are caused by the movement of water from one location to another, such as a dam providing water to a canal constructed in uplands. In this case however, the site was originally a tidal mudflat or estuary wetland which has since reverted back to a wetland (ESA 2014). In addition, even if it was not originally a water or wetland, it currently meets those adjacency, and direct hydrologic connectivity requirements under the Final Clean Water Rule (2015; 33 CFR Part 328 and 40 CFR Parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401); and, even manmade wetlands and water bodies have restrictions on discharges under 33 CFR 323.4(b).

There are Federal exemptions for specific construction associated activities. These exemptions (33 CFR 323.4 - Discharges not requiring permits) are invalidated, however: "If any discharge of dredged or fill material resulting from the activities listed in paragraphs (a) (1) through (6) of this section contains any toxic pollutant listed under section 307 of the CWA such discharge shall be subject to any applicable toxic effluent standard or prohibition, and shall require a section 404 permit." (33 CFR 323.4(b)).

The site's water and soils include several chemicals identified under CWA section 307 as toxic pollutants (BBL 2006; LTR 2015).[3] Those chemicals include the following 12 Priority Pollutants found in the in the LTR Phase II (LTR 2015; Table 4 and Table 5):

1. Benzene
2. Naphthalene
3. Cyanide
4. Antimony

5. Arsenic
6. Chromium
7. Copper
8. Lead
9. Mercury
10. Nickel
11. Selenium
12. Zinc

Therefore, the site is not exempted under 33 CFR 323.4 because it contains 12 of the chemicals identified as priority pollutants under section 307.

The site's consultant, WRA, in a separate analysis, has attempted to claim exemption from the CWA under yet a different test (without identifying that any exemption is invalidated by the section 307 test described above (WRA 2014; Pg. 2)). WRA states that: "1986 (51 Fed. Reg. 41206) (e) Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States."

This explanation, instead of demonstrating how the site may be exempted as an incidental construction feature, provides documentation that clearly shows how that feature has been abandoned. Therefore the exemption also does not apply on that basis. The site owner's clear and continuing failure to backfill the feature and its abandonment for the past decade, despite being under Order No. R2-2005-0028 and its RRMP, is on its face abandonment and its clear reversion to the definition of waters, wetlands and/or other special aquatic site.

Indeed, there is no merit to the further argument made by WRA (Pg. 4) that: "As described in the RWQCB Order No. R2-2005-0028, the Project Area was to be excavated and backfilled in preparation for future development as part of the overall Mission Bay redevelopment plan." The site was not backfilled. It should be noted by WRA's argument there could never be a case for reversion under the CWA, because any naturalized feature would simply 'be ready' for some postulated future backfilling. The provided analysis fails to show: 1. How the feature has not reverted and 2. How the exemption override under 33 CFR 323.4 does not apply due to the presence of section 307 toxic chemicals. Regardless, WRA is simply silent on the open water and wetland features in context of the State water and wetland policy and applicable regulations.

California Jurisdiction

California does not have the same exemptions in its waters and wetland framework as exist under the CWA. California derives its authority from different sources (Porter-Cologne Water Quality Control Act) for its policies, and includes all man-made features under its jurisdiction. Therefore the site's water features, regardless of origin, appear to be regulated and protected waters of the State and wetlands.

SITE ABANDONMENT AND HAZARDOUS CHEMICALS

The site "remedial" activities captured the local water table and allowed for the expression of wetland characteristics and the site has naturalized over time (ESA 2014; Pg. 2). These activities have resulted in the creation of stockpiles of material that in some cases: "…contains contaminants that exceed hazardous waste threshold concentrations and will require special handling and disposal." adjacent or near to these wetland features (TWR 2015; Pg 1). These activities took place over several years culminating in a Phase II remedial action that left the excavated area open and abandoned in 2005 (LTR 2015; Pg. 6). The Revised Risk Management Plan (RRMP, BBS; Pg. 2-3 and 2-3) infers that the excavation was backfilled, however, it was not.

The RRMP further identifies that: "1. Because North Terminal, Parcel X4, OAS and 16th Street East OUs are currently under development, interim risk management measures (IRMMs) designed for

undeveloped parcels are not relevant to the protection of human health on those OUs. If development ceases or areas are created with uncovered native soils, IRMMs may again be necessary." (BBS 2006; Table 1) The development of the site still has not occurred, and there is no evidence that the IRMMs have been applied.

The site's open water and wetland features are thus a direct result from the abandonment of a site cleanup allowed to revert back to a natural state for approximately a decade. Not only did natural features evolve in response to this abandonment, but the very abandonment created conditions that may have exposed wildlife to a variety of hazardous chemicals (LTR 2015).

CONCLUSIONS

The site has active wildlife use, open water and various forms of wetland features according to our observations (as well as those observations made by others), and appears to be subject to both State and Federal regulations associated with the protection of these species, their habitat, and these features (ESA 2014). These regulations have several requirements that apply to the protection of wildlife and waters, including but not limited to, the Migratory Bird Treaty Act, the federal Clean Water Act, Section 404, and the State's various Clean Water Act responsibilities, and its own Porter-Cologne requirements. It is our opinion that the appropriate course of action for this site include:

1. The site owner immediately ceases the placement of any and all fill material, including hazardous materials, into any of the water and wetland features, until those wetlands have been delineated using the appropriate protocols; the appropriate State and Federal Permits have been secured; and, the appropriate compensatory mitigation has been implemented.
2. The site owner immediately ceases the uncontrolled runoff from the staged covered, and any hazardous material piles, into these features.
3. The protection of wildlife that occupy the site be established through the implementation of a Worker Environmental Awareness Plan, and that Plan includes protection breeding birds and their offspring.

Footnote:

[1] 2015 Google Earth
[2] http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/wrapp2008/executive_order_w5 9_93.pdf
[3] http://water.epa.gov/scitech/methods/cwa/pollutants-background.cfm

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-48]*)

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1. INTRODUCTION

BSK Associates (BSK) completed a waters assessment and wetland delineation under the direction of Soluri-Meserve for the proposed Mission Bay development project site (Blocks 29-32). The site is owned by the Golden State Warriors after a recent sale from Salesforce.Com, Inc. The purpose of the delineation was to identify potential wetland features within the project footprint. BSK is requesting a Preliminary Jurisdictional Determination (JD) for the purposes of verification of "waters" and the wetland features at this proposed project site. The purpose of this report is to provide supporting description and an assessment of the site's waters and wetland conditions at Blocks 29-32, Mission Bay Project in San Francisco, California (Vicinity Map Figure 1). The approach, assumptions, significance evaluation, and results are detailed below.

2. GENERAL SITE DESCRIPTION

The approximately 12-acre proposed project site (hereinafter the "site") is located in San Francisco, CA on bounded by 3rd, 16th and South Streets, and Terry Francois Blvd (to the east). This site has also been identified as parcel lots 29-32 within the greater Mission Bay South Development (Site Map Figure 2). The site vicinity and location figures are provided at the end of this report. The "Area of Potential Effect" (APE) is within the central and southwestern portion of the site. The site is

bounded by urban development on all four sides, including parking lots on two sides (west and north). The eastern and northeastern sides of the site have staged piles of previously identified potentially hazardous materials (BBL 2006 and LTR 2015).

The terrain is nearly flat, although the western third of the site slopes steeply towards the pond area. The majority of the site is disturbed, with several large areas of barren soil, intermixed with low density non-native annual ruderal and grassland habitats. Within that disturbed area, there are wetland features which are further described in this study.

The APE contains features with wetland characteristics, including a series of swales (approximately 904 sq.ft./0.02 acre) that radiate from the east to the west into to an approximately 22,115 sq.ft./0.51 acre open water pond feature. This pond feature is located approximately 702 feet from the open water of the Bay, with the swales located between the pond and the Bay.

2.1 Waters and Wetland Feature History

The site is within the footprint of the historic Mission Bay, which has been filled in over time (ESA 2014; Pg. 1). The original Bay muds are still found below the site, as evidenced by the site soil borings (LTR 2015; Pg. 13 and Figures A-2 and A-3). The pond intercepts local shallow groundwater and is evidently maintained by that natural source (LTR 2015; Pg. 14). The site also has seasonal wetland features which appear to be dominated by stormwater influences. It is not clear that these seasonal features would not be maintained for far longer in the spring, but they have been captured through an excavated trench apparently intended to drain them to the pond (ESA 2014; Pg. 2). The ESA analysis goes on to specifically identify that the: "…deeper excavation and surrounding shallow depressions within the proposed project site are features that exhibit hydrology and vegetation characteristics of wetlands. Hydric soil is presumed present due to the year-round inundation and presence of obligate wetland plants." (ESA 2014; Pg. 3)

For additional purposes of comparison, BSK has provided a time-series of aerial photos of the site using Google Earth historic imagery for the period spanning through 2013 (Figures 3, 4 and 5). The imagery provides a clear indication of vegetation through its distinct shape, and indications of both reflectance and morphology for water features. The time series does not provide information for the missing intervals, and so the relative changes of feature geometry (relative position and size) over time are used to confirm persistence of those features.

May 6, 2009 - There are two large parking lots visible and the main pond feature has been filled through the middle such that it now has two features, and numerous small seasonal water features (Figure 3).

On April 3, 2011, the apparent open water and seasonal wetland features have naturalized with several areas of vegetation growing in around them (Figure 4).

January 1, 2013 - The water features are again fully flooded and consist of two large wetted areas (Figure 5). According to the aerial photograph, the total waters and wetland area was approximately 31,000 sq.ft./0.71 ac. on October 24, 2014. The available Google Earth historic imagery supports the history of water body formation and maintenance over time.

3. REGULATORY BACKGROUND

Any person, firm, or agency planning to alter or work in navigable waters of the U.S., including planning to discharge dredged or fill material, must first obtain authorization from the USACE. Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act of 1899 prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from the USACE (33 U.S.C. § 403). Section 301 of the Federal Water Pollution Control Act and Amendments of 1972 (CWA) prohibits the discharge of pollutants, including dredged or fill material, into waters of the U.S. without a Section 404 permit from USACE (33 U.S.C. § 1344). State Water Quality Certification may be required by the Regional Water Quality Control Board before other permits are issued. If a proposed project will result in the alteration of a California lake or streambed, the California Department of Fish and

Wildlife (CDFW) require notification prior to commencement, and may require a Lake or Streambed Alteration Agreement.

According to the Code of Federal Regulations, the definition of "waters of the U.S." includes:

> (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
>
> (2) All interstate waters including interstate wetlands;
>
> (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce.
>
> (5) Tributaries of waters identified in paragraphs (a) (1) through (4) of this section;
>
> (6) The territorial seas;
>
> (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6) of this section.
>
> (33 C.F.R. § 328.3)

This approach to the waters determination extent has been modified somewhat with recent revisions under the Clean Water Rule, now subject to litigation[1,2]:

> (8) All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (3) of this section and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (a)(1) through (5) of this section where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section.

And, a more detailed nexus test:

> "(5) Significant nexus. The term significant nexus means that a water, including wetlands, either alone or in combination with other similarly situated waters in the region, significantly affects the chemical, physical, or biological integrity of a water identified in paragraphs (a)(1) through (3) of this section.
>
> The term "in the region" means the watershed that drains to the nearest water identified in paragraphs (a)(1) through (3) of this section. For an effect to be significant, it must be more than speculative or insubstantial. Waters are similarly situated when they function alike and are sufficiently close to function together in affecting downstream waters. For purposes of determining whether or not a water has a significant nexus, the water's effect on downstream paragraph (a)(1) through (3) waters shall be assessed by evaluating the aquatic functions identified in paragraphs (c)(5)(i) through (ix) of this section. A water has a significant nexus when any single function or combination of functions performed by the water, alone or together with similarly situated waters in the region, contributes significantly to the chemical, physical, or biological integrity of the nearest water identified in paragraphs (a)(1) through (3) of this section. Functions relevant to the significant nexus evaluation are the following:
>
> (i) Sediment trapping,
> (ii) Nutrient recycling,
> (iii) Pollutant trapping, transformation, filtering, and transport,
> (iv) Retention and attenuation of flood waters,
> (v) Runoff storage,
> (vi) Contribution of flow,
> (vii) Export of organic matter,
> (viii) Export of food resources, and

(ix) Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species located in a water identified in paragraphs (a)(1) through (3) of this section."

However, that rule is held in abeyance and follows the historic application of applying relevant case law, applicable policy, and the best science and technical data on a case-by-case basis in determining which waters are protected by the Clean Water Act, until litigation over the subject matter is resolved.

Wetlands are defined as:

> "…those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."
>
> (USACE 1987, p. 9, citing Federal Register 1980, 1982)

The USACE and the Environmental Protection Agency issued the U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook on May 30, 2007, to provide guidance based on the Supreme Court's decision regarding Rapanos v. United States and Carabell v. United States (USACE, 2007a, p. 6).

The decision provides new standards that distinguish between traditional navigable waters (TNWs), relatively permanent waters (RPWs), and non-relatively permanent waters (non-TNWs). Wetlands adjacent to non-TNWs are subject to CWA jurisdiction if: the water body is relatively permanent, or if a water body abuts a RPW, or if a water body, in combination with all wetlands adjacent to that water body, has a significant nexus with TNWs (USACE, 2007a, pp. 6 to 7). The significant nexus analysis assesses the flow characteristics and functions of the water on the "chemical, physical, and biological integrity of downstream traditional navigable waters" (USACE, 2007b, p. 6).

4. METHODOLOGY

BSK conducted a fenceline wetland delineation at the site on June 30, 2015. A combination variable intensity, pedestrian and vehicular survey was made of the site perimeter and of areas of the project site clearly visible from the public right-of-way. During the site visit, BSK staff followed to the wetland delineation process set forth in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0 (USACE, 2008) and verified using the adjacent zone's Western Mountains, Valleys, and Coast Region (Version 2.0). These methods include vegetation identification using the USACE State of California 2014 Wetland Plant List (USACE, 2014), including vegetation densities, soil classifications, plant species classification to the extent possible given the site access conditions. Some features could only be identified using desktop analysis of available aerial imagery. Because of documented hazardous wastes and the fact that permission to enter the site was not available, the BSK wetland scientist performed a visual survey from adjacent public roads and right of ways. Because of this limited access, qualified wetland scientists worked with BSK's GIS specialists to identify and estimate the extent of the features remotely, using topographic maps and aerial photography. Animal and plant species observed during the site visit are included in Table 1 at the end of this report.

Wetlands were differentiated from uplands based upon visible hydrology, soil patterns, and vegetative characteristics, as well as observations by workers in a prior assessment (ESA 2014). The wetland boundaries were determined by site-specific characteristics that would result in the best representation of all three parameters using the available information.

5.1.1 Hyrodphytic Vegetation

Hydrophytic vegetation was evaluated by a field assessment and comparing plant species with the USACE State of California 2014 Wetland Plant List (USACE, 2014). This list determines the possibility of whether plants are found in wetlands, uplands, or both. After classification, the USACE "rapid test" was conducted to determine the hydrophytic vegetation parameter.

5.1.2 Wetland Hydrology

It should be noted that the site was surveyed during a "drought year" (USBR, 2014). This requires "Difficult Wetland Situations" procedures (USACE, 2008). Surveys conducted during drought years require a slight variation in the approach to wetland delineation. This approach provides a better estimate of wetland potential based on the three parameters (wetland hydrology, hydric soils, hydrophytic vegetation) during a drought. Indicators A1, B1, B4, B6, B7, B8 and B10 were identified.

5.1.3 Hydric Soil

Hydric soils were not possible to assess given the nature of this assessment. However, ESA identified hydric soils but did not specify their Munsell color codes (ESA 2014).

5.2 Wetlands and Other Waters of the U.S.

Wetlands and other waters were described using the Cowardin classification system (Cowardin et al. 1979). As described above, approximate wetland boundaries were assessed by using the available characteristics and the supplemental features that demonstrated USACE characteristics for wetland and adjacent upland areas. All features that potentially met USACE wetland criteria were recorded as polygons and recorded on Figure 2. The boundaries of wetlands were extrapolated from the field map by following topographic contours, clear hydrologic boundaries, and wetland vegetation boundaries.

Cowardin's wetland classification is as follows, Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; 2 and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year (Cowardin et al. 1979).

Other waters of the U.S., were delineated using the methods described above and supported by the use of 'A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States' (USACE 2008a), and in USACE Regulatory Guidance Letter No. 05-05 (USACE 2005), where appropriate. These methodologies provided an approach for identifying the lateral limits of other waters of the U.S., using stream geomorphology and vegetation (USACE 2008a). Indicators of the ordinary high water mark (OHWM) evaluated in the field included natural lines impressed on banks, stain lines, depositional features, shelving, changes in soil character, changes in vegetation, destruction of terrestrial vegetation, and the presence of litter and debris. A clear debris line and shelf was visible.

5. OBSERVATIONS

The approximately 12-acre site includes two large paved areas (Southwest parking lot approximately 79,910 sq.ft./1.83 ac. and Northeast parking lot approximately 91,776 sq.ft./2.11 ac.) currently being used as paid parking lots; an area of soil stockpiles (31,066 sq.ft./0.71 ac) on the eastern edge of the site (Terry A. Francois Boulevard); and an adjoining large open field, open water (22,115 sq.ft./0.51 ac) and wetland swale complex, (approximately 904 sq.ft./0.02 ac.) (closest to the Southwest parking lot) shown on Figure 2.

At the time of observation, the unvegetated, open water area encompassed the majority of the water feature, with a patchy, but substantial fringe of palustrine emergent (predominately alkali bulrush [*Bolboschoenus maritimus*]) and riparian plants. The visible forb layer was typical of this sort of ruderal site. The plants were concentrated on the two narrow ends of the water feature. The narrower channel and the seasonal wetlands apparent from the aerial photographs (Figures 3, 4 and 5) were not clearly visible from the site perimeter fence(es). Using the Cowardin classification, the pond feature appears to presumptively meet the Palustrine Aquatic Bed, algal class.

In terms of its biological use and wetland habitat function, numerous native birds were observed within, and in some cases flying to and from the water body. Several Canada geese (*Branta canadensis*) were seen, including what appear to be adult plumage juveniles; three killdeer (*Charadrius vociferous*), including two juveniles; a female and a juvenile mallard (*Anas*

platyrhynchos); several crows (*Corvus brachyrhynchos*); two non-native Eurasian collared-doves (*Streptopelia decaocto*); and numerous non-native rock doves/pigeon (*Columba livia*). The site has significant use for nesting and foraging by these bird species.

The approximately 12-acre project site, where vegetated, is primarily non-native (ruderal) grassland habitat. The APE is almost exclusively compromised of the herb stratum. It is bounded by urban development on all four sides. The drainage patterns for the entire property are complex but from observations, including the aerial photos, it appears that the bare ground portion and parts of the paved parking lots provide the contributing watershed for the pond.

The western portion of the site contains the most visible potential wetland characteristics and therefore, it was analyzed for wetland characteristics within the APE (approximately 0.53 acres). The features are connected by a large ditch excavated to apparently drain the swale. The wetland surface is concave with a roughly rectangular shape in this area and approximately 30-40 feet across at the widest section.

Aerial imagery from 2008 and 2010 identifies the east of the pond with standing water. The seasonal feature is much larger than mapped because it appears that it has been newly drained into the pond feature through a large trench. This satisfies the wetland hydrology parameter "B7" and meets the wetland hydrology criterion. This plot was located within a seasonal wetland.

6. DISCUSSION

As a part of the delineation process, a preliminary search of the relevant historic and modern records of the project area was completed by BSK. Those records include National Wetland Inventory (NWI) and Soil Conservation Service (SCS) maps and Federal Emergency Management Agency (FEMA) databases were conducted to evaluate if any documented wetlands were located on or near the site. The NWI and SCS databases do not identify wetlands or hydric soils respectively within the APE. This is because the site is identified as urban developed and non-natural conditions as a result of the historic filling of the Mission Bay. San Francisco has not yet completed FEMA flood maps of this area. Soil profiles were identified in the following report, LTR 2015, which verified that the site was developed on fill, placed over the Bay muds. The nearest open water to the project site is San Francisco Bay located approximately 702 ft. east of the project site.

San Francisco Bay is considered jurisdictional waters of the U.S. pursuant to Section 404 of the Clean Water Act (USACE, 1987, p. 2; 33 C.F.R. § 328.3). Mission Bay itself was an open tidal bay within the estuary, fully navigable and subject to use in international commerce. The bay was filled in a series of stages prior to the CWA (LTR 2015).

The site features are located approximately 702 feet from the nearest documented waters, tidal waters of the United States - San Francisco Bay, therefore adjacent to waters, meet the significant nexus tests; and are "other waters" as well, namely an open water pond feature and its associated wetlands is. The wetland features have been independently judged by two sets of wetland experts as having met wetland criteria for hydrology and vegetation (BSK and ESA), and soils (ESA). The site has been subject to significant recent disturbance which has apparently removed most of the vegetation associated with the seasonal wetlands. But these characteristics were evident despite being assessed during a drought season (USBR, 2014). Historic aerial photos from verify standing water on the site (Digital Globe, 2014). Therefore, all three the wetland hydrology indicators are satisfied (USACE, 2008).

The APE is within 1,000 feet of tidal waters (702 feet to the permanent water feature, and appears to provide the nexus functions: (i) Sediment trapping, (ii) Nutrient recycling,(iii) Pollutant trapping, transformation, filtering, and transport,(iv) Retention and attenuation of flood waters, (v) Runoff storage, (vii) Export of organic matter, (viii) Export of food resources, and (ix) Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species (BSK 2015; ESA 2014; DSEIR 2015. It further contains characteristics of a wetland as defined by the USACE, and therefore, should be classified as waters and a wetland within the identified wetland boundary.

7. LIMITATIONS

The observations, assessment and recommendations submitted in this report are based upon the data obtained from existing reports prepared by others, limited field investigation, and limited access site observations. The report does not reflect variations which may occur beyond the assessed area. The findings of the field observation may have a potential for negative impact(s) on the value or suitability of the site for some purposes. BSK cannot assume liability for any such negative impact(s). Permitting requirements or permit interpretations may change over time. The findings of this report are valid as of the present. However, changes in the conditions of the site can occur with the passage of time, whether caused by natural processes or the human-induced changes on this property or adjacent properties. In addition, changes in applicable or appropriate standards or practices may occur, whether they result from legislation, governmental policy, or the broadening of knowledge. BSK's services were be performed in a manner consistent with the level of care and skill ordinarily exercised by other professionals practicing in the same locale and under similar circumstances at the time the work is performed.

BSK has prepared this report for the exclusive use of Soluri-Meserve. The report has been prepared in accordance with generally accepted practices which existed in northern California at the time the report was written. No other warranties either expressed or implied are made as to the professional advice provided under the terms of BSK's agreement with Soluri-Meserve.

TABLE 1
OBSERVED BIOLOGICAL RESOURCES

Scientific Name	Common Name	Wetland Status
Plants		
Schoenoplectus maritimus	Alkali Rush	OBL
Animals		
Anas platyrhynchos	Mallard	
Branta canadensis	Canadian Goose	
Columba livia	Rock Dove	
Corvus brachyrhynchos	American Crow	
Streptopelia decaocto	Eurasian collared-doves	

Source: BSK Associates, 2015
OBL: Obligate, FACW: Facultative Wetland, FAC: Facultative, FACU: Facultative Upland, UPL: Upland, N/A: Not available (USACE, 2014)
* http://rsgisias.crrel.usace.army.mil/NWPL/

TABLE 2
EESTIMATED AREA OF POTENTIAL EFFECT UPLAND AND WETLAND ACREAGES

Area	Acreage
Upland	11.47 acres
Permanent Wetland	0.51 acres
Seasonal Wetland	0.02 acres
TOTAL	12.0 acres

Footnotes:

[1] http://www2.epa.gov/sites/production/files/2015-05/documents/fact_sheet_summary_final_1.pdf
[2] http://www2.epa.gov/cleanwaterrule/clean-water-rule-litigation-statement

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-49]*)

Response to Late Comment BIO-1: Wetlands

Regulatory Jurisdiction

The comment states that the FSEIR provides no evidence of consultation with the U.S. Army Corps of Engineers (Corps) or State Water Resources Control Board in regards to the remediation that was undertaken on the site. In both the Draft EIR (Initial Study pp. 115 to 119) and the RTC document (Section 13.19, pp. 13.19-31 to 13.19-40), there was extensive reference to the Regional Water Quality Control Board's (RWQCB) Order as it relates to the remediation undertaken at the site that involved excavation of contaminated soil and monitoring of the groundwater and the compliance of the responsible parties to those Orders. The remediation was part of the preparation of the site for development. As stated in the RTC Response BIO-5 (pp. 13.19-31 to 13.19-40), because the site always has been and is currently under active study and seeking approvals for development, the site has not been abandoned and is not subject to federal jurisdiction under the Clean Water Act. There is no requirement to consult with the Corps of Engineers when that agency has no jurisdiction over the property in question.

The RTC Response BIO-5 recognized that the regulations adopted by the EPA and the Corps on August 28, 2015 were stayed by the Sixth Circuit Court of Appeals; however, the specific exemptions applicable to this site continue to be the policy and practice of the Corps of Engineers under the existing regulations.

The commenter further asserts that the FSEIR incorrectly relies exclusively on federal law and ignores the broader jurisdiction of the sate over all of its water. The RTC Response BIO-5 provided an explanation of the procedures and policies adopted by the State Water Resources Control Board and the Regional Water Quality Control Boards in terms of permitting over wetlands. The question at hand is not the definition of state waters, but rather how federal and state law relate to permitting over wetlands.

The commenter states that the FSEIR cannot point to any jurisdictional determination by the Corps. The comment cites documents that are not relevant to the fact that the project site is not considered jurisdictional and is not subject to federal or state regulations as wetlands. The remediation actions were required by the RWQCB as a part of the process of the future development of the site and therefore, the responsible parties did, in fact, undertake activities in response to a RWQCB Order. However, the water-filled depressions resulting from that ordered action are clearly not subject to regulations promulgated by the Corps of Engineers and the U.S. Environmental Protection Agency. On the other hand, the documents cited in the comment, refer to natural wetlands that are not considered jurisdictional under federal Supreme Court decisions. In these instances, if the Corps makes a determination that a wetland feature is “isolated”, it is still subject to state permitting. No such decision is required for the subject site as it is not considered jurisdictional.

The comment states that the site is subject to the Coastal Zone Management Act (CZMA). As noted above, the conditions on the site have been fully described in the Draft SEIR, Initial Study, and RTC document, and all relevant mitigations for biological resources have been

identified. No further analysis is required under the CZMA as no further federal permitting action is required under the federal regulations relating to the Clean Water Act.

In addition, the comment misinterprets RTC Response BIO-5 to say that state law is different than federal law in terms of application to the project site. As explained in the RTC document, the state process is consistent with and part of the federal wetland permit process. The State Water Resources Control Board maintains a web site on the wetland permit process and its wetland program (http://www.waterboards.ca.gov/water_issues/programs/cwa401/). On that web site, it provides a link to its current regulatory practice as it relates to wetlands entitled under the Clean Water Act Section 401 Water Quality Certification Program which states:

> "The State's Water Quality Certification (WQC) Program was formally initiated in 1990 in response to the requirements of Clean Water Act (CWA) §401. Issuing WQC for discharges requiring U.S. Army Corps of Engineers' permits for fill and dredge discharges remains a core responsibility. But the Program has evolved into also being the State's de facto wetland protection and hydromodification regulation program." (Page 1)

The State issues both 401 Water Quality Certifications and, for larger projects, Waste Discharge Requirements, to projects that require fill of wetlands as defined by the Corps of Engineers. As noted in the response to comments, the State is in the process of adopting a state wetland policy however, at present, the 401 Water Quality Certification program is the de facto wetland policy for the state.

Site Activities

The comment states that in their opinion, the alleged lack of physical activities is a basis for potential regulation of the site under Section 404 of the Clean Water Act. Physical activity as interpreted by BSK, a technical consultant engaged by the Mission Bay Alliance, from aerial photographs, is erroneously considered to be the only measure applicable to this site with respect to its site history. As noted in the RTC Response BIO-5, the remediation conducted on the site was undertaken as the first step in the plan for redevelopment of the site. The site was purchased by various parties for the purpose of development, plans prepared, environmental studies undertaken, and applications submitted for development,[1,2] including the most recent approval process. Some of these activities involve physical actions that are not discernable from aerial photographs. Nonetheless, there is no requirement in the Corps regulations for continued physical activity to be occurring. Design, environmental review, and permitting are normal steps in receiving approvals for development and such development cannot proceed without these approvals. To suggest that lack of physical activity is the only measure of a property owner's continued interest and eventual use of a

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[1] Salesforce.com Global Headquarters Complex, Master Plan & Major Phase Submittal, Mission Bay South: Blocks 26, 27, 29, 30, 31, 32, 33, & 34. Submitted to San Francisco Redevelopment Agency. September 13, 2011.

[2] San Francisco Planning Department, 2012. Executive Summary, Office Allocation for Salesforce proposal at Mission Bay Blocks 29-32. February 22, 2012. (Case report 2011.1423B for the Salesforce office allocation previously proposed at the project site.)

property is inconsistent with regulations and the required procedures necessary to undertake eventual physical actions to develop the property.

In addition, the comment mischaracterizes the development activities that have been undertaken on the site. There is not merely an "assertion of future development", but rather concerted and consistent development activities including environmental study, project design, and submittal of applications for development. The evidence includes the materials submitted for the project site and is described in the Initial Study, Draft SEIR, and the RTC document. Remediation activities conducted in 2001 and 2005 involved extensive construction activity to remove buildings, underground storage tanks, and other related infrastructure. Since that time, redevelopment of the site has been actively pursued by OCII and private developers (i.e., major phase approvals as well as Basic Concept and Schematic Designs for each relevant major phase for Alexandria Real Estate Equities in 2006, and Salesforce.com in 2011, with the most recent approval on January 31, 2012). Currently, the site is subject to planning and study for the construction of the proposed project.

Presence of Hazardous Materials on the Site

The comment states that a circular argument exists in RTC Response BIO-5 related to priority pollutants, yet ignores the fact that Section 323.4 of the Clean Water Act discussing priority pollutants deals with exempted activities that do not require permits. None of the activities (e.g., agriculture, logging roads, and temporary sediment basins) discussed under Section 323.4 will occur on the site, and therefore Section 323.4 is not applicable.

Site Description

The comment states that there was a failure to describe the existing conditions on the site. As discussed further below under Response to Late Comment BIO-2, the SEIR, including the Initial Study provided a detailed description of the existing conditions, the vegetation present, and the potential for sensitive wildlife to utilize the site. All existing biological resources on the site were clearly described and, mitigation, where appropriate, was identified. Regardless of the position taken by the commenter, there was no failure on the part of OCII to properly disclose information in regards to the existing conditions on the project site.

Issues Raised by Late Commenters on Biological Resources Setting

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-39

ECOLOGICAL CONDITIONS RESPONSE REVIEW SECTION 13.19 BIOLOGICAL RESOURCES

Response BIO-2: Setting

The response states, "The commenters' observations and review of ecological conditions are noted and are not inconsistent with the setting information presented in the Initial Study." (p. 13.19-11)

This assertion attempts to state that our prior analysis of the Project setting was correct, but still somehow incorrect. There is an open water body feature in the middle of the site that meets both state and federal wetland multi-parameter criteria, yet according to the Response this doesn't need to be fully described in the environmental setting or identified in the Project Description. This error in failing to provide and maintain an accurate site setting and its description continues through the analysis, and also within the findings:

"Portions of the site are unutilized, including a depressed area (measuring approximately 320 feet by 280 feet) created by an excavation and backfill associated with a prior environmental cleanup on the site." (COMMISSION ON COMMUNITY INVESTMENT AND INFRASTRUCTURE RESOLUTION NO. 70-2015, Adopting Finding 2. Project Site, no page numbers.)

The "depressed area" is also filled with water, that water is maintained permanently, and had to have a trench cut to it in order to drain the surrounding self-maintained wetland features. (See BSK prior comments, and BSK Wetland Delineation.) Furthermore, buried within the Response, there is a simplified description of the setting that includes the pond that is much more accurate than the Project Description, yet even that description still fails to identify its wetland characteristics. The effect of this continuing error in defining the environmental setting as it relates to wetlands, listed species and the habitats, is that the project impacts on the environment for the wetland and water features and their associated habitats are not disclosed in a manner that are either accurately identified or the project mitigated in any substantive way.

For example, several thousand pages within the Response document it more clearly identifies that there is water in the "excavation" and it functions as habitat: "The aquatic habitat on the project site consists of an isolated ponded excavation less than an acre in size created by past soil remediation activities." and "Limited opportunities for colonization by either California red-legged frog or western pond turtle since soil remediation of the site was conducted in 2005 means that the likelihood for these species to be present are slim given the extent of development in the project vicinity and absence of nearby occupied habitat from which individuals could disperse to the project site." (p. 13.19-14)

The description of the environmental setting is inaccurate, it fails to identify that there are wetland features and aquatic habitat, and the public and certifiers would have no idea that these wetland features and habitat existed unless they poured through several thousand pages of contradictory descriptions. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-39]*)

Response to Late Comment BIO-2: Biological Resources Setting

The commenter appears to be repeating his reference to page 3-10 of the Draft SEIR, which describes the proposed "Project Site and Existing Uses" within Chapter 3, Project Description. As described in the Draft SEIR, Chapter 3 is not the "sole description of the site as it relates to its biological resources." The response to the commenter's previous comment in the RTC document explained the discussion of the site's biological resources, including: "A complete description of the project setting in the context of biological resources (e.g., the vegetation communities and wildlife habitat within and surrounding the project) is included in Impact BI-1 of the Initial Study (pp. 77 to 79). Impact BI-3 (Initial Study, pp. 79 to 80) expands on the discussion of the deeper excavation at the site, including vegetation. Impact BI-4 (Initial Study, pp. 81 to 82) includes additional discussion regarding wildlife habitat and use at the site. Appendix A of the Initial Study lists the special-status species reported or with potential to occur near the project site. Thus, the Initial Study provides an accurate

description of the existing setting regarding biological resources. (RTC Response BIO-2: Setting, pp. 13.19-11 to 13.19-12.)

Also, as previously stated, subsequent visits to the proposed project site by project consultants, following publication of the Draft SEIR confirm conditions as described in the Initial Study. Additionally, the description of the site by BKS does not present any information that is inconsistent with the description presented in the Initial Study and Draft SEIR.

Issues Raised by Late Commenters on Special-status Species and Sensitive Natural Communities

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-40 O-MBA20L7-46

Response BIO-3: Special-Status Species and BIO-4: Sensitive Natural Communities

The Special-Status Response indicates that the provided multiple reconnaissance-level surveys are essentially equivalent to a protocol-level survey for attempting to identify that listed species do not occupy the site. This assertion is simply incorrect, as described by the very citations provided by BSK and the Response itself, and the provided analysis is replete with technical inconsistencies that again do not demonstrate the absence of listed species (WRA 2015[1]). This analysis is discussed in detail in the following section. The Sensitive Natural Communities response and its supporting analysis present a mischaracterization of the potential project impacts to listed species, the steelhead. No allegation was made by us that the interior of the site was suitable or subject to use by steelhead. Conversely, Critical Habitat which was not identified in the DSEIR, is now identified in the Response, but its ecological dimensions are mischaracterized.

The potential use of the site by other listed species was exclusive to as the California red-legged frog ([CRLF] *Rana draytonii*) and steelhead trout (*Oncorhynchus mykiss*). The report specifically does not assess the potential for use of the site by the western pond turtle (WPT). Therefore the Response mischaracterizes the study.

Site Surveys

The report does not provide the credentials and experience of the WRA wildlife biologist Claire Woolf, so it is impossible to ascertain the qualifications of this person. The report does not cite the use of the any survey methods or protocols, other than the site was 'traversed' on foot. For illustration, even the screening-level biological assessment of a site like this typically follows a variable intensity vehicular (to screen for sensitive bird species) and pedestrian survey to identify rare plants, to flush hidden and more secretive species and identify tracks, scat and burrows. In addition, even if the methods had been described, and protocols had been followed, the survey dates did not appropriately span the correct periods to assess for the (local) listed plant species.

Regardless, the efforts that have gone into this series of screening-levels surveys could have been protocol-level surveys completed by experts to definitively assess the site use by listed species. Protocol-level surveys are the only means by which a biological scientist can assert a negative species finding (absence). The protocol for floristic surveys, even if they had been completed, is clear: "a single field season does not constitute evidence(.)" (CDFG 2009; See Table 2 Special-Status

Animal Species Reported or With Potential to Occur Near the Event Center and Mixed-Use Development Area at Mission Bay Blocks 29-32. P 13.19-15).

For example, USFWS 2005 Survey Guidance for the CRLF was simply not followed. In cases where protocol-level surveys are unavailable, focused species-specific surveys (not to be confused with a focused survey that only looks for CNDDB listed species) by experts are the appropriate methodological approach. There is no evidence that this approach was followed either.

The report is silent on any aquatic species use, and on observations (or the absence of observations) for the CRLF and WPT. For example, a qualified biologist completing a survey for CRLF would have identified that there were, or were not, eggs, egg masses, tadpoles, or frogs visible; and, similarly, provide specific identification of the presence or absence of tracks/drag marks at/near basking locations for the WPT. The report is entirely silent on the aquatic community, which should have included the presence or absence of small fish, macroinvertebrates (aquatic insects), various worm species, and other prey sources. These are just a few of the types of observations that should have been made and why a follow-on species specific survey is different from a reconnaissance-level survey, and, why this precise approach was requested in our original analysis and comments.

It appears that the analysis uses protocol-level survey citations as inferential indications that these methods were applied, where they have not. The Response to Comments reiterates in the footnotes our earlier list of protocols and focused survey citations (See BSK 2015), yet again fails to apply these to the project as requested: California Native Plant Society (CNPS), 2014. Inventory of Rare and Endangered Plants (online edition, v8-02). Sacramento, California. http://www.cnps.org/cnps/rareplants/inventory/ (accessed September 10, 2014). CDFG, 2009. Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities. California Natural Resources Agency. November 24. USFWS, 2005. Revised Guidance on Site Assessments and Field Surveys for California Red-legged Frog.

For example, following the above cited protocol explains both why wetlands are special status natural communities and how to survey for special status plants [CDFG 2009]:

> "Most types of wetlands and riparian communities are considered special status natural communities due to their limited distribution in California. These natural communities often contain special status plants such as those described above. These protocols may be used in conjunction with protocols formulated by other agencies, for example, those developed by the U.S. Army Corps of Engineers to delineate jurisdictional wetlands or by the U.S. Fish and Wildlife Service to survey for the presence of special status plants."

Furthermore, the survey protocol specifies:

> "It is appropriate to conduct a botanical field survey when:
>
> Natural (or *naturalized*) vegetation occurs on the site, and it is unknown if special status plant species or natural communities occur on the site, and the project has the potential for direct or indirect effects on vegetation; or(.)" (*Emphasis added for clarity*.)

Yet, there is no evidence in the record that this special-status plant botanical survey was ever completed. The provided screening level effort only apparently reviewed the California Natural Diversity Database (CNDDB). Despite the admonition by the protocols, and the CNDDB's user agreement, that the use of the CNDDB is neither a substitute for a careful technical approach or all inclusive. For example, per the cited protocol, "every plant taxon that occurs on site is identified to the taxonomic level necessary to determine rarity and listing status." This was not completed, or if it was it, was not provided. These comments are simply provided for brief illustration, as it does not appear that the biologist intended to assert that the survey was anything more than a reconnaissance, as noted in the title. In any case the provided study and the CEQA analysis are not sufficient to determine the absence of the identified listed species and of assessing the potential environmental impacts on listed species.

Fisheries

For fisheries, the Response and the analyses mischaracterize the site and the designated Critical Habitat. The WRA report states that: "[the pond] is not conducive to the survival of steelhead due to elevated temperatures and low oxygen conditions evident by the dominance of filamentous algae in the depression. Steelhead would not be able to survive conditions such as those present in the depression." While those impressions are self-evident for steelhead trout, which are sensitive to environmental factors (and were never asserted by BSK to use the pond in the first place), the report makes no mention of the measurement of temperature or dissolved oxygen (DO) and neither of these can be visually estimated. Measurement of temperature and DO are easily and commonly accomplished in the field.

The Response, however, conflates these ad hoc field observations for trout with all other "aquatic species." The pond is not clearly suitable habitat for trout. However, there are aquatic plant species within the pond, and likely several other organisms, do use the ponds but those observations were not reported. Instead, the analysis in the Response makes a claim from literature: "Algae blooms occupy the entirety of ponded water within the depression. Such conditions can result in low dissolved oxygen concentration that is inhospitable and even lethal to aquatic organisms. "(p. 13.19-14) There are many kinds of algae, some are toxic, but most are not. However, the field work does not identify which algae occupy the pond, the DO concentration or temperature.

Critical Habitat

The Responses' second fisheries analysis goes on at length that aquatic Critical Habitat does not include the terrestrial potions of the site, and implies in one case and then contradicts itself later that the Bay bordering the site is also not steelhead Critical Habitat. The physical area described in the analysis as "excluded" is the surrounding watershed proper and not the Bay, which is unambiguously Critical Habitat and specifically the habitat which could be harmed by the project, as described in our original analysis (ESA[2]). There are Bays within the steelhead Critical Habitat analysis that have been specifically excluded, such as Suisun, but the *provided* analysis is simply incorrect *for San Francisco Bay*. See the analysis' cited NMFS letter: "Critical habitat was designated for CCC steelhead on September 2, 2005 (70 FR 52488) and includes PCEs essential for the conservation of CCC steelhead. Critical habitat in estuaries is defined by the perimeter of the waterbody as displayed on standard 1:24,000 scale topographic maps or the elevation of extreme high water, whichever is greater." (p. 28) The Bay is suitable and occupied habitat for steelhead "Steelhead of this size can withstand higher salinities than smaller fish (McCormick 1994), and are more likely to occur for longer periods in tidally influenced estuaries, such as San Francisco Bay." (p. 25)

Indeed the analysis identifies a single selection from the life history and impact analysis of the NMFS letter, ignoring the numerous other passages that describe potential migratory exposure to the site, ***while*** singularly failing to mention that one of the reasons for listing critical habitat is because habitat quality in the Bay had been impacted by projects such as the proposed arena: "Habitat degradation in the action area is primarily due to altered and diminished freshwater inflow, shoreline development, shoreline stabilization, non-native invasive species, discharge and accumulation of contaminants," (pgs. 37-39 and 40 respectively.)

There are the very same impacts that we have pointed out related directly to both the site-specific risk of contaminants degrading Critical Habitat, as well as clear cumulative effects from the project:

"The San Mateo HU is located on the coast immediately south of the Golden Gate Bridge and includes several small creeks including San Gregorio and Pescadero Creeks." "The Team concluded that these occupied areas contained one or more PCEs (i.e., spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs, including agriculture, agricultural and non-agricultural water withdrawals, urbanization, non-hydro dams, and road building and maintenance."

The issue of the Critical Habitat designation, within the Bay is clear:

"We now conclude that it is possible to delineate some estuarine areas in California (e.g., the San Francisco-San Pablo-Suisun Bay complex, Humboldt Bay, and Morro Bay) that are occupied and contain essential habitat features that may require special management considerations or protection. Such estuarine areas are crucial for juvenile salmonids, given their multiple functions as areas for rearing/feeding, freshwater-saltwater acclimation, and migration (Simenstad *et al*., 1982; Marriott *et al*. 2002). In many areas, especially the San Francisco Bay estuary, these habitats are occupied by multiple ESUs. Accordingly, we are proposing to designate specific occupied estuarine areas as defined by a line connecting the furthest land points at the estuary mouth."

The Response analysis cites a letter from the National Oceanographic Atmospheric Administration - National Marine Fisheries Service (NOAA-NMFS) in an attempt to diminish the perception of the possible exposure of the fish to the site, by stating that the population splits its migration mainly to the north of the site, when instead it provides a perfect illustration of the sort of trustee agency review that should be considered for the project's impacts on the estuary's environment, *a concurrence letter which the applicant has failed to secure*. (p. 13.19-21) This is the sort of biological analysis (Biological Assessment) and concurrence letter that the project *should get* to establish its potential impacts on a listed fish and its designated Critical Habitat. The Response fails to identify that the applicant or Lead Agency can simply request this concurrence from the federal fishery agencies and thus settle this issue.

The analysis attempts to imply that somehow the listed steelhead trout, and its habitat, is somehow not germane by the proposed site development. This is despite its identification by NOAA-NMFS as using for foraging and migration, these waters having been federally designated Critical Habitat, and the listing and designation as a result of its population decline by exposure to development and toxics.

This logical hand waving is a result of the project's failure to even identify that it was adjacent to occupied critical habitat (see BSK's prior comments.) Instead, the cited analysis by ESA, now attempts to conflate the spawning habitat of the designated stream critical habitat with the project site. (ESA 2015)

For example: "San Mateo Bayside HSA…was excluded from designated critical habitat for Central California Coastal steelhead DPS." The analysis states that its conclusion "is further supported" by the finding that the San Mateo Bayside HSA was excluded, as if there was any relevance to that fact. We concur that the conditions of those blocks are not suitable for steelhead, they are unlikely to have occupied that site after Mission Bay was completely filled in, do not currently live on those blocks, and are unlikely to occupy the site until sea level rise/and or the predicted tsunami elevations are reached (see also BSK comments).

Nowhere has anyone attempted to state or otherwise imply that somehow the Mission Bay Blocks 29-32 are a migratory fish passage, are access to a spawning stream, or are an isolated lake capable of holding an steelhead Evolutionary Significant Unit. However, clearly, and without ambiguity, the site is adjacent to, and influences both directly and indirectly, designated, occupied, critical habitat. Also that, NOAA-NMFS has clearly identified that they migrate and occupy adjacent to the site in the San Francisco Bay/Estuary.

The analysis required to demonstrate the nature and the extent of the project's impacts to the aquatic environment and on listed fish populations under CEQA (IV Biological Resources, a) and their critical habitat (IV Biological Resources, f), has not been completed. We understand that there remain significant impacts, and that the project should complete a Biological Assessment and submit this to the NOAA-NMFS and the California Department of Fish and Wildlife as a part of its analysis to either demonstrate that it has no significant impacts, or that it has impacts and has provided suitable mitigation, or made a finding of significant and unavoidable impact.

Sensitive Natural Communities

Similarly, the Response fails to adequately even define the Sensitive Natural Community at the site, completely ignoring the emergent wetland which was specifically identified by its own consultants (ESA 2014), as well as our prior analysis assessing Sensitive Natural Communities. Please note that

there is limited Response provided for the whole list of BSK-identified communities, but focusing on just one:

> "California identifies one of these habitat types as sensitive: *Bulboschoenus maritimus* (Salt marsh bulrush marshes) Alliance, status S3[3] (S3 = Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.)" (BSK initial comments on the DSEIR.)

The Response states that the site does not qualify due to a lack of density of *Bulboschoenus maritimus* by simply asserting that the density is not enough, without any supporting analysis and then goes on to say that regardless, there is plenty of that particular Sensitive Natural Community in the Bay.

The Response does finally acknowledge that ruderal sites can be habitat for rare plants, but its study fails to follow the rare plant protocol identified in its own citations. (See CNPS And CDFG.) In fact, no evidence of the qualifications of the surveyor and experience with the listed rare plants is provided. Furthermore, the Response provided a specific rebuttal to its own prior comments that ruderal and impacted sites might not have rare plants. (p. 13.19-19) Indeed rare plants can be found in many settings that are not the historic, pre-urbanization ideal condition, which the Response even specifically identifies for one of the species in question, Franciscan manzanita (Arctostaphylos franciscana). This species was at a previously unidentified location within freeway median. Yet, even this finding of a rare plant in an unlikely, highly disturbed location is apparently not a cautionary discovery and the Response sees no need for an appropriate survey. By refusing to complete the proper, definitive surveys, and by ignoring documented Sensitive Natural Communities, the project has impacts that remain unanalyzed and thus unmitigated.

Footnotes:

1 http://www.gsweventcenter.com/GSW_RTC_References/2015_1001_WRA.pdf
2 http://www.gsweventcenter.com/GSW_RTC_References/2012_1001_ESA.pdf
3 https://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-40]*)

Finally, there needs to be a full protocol-level survey for the listed plants, including San Francisco manzanita (*Arctostaphytos franciscana*) during the appropriate season, to make an identification of the site's plants by an qualified botanist with field experience in the identification of that and other local listed species. If special–status species are identified at the site a Worker Environmental Awareness Plan should be put into effect. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-46]*)

Response to Late Comment BIO-3: Special-status Species and Sensitive Natural Communities

With regard to site surveys, the commenter appears to assert that every site, no matter its condition or history, demands that protocol-level surveys be conducted to determine whether special status species are present. That is not correct. In the case of the proposed project site, reconnaissance level surveys were performed to assess the presence of habitat and its suitability or potential to support special status species. The Draft SEIR does not assert that reconnaissance surveys are equivalent, essentially or otherwise, to protocol-level surveys. Responses BIO-3 and BIO-4 in the RTC document provide an explanation of the process by which the project site and its potential to support any of the special status species

were assessed. Following industry-standard procedures for evaluating the regional context and site-specific conditions, qualified biologist concluded that suitable habitat for special status species is not present on the site and that site-specific conditions are biologically limited. Protocol-level surveys are not necessary to support this conclusion, nor are they warranted given the condition of the site. (*Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App. 4th 1383, 1396-1398 [rejecting petitioner's argument that a lead agency was required to conduct a protocol-level survey].) The commenter provides no additional supporting evidence or mechanism by which special status species, particularly aquatic or amphibian species, could occupy the water-filled depression, given the origins and history of the feature. Therefore, OCII continues to disagree with the commenter that the proposed project site has potential to support special status species, or that additional surveys are warranted.

With regard to fisheries, OCII agrees with the commenter that the unsuitability of the depression to support steelhead is self-evident. For this reason, measurements of temperature or dissolved oxygen (DO) are not warranted, regardless of how easy or commonplace they are.

Regarding critical habitat, the RTC Response BIO-4 (pp. 13.19-19 to 13.19-22) and RTC Response HYD-2 (pp. 13.21.-9 to 13.21-14) addressed previously raised comments asserting potential contaminants in runoff from the site to adversely affect steelhead critical habitat. As explained in those responses, there is no evidence that the proposed project would result in such impacts. The commenter does not provide any new evidence that would change the conclusion. In addition, RTC Response BIO-4 responded to the commenter's concerns about the possibility of effects of the proposed project on designated critical habitat for steelhead. OCII disagrees with the commenter's position that the proposed project could have an effect on critical habitat for steelhead; as explained in previous responses in the RTC Document, the project, which is not located in the Bay or directly on its shoreline, would not have any effect on critical habitat through any means. Further, as stated in the RTC Response BIO-4, "The proposed project site at Mission Bay Blocks 29-32 falls within the San Mateo Bayside HSA, which, as part of the 2005 determination (70 FR 52488; September 2, 2005), *was excluded* from designated critical habitat for Central California Coastal steelhead DPS." (emphasis added). For these reasons, consultation with the National Marine Fisheries Service is not necessary for the purpose of complying with CEQA.

With regard to the comments on sensitive natural communities, OCII, in consultation with its biological resources consultants, disagrees with this characterization of vegetation in the water-filled depression as a sensitive natural community. The RTC Response BIO-5 (pp. 13.19-37 to 13.19-38) responded to this comment: "The comment's characterization of the excavations on site as salt marsh bulrush marsh is inaccurate. As described in Sawyer, Keeler-Wolf, and Evans (2008) salt marsh bulrush marsh consists of communities dominated (>50% relative cover) by salt marsh bulrush (*Bolboschoenus maritimus*) located in seasonally flooded mudflats and tidal brackish marshes. Salt grass (*Distichlis spicata*) and brass buttons (*Cotula coronopifolia*) are by far the dominant species present in the excavations, and therefore the vegetation

community present is better characterized as the *Distichlis spicata* herbaceous alliance, which is listed as an S4, and not considered to be limited in distribution and abundance within the State. Additionally, this vegetation community is regionally abundant both in areas connected to the San Francisco Bay and in areas disconnected from the Bay."

The Draft SEIR/Initial Study, as augmented by RTC document Section 13.19, also provides the basis for the conclusion that the proposed project site does not provide habitat for special status plant species, which is based on background research, site evaluation and lack of suitable habitat for plant species with geographic or historic potential to occur.

Comment O-MBA20L7-46 asserts there should be full protocol-level surveys for the listed plants. OCII, in consultation with its biological resources consultants, has determined that protocol-level surveys for listed plants are not warranted, based on the foregoing explanation of how a lack of suitable habitat exists on the site. In particular, as explained in RTC Response BIO-4 (pp. 13.19-19 to 13.19-20), the specifics of soils and geology that are fundamental to the occurrence of Franciscan manzanita (*Arctostaphylos franciscana*) are absent from the site. Furthermore, it would be plainly evident to any qualified biologist conducting a reconnaissance survey of the proposed project site whether a perennial shrub meeting the particular and recognizable characteristics of any manzanita were present on the site. Having eliminated this possibility through such surveys, no further surveys are warranted.

Issues Raised by Late Commenters on Avian Impacts

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-42 O-MBA20L7-45

Response BIO-6: Avian Impact

Foraging habitat losses are dismissed out of hand, despite various consultant's bird observations, and a specific assessment of available replacement habitat provided by BSK in its comments. (p. 13.19-30, 13.19-47 and 48) Then the Response analysis goes on to identify that replacement habitat is going to be made available by the project: "…while not included under the project purview, the adjacent, planned Bayfront Park will likely include landscaped and natural areas that offer similar or improved foraging and cover opportunities for local birds that would offset any perceived habitat loss associated with the proposed project development." It appears that despite its protestations, the Project is attempting to mitigate for its impacts without disclosing the impact, thresholds, and the details of the relevant Mitigation and Monitoring. (p. 13.19-38 and 13.19-47 and 48)

Incremental, cumulative impacts to wetlands, foraging, and nesting habitat are exactly why CEQA has a cumulatively considerable analysis in order to identify and mitigate these losses. Even then, where the project identifies it could directly kill birds through its construction impacts, it still gets that mitigation wrong for ground nesting birds. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-42]*)

The sole mitigation for the loss of the water and wetlands, habitat and Biological Resources, is as follows: (Initial Study Section E13)

> M-BI-4a: Preconstruction Surveys for Nesting Birds To the extent practicable, vegetation removal and grading of the site in advance of new site construction shall be performed between September 1 and January 31 in order to avoid breeding and nesting season for birds. If these activities cannot be performed during this period, a preconstruction survey of ***onsite vegetation*** for nesting birds shall be conducted by a qualified biologist. (Emphasis added.)

Onsite vegetation is an inappropriate and overly narrow distinction. Birds nest on the ground as well as in shrubs and grasses, including species such as the previously identified juvenile killdeer (*Charadrius vociferous*) and Canada geese (*Branta canadensis*) which were observed at the site. Even the prior Response Section identifies that all birds nesting at the site should be protected from construction impacts: "Potential impacts to urban birds protected under the Migratory Bird Treaty Act and nesting in the excavations or vegetation within the entirety of project site are mitigated by implementation of Mitigation Measure M-BI-4a (Preconstruction Surveys for Nesting Birds), as discussed in the Initial Study for non-special-status wildlife. (See Initial Study, pp. 81-83.)" (p. 13.19-37) Although it also fails to identify the unvegetated, non-excavated areas, which comprise the majority of the site. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-45]*)

Response to Late Comment BIO-4: Avian Impacts

The commenter states that the wording of Mitigation Measure M-BI-4a is "overly narrow" with respect to appropriate pre-construction survey for nesting birds. OCII disagrees. The comment mischaracterizes the mitigation measure. The commenter's interpretation of the mitigation measure is inconsistent with the intent of the measure and would not be applied by a qualified biologist conducting the preconstruction surveys. The reference to "onsite vegetation" does not mean that only nests within vegetation must be considered. The existing site conditions consists of two paved parking lots in the north and west portions of the site and the remainder of the site consists of an undeveloped ruderal lot. A qualified biologist conducting preconstruction surveys would surveys all areas where nesting could occur onsite, including areas of the site where ground nesting birds might nest such as slight topographical depressions, as part of standard professional practice.

The SIER does not attempt to mitigate impacts to bird species by noting that Bayfront Park will provide foraging and cover opportunities for local birds. As explained in the SEIR and RTC Document, the project would not have a significant impact on habitat for bird species, and therefore no mitigation is required. The RTC Document notes that the bird species observed foraging onsite are common to San Francisco and would continue to be supported by vegetation communities and water features in the project vicinity, including foraging and cover opportunities at Bayfront Park. (RTC Document, pp. 13.19-38; 13.19-47 to 13.19-48.)

SECTION 16: RESPONSES TO LATE COMMENTS ON GEOLOGY

The comments and corresponding responses in this section cover topics analyzed in the Initial Study, Section E.14, Geology and Soils, which is included in Appendix NOP-IS of the SEIR, as augmented in RTC document Section 13.20. These include topics related to:

- Issue GEO -1: Geology Approach to Analysis, Tiering
- Issue GEO-2: Reliance on Building Code Requirements and Emergency Response

Issues Raised by Late Commenters on Geology Approach to Analysis, Tiering

This response addresses all or part of the following comments, which are quoted below:

O-MBA16S6-6

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6. Geology and Soils

According to the FSEIR, all the concerns raised by the public can be addressed in the future by application of regulatory requirements. Furthermore, the FSEIR explains that design detail can be developed after certification of an EIR. Taking the theory advanced in the FSEIR to its logical conclusion, it would appear unnecessary to analyze impacts related to Geology and Soils at all.[1] This begs the question of what the purpose of an EIR, which is to:

> Identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided.

(Pub. Resources Code, § 21002.1, subd. (a).) The implementing CEQA Guidelines then describe how an EIR should consider and discuss significant impacts of a project. (CEQA Guidelines, § 15162.) To assist in that process, the Office of Planning and Research has also provided a sample checklist in CEQA Guidelines Appendix G for Geology and Soils, among other impacts.

The 1998 SEIR did include a detailed analysis of then-existing conditions and then-existing standards as they applied to the land uses contemplated in the Mission Bay Plan area. As explained elsewhere, the 1998 SEIR did not analyze any development such as the Arena and Entertainment Center. Comments on the current DSEIR explain that the currently proposed use is completely different than the previously contemplated uses for the site. Additionally, standards regarding seismic safety and construction methodology have changed since 1998. Last, the actual conditions on the site have changed, as large quantities of contaminated soil were removed from the site, and 80,000 cubic yards of other (apparently also contaminated) materials were backfilled into the site from elsewhere in Mission Bay.

According to the City's interpretation of CEQA, all of these details can be addressed after certification of the EIR. This approach, however, skips over the analysis and mitigation process that is essential to the EIR process. In this case, that process occurred in 1990 and 1998, and as essentially accepted in the FSEIR, the applicable standards are very different now as compared to at that time. Relying on this outdated analysis, as updated by numerous documents prepared outside of the public review process and outside the current SFEIR fails to meet the informational purposes of CEQA. While tiering is permissible in certain circumstances, its use in these circumstances defeats the public information purposes of CEQA.

Though it did not specifically address the same tiering issues as are present here, the California Supreme Court's opinion in *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal. 4th 412, 443 is instructive:

> The audience to whom an EIR must communicate is not the reviewing court but the public and the government officials deciding on the project. That a party's briefs to the court may explain or supplement matters that are obscure or incomplete in the EIR, for example, is irrelevant,

> because the public and decision makers did not have the briefs available at the time the project was reviewed and approved. The question is therefore not whether the project's significant environmental effects can be clearly explained, but whether they were.

Here, the analyses in the 1990 and 1998 are no longer pertinent. The City admits that none of the mitigation measures developed during that time even apply now. Subsequent brief descriptions in the IS/NOP also fail to characterize the full nature and extent of the seismic and other hazards that will result from construction of the Project. Now, the FSEIR includes yet additional analysis and information regarding how impacts related to Geology and Soils will be addressed later through regulatory processes alone. This review process does not clearly explain the effects of the Project to the public.[2]

In addition to this overarching flaw in the City's approach to analyzing impacts related to Geology and Soils, BSK Associates has also prepared a technical memorandum responding to several of the responses provided in the FSEIR concerning Geology and Soils and related Hydrological impacts from tsunami and sea level rise risks. (BSK Geology Report attached as Exhibit 2.) This additional information further demonstrates the need to prepare a stand-alone, publicly comprehensible analysis of these environmental impacts prior to making any decision about the Project.

In summary, the information submitted by the Alliance constitutes substantial evidence of a fair argument that the Project will have a significant adverse Geology and Soils impacts. In the alternative, per CEQA section 21166 and CEQA Guidelines section 15162, the facts described above constitute a change in circumstances since the 1998 SEIR involving, and significant new information showing, a new significant effect not previously analyzed in the 1998 SEIR. Under either standard, the City must prepare and circulate for public comment an environmental impact report to review the Project's impacts concerning geology and soils.

Footnote:

[1] Indeed, there have been efforts to alter CEQA so that there would be no need to analyze an impact at all if there was an applicable regulatory standard. This "standards-based" approach to CEQA "reform" was abandoned after one of its main champions, former Senator Michael Rubio, resigned from the Legislature to take a government-affairs job with Chevron in early 2013.

[2] This same deficiency applies to all of the resource areas for which there was no new analysis in the DSEIR.

(*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-6]*)

Response to Late Comment GEO-1: Approach to Analysis, Tiering

The commenter states that the approach reflected in the Final SEIR improperly allows for the development of design details after certification of the EIR. This approach, according to the commenter, would obviate the need for any analysis of the project's impacts on geology and soils.

OCII disagrees. The Final SEIR does not ignore impacts related to geology and soils. The Initial Study / Notice of Preparation (IS/NOP) explains why these impacts were adequately addressed in the 1990 and 1998 Program EIRs. (IS/NOP, pp. 84-93.) OCII did not receive comments on the IS/NOP's discussion of geology and soils during the scoping period following distribution of the IS/NOP. OCII did receive comments on geology and soils in letters submitted on the Draft SEIR. The Final SEIR includes these comments, as well as OCII's responses. (See Final SEIR, Chapter 13.20.)

The IS/NOP and the responses to comments explain the building codes and regulatory requirements with which building designs must comply. Under CEQA, the EIR must

contain sufficient information to enable the lead agency to determine whether the project's impacts will be significant. The development of final building or structural designs is not required in order to provide this level of information. (See *Oakland Heritage Alliance v. City of Oakland* (2011) 195 Cal.App.4th 884, 910 [application of seismic codes sufficient to address geologic hazards in seismically active area where office buildings would be located]; *City of Maywood v. Los Angeles Unified School Dist.* (2012) 208 Cal.App.4th 362, 411-412 [compliance with regulatory standards as adequately addressing hazardous materials at school site]; *Dry Creek Citizens Coalition v. County of Tulare* (1999) 70 Cal.App.4th 20, 25-28 [final design of diversion structures not required]; *California Oak Foundation v. Regents of the University of California* (2010) 188 Cal.App.4th 227, pp. 269-271 [rejecting claim that project description was too vague because description included sufficient information to assess whether impacts would be significant].)

The commenter states that the proposed event center is a different use than the use that was anticipated and analyzed in the 1990 and 1998 Program EIRs. The IS/NOP analyzed the proposed project's impacts in each resource area to determine whether the proposed project would result in impacts that were not analyzed in the 1990 and 1998 Program EIRs. The IS/NOP thus served to focus the analysis in the Draft SEIR on those resource areas where further analysis would be appropriate. OCII did not receive comments on the IS/NOP asking OCII to broaden the scope of its analysis to address geology and soils. The Draft SEIR analyzed in detail the following resource areas: plans and policies; transportation; noise and vibration; air quality; greenhouse gas emissions; wind and shadow; utilities and service systems; public services; hydrology and water quality; growth inducing impacts; and alternatives. After OCII circulated the Draft SEIR for public review and comment, OCII received comments requesting further analysis of additional resource areas, including (for example) geology and soils. The Final SEIR provides detailed responses to these comments.

The commenter cites two events that have occurred since 1998 that warrant further analysis: (1) different seismic standards, and (2) the excavation of contaminated soil and import of other soil.

(1) Seismic safety standards have changed since 1998. Those changes include standards applicable to uses that involve public assemblies. This issue is discussed at length in RTC Section 13.20.2. This response identifies the seismic standards with which the event center and other building plans must comply. Compliance with these standards will be determined by the San Francisco Department of Building Inspection based on a site-specific geotechnical evaluation. Compliance with these requirements will ensure that seismic hazards are addressed. This process has been in place in the Mission Bay Plan area since its inception. For additional information on geologic hazards, including seismicity, please see Response to Late Comment GEO-2 in Section 16 of this Exhibit D.

(2) Contaminated soils are present on the site. Some of the contaminated soils on the site are present due to backfilling that occurred after 1998. This issue is discussed in RTC Section 13.22.4. The applicant has performed a Phase II investigation that characterizes the presence of hazardous materials at the site. This information is considered sufficient for purposes of addressing whether impacts associated with contaminated soils are

significant under CEQA. Compliance with the Mission Bay Risk Management Plan and Article 22A of the San Francisco Health Code (Maher Ordinance) will avoid potential impacts associated with the presence of hazardous materials at the site. The applicant has submitted a Site Mitigation Plan and a Dust Monitoring Plan to demonstrate how the site will be managed to avoid significant impacts associated with the presence of hazardous materials. The City Health Department has reviewed and approved these plans in compliance with Article 22A. For additional information, please see Response to Late Comment HAZ-1 in Section 18 of this Exhibit D.

The commenter states the Final SEIR does not provide sufficient information to meet the requirements set forth in the California Supreme Court's decision in *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412. In that case, the Court criticized the respondent agency for piecing together information in the agency's briefs filed with the court in an effort to plug informational gaps in the agency's record.

In this case, by contrast, the information on geology and soils does not appear in briefs filed by OCII. Rather, that information appears in the 1990 and 1998 Program EIRs, the IS/NOP, and in responses to comments on the Draft SEIR, all of which are available to the public and to decisionmakers. The SEIR cites the reports and other documents that provide the information upon which this analysis is based. All of these reports and other documents are available in OCII's administrative record, which is posted on the AB 900 web site for the project. Because geology and soils have been addressed in three different EIRs, the "substantial evidence" standard of review (rather than the "fair argument" standard of review cited by the commenter) applies with respect to this analysis. For more information on "tiering" and on OCII's reliance on the 1990 and 1998 Program EIRs, please see Section 3 of this Exhibit D (Issue ERP-2: Tiering).

Issues Raised by Late Commenters on Reliance on Building Code Requirements and Emergency Response

This response addresses all or part of the following comments, which are quoted below:

O-MBA16S6-12

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1. Response GE0-1, page 13.20-10 states "The 2014 Langan Treadwell Rollo (LTR) Geotechnical Evaluation provides recommendations regarding foundation and building design in order to comply with applicable codes. These recommendations will be incorporated into the design of the event center and other buildings, including the sub-surface facilities and the designs will be submitted to the DBI for its approval." On page 11 of the 2014 LTR report included the following "The conclusions and recommendations presented herein are preliminary and should not be relied upon for design." Therefore, the 2014 LTR cannot be used for design. Design features which may be required for Geotechnical Engineering purposes, that have not been confirmed may be highly variable and may result in significant environmental impacts. For illustration a design that calls for a deep foundation on drilled piers/piles has dramatically different impacts than a design that uses soil densification or in-situ treatments.

2. Response GE0-1, page 13.20-12 states "Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead and live loads. Therefore, structures designed in accordance with the San Francisco Building Code are designed to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage." This statement is not correct and does not apply to sites, such as Mission Bay Blocks 29-32, that are located on soft soils or liquefiable soils. Seismic response of structures located on soft or liquefiable soils is non-linear and requires a site specific seismic response analysis (See ASCE 7-10, Section 20.3.1}.

3. Numerous responses throughout Section 13.20, presented local and state building code requirements as mitigation measures for various geologic hazards that are present at the site. This approach of utilizing design level mitigation that will be prepared at a later date, may be a valid method for a simple project located on stiff soils where changes in design have minor impact. The proposed structure is highly complex, with problematic subsurface conditions that will require significant ground modifications that could themselves have potentially significant impacts on the surrounding area. Based on the size and complexity of the structure, the impacts and cumulative impacts need to be determined during the CEQA process such that the impacts of the building methods can be fully evaluated. See #1 for a construction related example that may have variable environmental impacts.

4. GE0-2 page 13.20-18, states "Further, as discussed in more detail in Section 13.22, Hazards and Hazardous Materials, Response HAZ-3, San Francisco emergency response procedures and evacuation routes are addressed in Impact HZ-3 of the Initial Study (pp. 119 through 121). As summarized in that impact analysis, the City has a published Emergency Response Plan dated 2010 and prepared by the Department of Emergency Management subsequent to publication of the 1998 Mission Bay FSEIR as part of the City's Emergency Management Program." Our review of the reference provided, did not disclose any method or actions that the City or County could take or has taken to prevent geohazard impacts, such as liquefaction induced sand boils that may develop along the surface streets surrounding the project. Sand boils that may occur during an earthquake could result in significant settlements that would render the roads unusable for evacuation or emergency response. This issue has not been evaluated and considering that 18,000 people may be trying to evacuate from the area into unusable roads, this is a significant impact that has not been addressed. State and local building codes do not have provisions for evaluating and mitigating liquefaction hazards to may occur under roadways, therefore utilizing building codes during the design phase to address this issue would not be effective.

5. GE0-2 page 13.20-18, states "The required extent of removal and replacement with engineered fill would be determined on the basis of the site-specific geotechnical investigation discussed on p. 87 of the Initial Study and would be conducted in accordance with the Site Permit process described in Response GE0-1." See our response #3 above.

6. GE0-3 pages 13.20-20 to 13.20-21, See our response #3 above.

7. GE0-4 pages 13.20-21 to 13.20-23, See our response #3 above.

(*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-12]*)

Response to Late Comment GEO-2: Reliance on Building Code Requirements and Emergency Response

This comment letter has seven individually numbered items, which are addressed as indicated below.

Reliance on Building Code Requirements (Item Numbers 1 and 2 of Comment Letter)

The commenter contends that the seismic design provisions of the current San Francisco Building Code referenced in Response GEO-1 of the RTC document (Section 13.20.2) do not apply to sites such as the project site that are located on soft or liquefiable soils. Instead, the commenter indicates that a site specific seismic response analysis is required in accordance with Section 20.3.1 of the American Society of Civil Engineers/Structural Engineering Institute design standard "Minimum Design Loads for Buildings and Other Structures" (ASCE/SEI 7-10). The comment also states that the responses provided in Section 13.20 of the RTC document refer to building code requirements as mitigation measures. In addition, the commenter states that due to the caveats included in the geotechnical evaluation, the preliminary geotechnical evaluation cited in the Initial Study cannot be relied on for project design.

Response GEO-1 of the RTC document (Section 13.20.2) provides information to augment and support the conclusion of the Initial Study that geologic and seismic impacts of the proposed project would be less than significant with compliance with the requirements of the San Francisco Building Code, including completion of a site specific geotechnical investigation (see Impact GE-2, pp. 86 and 87 of the Initial Study). As discussed in RTC Response GEO-1, compliance with all requirements of the San Francisco Building Code is ensured and enforced through the Site Permit process implemented by the San Francisco Department of Building Inspection.[3] Requirements related to assessment of liquefaction hazards, including compliance with the standards specified in ASCE/SEI 7-10, are addressed on pp. 13.20-10 and 13.20-11 of the RTC document. The discussion of Earthquake Design Requirements on p. 13.20-11 further references compliance with Section 20.3.1 of ASCE/SEI 7-10. Response GEO-3, Section 13.20.4 of the RTC document, further clarifies San Francisco Building Code requirements regarding design requirements to alleviate the effects of liquefaction.

Regarding the commenter's concern that the preliminary geotechnical evaluation will be relied upon for project design, the SEIR's use of the information in the preliminary geotechnical evaluation for CEQA review does not imply that the information would be used for detailed project design. As discussed in the Project Description (pp. 3-46 and 3-48 of the SEIR), the proposed structures would be supported on deep foundations utilizing drilled augercast piles; soil improvements are not proposed. The preliminary geotechnical investigation includes a preliminary recommendation that the piles should gain support in underlying competent soils (dense sands or bedrock) and be designed to withstand the anticipated lateral pressures. The environmental effects related to construction of this foundation system are addressed in many environmental topics analyzed in the SEIR, including Noise and Vibration and Geology and Soils. As discussed in Response GEO-1 of the RTC document (Section 13.20.2), the recommendations of the preliminary geotechnical evaluation would be appropriately expanded upon in the site specific geotechnical

[3] City and County of San Francisco Department of Building Inspection, Administrative Bulletin AB-032, Site Permit Processing. June 4, 2012.

investigation conducted in accordance with Section 1803 of the San Francisco Building Code.[4] This site specific geotechnical investigation would identify geologic hazards and seismic conditions that must be addressed in the project design. The geotechnical recommendations and subsequent design of the foundation and structural systems of the proposed structures would be subject to review and approval by the DBI in accordance with the Site Permit process discussed in Response GEO-1 of the RTC document (Section 13.20.2).

Building Code Requirements as Mitigation Measures (Item Numbers 3, 5, 6, and 7 of Comment Letter)

Under CEQA, impacts related to seismic phenomena such as ground shaking and seismically-induced ground failure (including liquefaction, lateral spread, and seismically-induced settlement) would be significant if the project would expose people or structures to potential substantial adverse effects related to these hazards. Compliance with the above requirements that are enforceable through DBI's Site Permit process would ensure that people and structures would not be exposed to such adverse effects. Therefore, the requirements are not mitigation measures, rather they are enforceable and mandatory regulatory requirements that would ensure that significant adverse geologic and seismic impacts are avoided. While the extent of soil excavation could be different than originally anticipated, the potentially adverse geologic effects of soil excavation (including settlement from excavation and construction-related dewatering) would be appropriately addressed by implementation of the recommendations of the site-specific geotechnical report and compliance with the San Francisco Building Code requirements as discussed in Impact GE-3 of the Initial Study (see pp. 88 through 91).

As discussed in Response GEO-1 of the RTC document (Section 13.20.2), numerous CEQA cases support the methodology used in Impacts GE-1 and GE-3 of the Initial Study (pp. 86 through 91) for assessing geologic and seismic impacts. One in particular, *Oakland Heritage Alliance*, *supra*, 195 Cal.App.4th 884, is worth discussing at length. There, the court upheld an EIR that relied on compliance with existing Building Code requirements in finding seismic impacts would be mitigated to a less-than-significant level. The proposed project consisted of a plan to construct a complex of office buildings in a seismically active area; specific building designs had not been prepared. The EIR included a discussion of Building Code requirements intended to promote structural safety in the event of an earthquake. (*Id*. at pp. 908-909.) The EIR explained that, as part of its investigation of seismic impacts, the developer had conducted a preliminary geotechnical investigation to determine overall engineering feasibility and to inform the preliminary designs. (*Id*. at p. 892.) The EIR required that before the issuance of a building permit for any portion of the project site, the developer would submit a design level investigation for the project that would "be in accordance with applicable City ordinances and policies and consistent with the most recent version of the California Building Code, which requires structural design that can accommodate ground accelerations expected from known active faults." (*Id*. at pp. 890-892.) The court noted that the Building Code and city regulations required investigation and

[4] City and County of San Francisco Department of Building Inspection, Information Sheet, Geotechnical Report Requirements. May 20. 2015.

recommendations to avoid seismic hazards. (*Ibid*.) The court concluded that compliance with the building code and other regulatory provisions, in conjunction with a geotechnical investigation, provided substantial evidence that the mitigation measures specified in that EIR would reduce seismic impacts to a less than significant level.

In this case, compliance with the San Francisco Building Code requirements and related permit conditions is mandatory. It is therefore reasonable to assume that the proposed project will comply with these requirements. (*Oakland Heritage Alliance v. City of Oakland* (2011) 195 Cal.App.4th 884 [holding it was reasonable for agency to expect that environmental regulations would be followed].) Moreover, although they are not project-specific mitigation measures, these existing regulatory requirements are included in the Mitigation Monitoring and Reporting Program (MMRP) approved by OCII for the proposed project. (See MMRP, pp. 57-58.) These requirements further ensure that these requirements are complied with. (Pub. Resources Code, § 21081.6, subd. (a); *Lincoln Place Tenants Assn. v. City of Los Angeles* (2007) 155 Cal.App.4th 425, 446.)

Emergency Response Procedures (Item Number 4 of Comment Letter)

The commenter states the City and County of San Francisco (CCSF) Emergency Response Plan does not include any measures to address geohazards such as liquefaction-induced sand boils that may develop along surface streets surrounding the project, making the roads unusable for evacuation and emergency response purposes. Note that the effect of geohazards on city streets is not an impact of the proposed project. While streets in the vicinity of the proposed project could potentially experience some damage in the event of a major earthquake, which could affect access for emergency response vehicles and for evacuation, the City's Emergency Response Plan[5] (dated 2010 and prepared by the Department of Emergency Management subsequent to publication of the 1998 Mission Bay FSEIR) accounts for this. Specifically, the Transportation Annex[6] describes the procedures for assessment, identification of temporary alternative solutions, and restoration of damage to transportation systems, facilities and infrastructure due to an emergency incident. There are numerous streets providing access to the project site, including Terry A. Francois Boulevard, Third Street, 16th Street, and South Street. Therefore alternative access and evacuation routes would be available in the event that one of the major arterials was inaccessible as a result of earthquake damage. Therefore, the project would not result in adverse effects related to emergency evacuation as concluded in Impact HZ-3 of the Initial Study (pp. 119 through 121) and supported by Responses GEO-2 and HAZ-8 of the RTC document (Sections 13.20.3 and 13.22.9).

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[5] San Francisco Department of Emergency Management, City and County of San Francisco Emergency Response Plan, December 2010. Available at: http://www.sfdem.org/modules/showdocument.aspx?documentid=1455. Accessed on November 11, 2015.

[6] San Francisco Department of Emergency Management, City and County of San Francisco Emergency Response Plan, ESF#1: Transportation Annex. Available at http://www.sfdem.org/modules/ShowDocument.aspx?documentid=838. Accessed on November 11, 2015.

SECTION 17: RESPONSES TO LATE COMMENTS ON HYDROLOGY AND WATER QUALITY

The comments and corresponding responses in this section cover topics related to hydrology and water quality. These topics are analyzed in the SEIR, Section 5.9 Hydrology and Water Quality as well as in the Initial Study, Section E.15, Hydrology and Water Quality (Appendix NOP-IS of the SEIR), as augmented in RTC document Section 13.21. These include topics related to:

- Issue HYD-1: NPDES Permit Compliance
- Issue HYD-2: Tsunami Risk
- Issue HYD-3: Water Quality of Stormwater Runoff
- Issue HYD-4: Water Quality, Interim Wastewater System Improvements
- Issue HYD-5: Water Quality Regulatory Framework

Issues Raised by Late Commenters on NPDES Permit Compliance

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-7 O-MBA20L7-36 O-MBA21L8-2 PH2-Lippe-2

B. The Responses to Comments Hyd-3 - Hyd-6 are Inadequate.

My July 24, 2015 comment letter regarding hydrology, water quality and biological impacts observed that the DSEIR's heavy reliance on City compliance with its NPDES permit to ensure the Project's combined stormwater and sewage impacts are less than significant is an unsupported assumption. The RTC simply repeats this unsupported assumption many, many times. Some examples follow.

> Implementation of these actions in compliance with the requirements of the NPDES permit would ensure that water quality impacts would be less than significant.

(RTC at p. 13.21-17.)

> It is reasonable to conclude that compliance with the Bayside NPDES permit would not result in adverse water quality effects because the permit specifies discharge prohibitions, dry-weather effluent limitations, wet-weather effluent performance criteria, and receiving water limitations that are protective of the beneficial uses and associated water quality objectives for San Francisco Bay, the receiving water. Monitoring and reporting requirements to demonstrate compliance with water quality objectives are also specified in the permit.

(RTC at p. 13.18.)

> Compliance with these plans, policies, and water quality criteria and objectives as enforced through the Bayside NPDES permit ensures that discharges of treated effluent from the SEWPCP are protective of water quality in San Francisco Bay. Therefore, compliance with the Bayside NPDES permit effluent and receiving water limitations is protective of water quality and it is appropriate to use the requirements of the NPDES permit as a threshold of significance for effluent discharges from the SEWPCP. Using this threshold, the SEIR properly concluded that water quality impacts related to effluent discharges from the SEWPCP are less than significant as described in Impact HYD-6 (pp. 5.9-33 to 5.9-41).

(RTC at p. 13.21-19.)

My previous comment requested that the City support this assumption with evidence. The RTC fails to do so. Therefore, the Alliance has gathered that evidence, and it shows the City has a continuous, consistent, and pervasive pattern of violating its NPDES permits. Exhibit M, attached, details these

violations. Therefore, the SEIR's assumed basis for finding water quality impacts less than significant is false.

My July 24, 2015 comment letter regarding hydrology, water quality and biological impacts observed that the DSEIR's threshold of significance for the effect of untreated wastewater discharges to the Bay, which consists of limiting such discharges to 10 per year, ignores the quantity and duration of such discharges. The response stresses the work the City must do to prevent municipal wastewater from degrading water quality in the Bay, stating:

> As described in the permit, and on p. 5.9-20 of the SEIR, the SFPUC must implement the following nine minimum controls in accordance with the Combined Sewer Overflow Policy to reduce the frequency of combined sewer discharges and their effect on receiving water quality:
>
> 1. Conduct proper operation and regular maintenance programs for the combined sewer system and combined sewer discharge outfalls;
>
> 2. Maximize the use of the collection system for storage;
>
> 3. Review and modify pretreatment programs to minimize the effect of non-domestic discharges to the collection system;
>
> 4. Maximize flow to the SEWPCP and North Point Facility for treatment;
>
> 5. Prohibit combined sewer discharges during dry weather;
>
> 6. Control solids and floatable materials in combined sewer discharges;
>
> 7. Develop and implement a pollution prevention program focused on reducing the effect of combined sewer discharges on receiving waters;
>
> 8. Notify the public of combined sewer discharges; and
>
> 9. Monitor to effectively characterize combined sewer discharge effects and the efficacy of combined sewer discharge controls.
>
> These controls represent the best conventional and best available technology economically achievable as required under the Clean Water Act. The City is currently implementing these controls as required by the Combined Sewer Overflow Control Policy.

(RTC at p. 13.21-26.) This is all good and important work, but it is non-responsive to the Alliance's comment. The fact that these measures are the best the City can, or is legally required to do, is not relevant to whether the impact is significant. It may be relevant to whether further mitigation of the impact is feasible or effective, but these considerations cannot affect whether the impact is deemed significant.

The top two paragraphs on page 13.21-27 of the RTC assert that all waste water is treated.

This is beside the point that the City anticipates and is allowed by its NPDES permit up to 10 discharges per year of waste water subject to only primary, rather than secondary, treatment.

The RTC appears to reject the Alliance's comment that the SEIR ignores duration and quantity, not just frequency, of the 10 discharges per year on grounds the NPDES permit does not address the duration and quantity of these discharges. But the issue here is whether impacts on Bay water quality are significant. CEQA does not allow the use of the NPDES permit terms as an absolute proxy for that determination. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-7]*)

HYD-4 Changes in Effluent Quality

The respondent has simply laid out the statutory implications of failing to meet the terms of the NPDES permit. There is no evidence or guarantee that the terms will be met, and what steps would be needed to avoid the environmental impacts if they are not met. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-36]*)

Finally, I note that the vast majority of the volume of documents submitted for today's hearing consists of the documentary history of the City's violations of its NPDES permits (see Exhibit M). This submission reflects the fact that my July 24, 2015 comment letter regarding hydrology, water quality and biological impacts observed that the DSEIR's heavy reliance on City compliance with its NPDES permit to ensure the Project's combined stormwater and sewage impacts are less than significant is an unsupported assumption. My previous comment requested that the City support this assumption with evidence. The RTC fails to do so. Therefore, the Alliance gathered that evidence (contained in Exhibit M), and it shows the City has a continuous pattern of violating its NPDES permits. (*Mission Bay Alliance, Tom Lippe, email, November 3, 2015 [O-MBA21L8-2]*)

With respect to your finding that the EIR complies with CEQA, it turns out it doesn't for lots of reasons. One of those reasons has to do with the fact that the EIR took the position that compliance with the City's NPDES permit, which is a water-quality permit, would ensure no water-quality impacts of significance.

Well, I objected and said you have to prove that you comply. And the Response to Comments said, Well, we comply.

So, we got the Water Board enforcement files, which are five binders of ten years of noncompliance by the City. So, that simply is not a proper basis to find that there would be no significant effect on water quality. So, I'd like to give you those binders.

(Binders submitted to staff.)
There's also my comment letter on the EIR, which is in two binders, with Exhibits A through S. (Binders submitted to staff.) (*Thomas N. Lippe, Transcript, November 3, 2015 [PH2-Lippe-2]*)

Response to Late Comment HYD-1: NPDES Permit Compliance

The commenter reiterates issues previously submitted on the Draft SEIR regarding compliance with existing NPDES permits as adequate to protect water quality, which was addressed in Response HYD-4 (Section 13.21, pp. 13.21-18 to 13.21-21) of the RTC document. As part of this follow-up comment, the commenter has also submitted records of San Francisco NPDES permit violations. The following response provides additional explanation why the SEIR conclusion of less-than-significant water quality impacts is appropriate.

Combined Sewer Discharges

San Francisco's sewer system was constructed and is operated consistently with the U.S. Environmental Protection Agency (EPA) Combined Sewer Overflow (CSO) Policy, which is codified in the Clean Water Act and is implemented by the State Water Resources Control Board and the San Francisco Bay Regional Water Quality Control Board (RWQCB). The RWQCB, with EPA concurrence, issues a NPDES permit to San Francisco every five years that strictly regulates operations of the system and discharges to the Bay. [CK1]

The NPDES permit imposes numerous limitations and obligations. For wet weather operations, three elements are most significant: the nine minimum controls mentioned in the comment letter, the design criteria for construction and operation of the system (the "10

discharges"), and the obligation to maximize capture, storage and treatment of wet weather flows in the facilities that have been constructed in accordance with the design criteria.

The design criterion for the system in the vicinity of the project is a long term annual average of 10 combined sewer discharges (CSDs, but also referred to as combined sewer overflows or CSOs). The U.S. EPA and Congress, when promulgating the CSO Policy, understood that discharges are variable because rainfall is variable and unpredictable. Based on over 70 years of rainfall data, extensive hydraulics modeling, receiving water uses, and recreational and other use assessments, the U.S. EPA and the RWQCB determined that constructing and operating a system that reduced the discharge of combined sewage to a long term annual average of 10 discharges in this area was sufficient to protect the beneficial uses that water quality protection requirements are intended to protect.

As mentioned above, the design criteria of a long term annual average of 10 discharges is the applicable permit limitation, and is the culmination of extensive analysis of rainfall, discharge and beneficial use characteristics of the system. This analysis considered quantity, duration and volume of the discharges; frequency was chosen by the regulatory agencies to be the regulatory means for addressing such discharges, and is the basis for their determination that the system protects beneficial uses and water quality.

For the above reasons, and those presented in the RTC document, the comment that the Draft SEIR's threshold for significance ignores the quantity and duration of the combined discharges is incorrect.

Moreover, the small potential increase of CSD volume and duration in the Mariposa sub-basin due to the project is unlikely to cause a noticeable effect on water quality relative to overall conditions in the Central Basin of Lower San Francisco Bay, where the CSD structure for the Mariposa sub-basin discharges. First, the modeling performed by HCE demonstrates (see SEIR Appendix HYD) that under average conditions the increase in CSD volume due to the project would be only 0.29 million gallons (which represents a 5 percent increase over existing conditions at the Mariposa sub-basin); likewise, the potential average increase in duration would be only 0.1 more hours (which represents less than a 1 percent increase over existing conditions). Under cumulative conditions (i.e., build-out of the Plan area and implementation of UCSF Long Range Development Plan), the modeling indicated that the average increase in wastewater flows would not increase the number of CSD events in the Mariposa sub-basin, and that the total increase in CSD volume from all cumulative development, including the project, would be about 18 percent and the increase in duration would be about 6 percent. However, this estimated potential increase to volume would be temporary. Once the improvements planned for the Mariposa pump station (see Draft SEIR, Section 5.7, and RTC Section 13.17) have been completed, the project will not cause any increase in CSD volume. These improvements are scheduled to be fully implemented in the next three to six years. It is far more likely that the SFPUC would complete permanent improvements in advance of full projected build-out in the area and thus no increase in CSD volume would occur.

NPDES Permit Compliance

1. The City's compliance with its NPDES permits has no relationship to the evaluation of the project's potential water quality impacts.

The commenter misunderstands the relationship between the City's compliance with its NPDES permits and potential water quality impacts from this project. The Final SEIR concludes that the project wastewater flows will not impact water quality with respect to CSDs because the increase in CSDs attributable to the project will not result in CSDs that violate the City's NPDES permit conditions. NPDES permits must include all prohibitions, limitations and other provisions necessary to protect water quality. Compliance with a NPDES permit, therefore is the equivalent to protection of water quality. As explained in the SEIR, the proposed project will result in a small increase of dry weather sanitary flow to the Southeast Water Pollution Control Plant (SEP) and may – under rare, peak conditions – result in a small increase in the volume of CSDs. These increases will not result in a significant water quality impact because they will not cause the SFPUC to violate its NPDES permit. The project-related increases will not negatively affect treatment plant performance, result in an exceedance of permitted dry weather flow, or be inconsistent with the permit provisions regarding CSDs. Therefore, the project will not have a significant impact on water quality as it relates to these issues. Thus, it is reasonable for the Final SEIR to conclude that if the CSDs are allowable under the NPDES permit, then water quality will be protected. Whether and to what extent the SFPUC is in compliance with its NPDES permits is immaterial to whether the NPDES terms are protective of water quality.

2. The City's operation of its wastewater system has not resulted in NPDES permit violations that are continuous, consistent and pervasive.

To the extent that Appellant has submitted documentation of NPDES permit violations in the City's operation of its wastewater system, these violations are generally the result of treatment plant issues. Table 3 demonstrates that to the extent the Appellant identifies violations that have occurred at the SEP that could have an effect on water quality due to unpermitted plant discharges, these have been episodic and rare, rather than continuous, consistent and pervasive. Generally, the SEP treats, without incident, approximately 60 million gallons of sewage per day, and approximately 250 million gallons of combined sewage during rain storms. Additionally, the Clean Water Act and the state Water Code provide substantial remedies to ensure compliance. In each of the few instances on the list that concern discharge issues, the RWQCB has promptly pursued, and the City has promptly initiated, corrective measures to fix treatment plant issues that resulted in violations. At all times, the RWQCB has diligently prosecuted enforcement actions to secure compliance. The City has implemented all such corrections and is in compliance. The information submitted by Appellant supports the conclusion that the enforcement and compliance provisions of the Clean Water Act and the Water Code are effective. The historical record of the episodic permit violations supports the conclusion that the City operates its treatment system in compliance with permit requirements and experiences rare, episodic violations of permit terms.

TABLE 3
SFPUC RESPONSE TO COMMENTER'S SUMMARY OF SAN FRANCISCO NPDES PERMIT VIOLATIONS

Date of Violation in Table	Exhibit Description in Table	Exhibit Type	SFPUC Summary of Exhibit Contents
2/8/2014	Discharging un-dechlorinated treated water from southeast WPCP		Water was treated but undisinfected. Minimal to no water quality impacts.
2/8/2014	Discharging untreated wastewater		Water was treated and chlorinated, but not dechlorinated. Possible water quality impacts.
2/28/2014	Discharge of un-dechlorinated treated wastewater at discharge point No. 003 through No. 006		Water was treated and chlorinated, but not dechlorinated. Caused by power failure. Possible water quality impacts.
3/10/2014	Discharge primary treated wastewater at discharge point No.001		Water was 5% primary treated undisinfected effluent co-mingled with 95% fully treated and disinfected effluent. Minimal to no water quality impacts.
4/28/2014	Unauthorized discharge due to grease	5-Day Report	Small volume sanitary sewer overflow caused by grease build-up outside of SFPUC control. SFPUC took all appropriate corrective and preventative measures.
5/14/2014	Discharge secondary treated wastewater during dry weather to Islais creek discharge point.		Fully treated effluent discharged during dry weather through an outfall authorized only in wet weather. Minimal to no water quality impacts.
7/19/2014	Unauthorized discharge with a positive chlorine residual		Exceedance of chlorine residual effluent limit lasted approximately 21 minutes. Possible moderate water quality impacts.
10/17/2014	Coliform bacterial counts not calculated as required. 1 permit violation since the last inspection. Not sufficiently dechlorinating discharge water	SEP Inspection (10/2014)	The numeric effluent limitation violation is duplicative of 2/28/204 violation. Mischaracterized the calculation issue. The issue related to enterococcus, not coliforms. The method for calculating compliance with the enterococucs limits is complicated and not obvious from the permit provisions. The changes ultimately implemented did not affect compliance.
8/10/2004	Unauthorized dry weather discharge due to power outage, insecure back-up power source, refrigeration of effluent not right temp	SEP Inspection 2/2005)	Discharge referred to was fully treated and disinfected and due to power failure. Report otherwise notes that "Overall, the facility's self-monitoring program meets the intent of the NPDES permit; however, a major finding regarding influent and effluent sampling is noted below. The facility appeared to be well operated and properly maintained."
12/6-7/2014	Numerous deficiencies in CCSF's POTW pre-treatment program	Pretreatment inspection	Relatively minor deficiencies found. Report notes "Even though a number of deficiencies were noted as a result of the PCI, the overall finding of the inspection is that San Francisco has a strong and well-implemented pretreatment program."
11/17/2005	CCSF facility using incorrect BOD (biochemical oxygen demand) values in their reporting. Three prohibited dry weather discharges to Islais creek noted since last inspection.	SEP Inspection (11/2005)	Report notes "No permit limit exceedances were identified. The facility's record keeping was judged by the inspector to be excellent. At the time of the inspection the facility appeared well operated and properly maintained." BOD issue was limited to two month period, and didn't affect compliance with effluent limits. Three prohibited dry weather discharges were the ones identified in the 2/2005 inspection report and were all fully treated discharges to Islais due to power failures.

TABLE 3 (Continued)
SFPUC RESPONSE TO COMMENTER'S SUMMARY OF SAN FRANCISCO NPDES PERMIT VIOLATIONS

Date of Violation in Table	Exhibit Description in Table	Exhibit Type	SFPUC Summary of Exhibit Contents
8/9/2007	CCSF was not regulating SIU's and inspecting private companies before reissuing them a permit, not citing SIU's if they did violate their permit, many instances of non compliance	Pretreatment inspection	Description of violation is misleading. The deficiencies alleged were primarily administrative in nature: One renewal application from a medical center was not received before a permit was issued; the SIU permits do not specify self-monitoring frequency; one permit did not include a sampling location description; lab analysis sheets do not indicate analytical methods used; one facility (power plant) had not been inspected in the past year; one facility violated the lead categorical standard in 2007 but no enforcement action had yet been taken.
5/8/2008	Effluent exceedance of chlorine residual in the effluent reported since the last inspection.	SEP Inspection (5/2008)	The sole "major finding" was an 8/1/2007 exceedance of the chlorine residual limit (which is 0.0 mg/l Inst. Max.). This limit was not actually exceeded; an operator recorded the chlorine residual during hypochloride flushing of the final effluent sample line. There were no water quality impacts.
6/26/2008	PCI report conducted indicates in the cover letter that the CCSF was not compliant. Water board specifically asks CCSF for a response regarding how they "plan to achieve compliance".	Pretreatment inspection (2/2008)	Actual inspection report not included in exhibit; only cover letter. SFPUC response summarizes the deficiencies, which are largely minor, and identifies corrective actions.
7/11/2008	Discharge spill into Islais Creek as a result of PG&E power outage	5-Day Report	Discharge was fully treated and disinfected, lasted for only seven minutes, and was due to a PG&E power failure
9/11/2008	Fecal coliform concentration exceedance caused five permit violations	2008 Annual report	Only two, not five, violations occurred: 1 dry weather fecal coliform and 1 wet weather enterococcus. The enterococcus exceedance was very small (110 v. 104 MPN/100 mL limit)
12/16/2008	Bacterial concentrations in the effluent was higher than the permit allowed.	Regional Board Letter to SFPUC	References a single enterococcus violation; this is duplicative of the 9/11/2008 "violation"
1/15/2009	The southeast WPCP was not adequately recording and reporting their data to the Water Board. The plant also discharged effluent that exceeded the permits concentration of fecal coliform bacteria. Lab work was not performed adequately with permit standards.	SEP Inspection (1/2009)	Mainly administrative and record-keeping issues, to which the SFPUC responded. Bacteria violation alleged is duplicative of the 9/11/2008 "violation"
2/2/2009	PCI cover letter from 2009 indicates CCSF no compliance due to inadequately regulating SIU's – 18 out of 30 SIU's were not inspected at all by CCSF.	Pretreatment Report (2/2009)	Failure to inspect 18 of 30 SIUs was most serious deficiency identified in the report.
2/23/2009	High copper concentrations in the influent to southeast WPCP	Report from SFPUC to Regional Board	Mischaracterized and misunderstood the report. SEP did not experience high copper concentrations. The report was generated in response to a 13267 letter applicable to all POTWs in the Bay Area as part of the implementation program for site specific copper objectives. No violation.

TABLE 3 (Continued)
SFPUC RESPONSE TO COMMENTER'S SUMMARY OF SAN FRANCISCO NPDES PERMIT VIOLATIONS

Date of Violation in Table	Exhibit Description in Table	Exhibit Type	SFPUC Summary of Exhibit Contents
9/21/2009	Enterococcus bacterial concentration exceedance in the effluent at discharge point 002.	SEP Inspection (9/2009)	Identifies only one major finding: a single enterococcus violation. This is duplicative of the 9/11/2008 "violation"
2/26/2010	SIU's significant noncompliance on page 46 of 2009 AR. Summary of report also indicates 5 notices of violations against SUI's and 1 SUI with published noncompliance	SFPUC Pretreatment Annual Report (2009)	Not a violation. The SFPUC's pretreatment report is required by law to identify noncompliant SIUs, which it does.
10/13/2010	CCSF not correctly reporting all overflow events or reporting them at all, not maintaining overflow structures as required by their permit and not keeping-up with general plant maintenance, not removing solids and floating materials prior to discharge	SEP Inspection Report (10/2010)	Mischaracterized the findings of the inspection. Regarding overflow events, there was no finding that they are not being correctly reported; no reporting of overflows that do not reach surface waters was required ("Regional Water Board Order No. R2-2008-0007 does not require the City to report overflows". Regarding the failure to remove solids and materials prior to a CSD discharge; the report only identifies 3 of 29 CSD structures with grease and debris accumulation. These issues have been addressed as described in the SFPUC's response (Exhibit 38).
12/14/2011	The effluent from southeast WPCP did not pass the fish/organism test of 90 percent or more survival	SEP Inspection Report (12/2011)	The SFPUC did violate acute toxicity effluent limits during the period mentioned. Subsequent investigations were inconclusive, as is often the case with acute toxicity, but indicated that the observed toxicity in the test was likely the result of either an artifact of the test method, or the influence of constituents rendered harmless upon discharge (ammonia and carbon dioxide).
11/16/2012	Enterococcus violation	SEP Inspection Report (5/2014)	Single wet weather enterococcus violation.
12/8/2012	Ten counts of Enterococcus bacterial concentration exceedances in the effluent at southeast WPCP between 2008-2012	Acceptance of Conditional Resolution	Prior to the issuance of the 2013 permit, the Regional Board issued Mandatory Minimum Penalties totaling $6,000 for 10 enterococcus violations, a number of which were during wet weather. One of the nine violations identified is duplicative of the 9/11/2008 "violation"

SOURCE: SFPUC, 2015.

As part of the comments submitted, the commenter identified a total of 26 "violations" that allegedly occurred between 2004 and 2014 in the Bayside sewershed, within which the project is located. The City's wastewater collection and treatment system is in continuous operation (i.e., 365 days a year, 24 hours a day). Deeming 26 instances of non-compliance over ten years as "continuous, consistent and pervasive" is a gross mischaracterization. Table 3 responds to each of the 26 incidents identified by the commenter.

In addition, the commenter also submitted asserted NPDES permit "violations" at the Oceanside Water Pollution Control Plant between 2004 and 2014. This plant is located on the west side of the City, and operation of this treatment plant is not related to a project located in Mission Bay. This information is immaterial to the proposed project.

The commenter provides his own summary list of asserted NPDES permit violations to support his claim regarding the pervasive nature of the SFPUC's violations. The description of the events listed in that summary table are duplicative and, in many instances, inaccurate. For example:

- The summary table lists violations of bacteria effluent limitations as occurring on 9/11/2008, 12/16/2008, 1/15/2009, and 9/21/2009. Cumulatively, these four entries in the summary table refer to only two violations: a single exceedance of a fecal coliform limit on 9/11/2008 and a single exceedance of a wet weather enterococcus limit on 12/16/2008. Similarly, the summary table lists violations as occurring on 2/28/2014 and 10/17/2014, but these refer to the same event. Thus 6 supposed violations actually concern 3 events.

- Many of the exhibits provided as evidence of the assertions in the summary table are annual pre-treatment program inspection reports that do not typically constitute NPDES permit violations, but instead identify areas for improvement or point out positive aspects of the program. For example, two of the pretreatment inspection reports cited in the commenter's exhibit (Exhibits 16 and 18) as the basis for violations included findings that "San Francisco has a strong and well-implemented program" and "the facility appeared well operated and properly maintained."

- Many of the exhibits provided as evidence of permit violations are annual SEP inspection reports, which the commenter misinterprets in his summary table. For example, the 10/13/2010 incident description in the summary table states that "CCSF not correctly reporting all overflow events," but the SEP 2010 inspection report listed as an exhibit (Exhibit 37) notes that CCSF is not required to report those overflow events (excursions). The 2/23/2009 incident description in the summary table states "High copper concentrations in the influent to southeast WPCP," but instead of documenting a violation, the exhibit (Exhibit 34) provided is a report required of all Bay area treatment plants in 2009 as part of the implementation program for recently-adopted site specific water quality standards for copper.

3. Very few of the City's NPDES permit violations resulted in water quality impacts.

The City has been diligent in identifying and self-reporting the relatively few instances in which NPDES permit provisions have been violated. The majority of these violations have

little or no effect on water quality. This is apparent in Table 3 prepared by the SFPUC, which summarizes the contents and findings of the exhibits listed in the commenter's summary table.

Issues Raised by Late Commenters on Tsunami Risk

This response addresses all or part of the following comments, which are quoted below:

O-MBA16S6-13

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8. HYD-8 page 13.21-40, states "The Initial Study did not specifically identify the expected tsunami inundation elevation at the project site. However, subsequent to publication of the SEIR, a more detailed analysis of tsunami risks at the project site has been conducted to determine the maximum inundation elevation associated with a tsunami run-up of 5.9 feet (based on analysis of existing Bay Area tsunami studies). This detailed site-specific analysis indicates that the maximum inundation elevation for the tsunami hazard area in the project vicinity would be -0.3 feet SFD (11.2 feet NAVD88)". Our review of the referenced site-specific analysis[1] indicates that a site specific Tsunami Hazard Analysis was not performed for the project site. The run-up values presented in the ESA summary of Existing Tsunami Hazard Mapping data was based on a 2006 report that was performed for Marine Oil Terminals in San Francisco Bay. The 2006 report is appropriate for a regional analysis, but it is not a site-specific analysis for the project site. The Maximum Tsunami Inundation elevation of 11.2 feet presented in the August 18, 2015 ESA memorandum appears to over-reaching the intent and the accuracy of data obtained from an analysis performed for another site.
9. HYD-8 page 13.21-41 states "Regarding the consideration of sea level rise and extreme tides in estimates of tsunami risks, the detailed analysis described above determined the maximum inundation elevation by adding the maximum tsunami wave height of 5.9 feet to the mean high water (MHW) tidal datum of 5.29 feet NAVD88. The MHW is calculated as the average of all high water heights observed over the National Tidal Datum Epoch. This is consistent with the state mapping. To calculate tsunami inundation elevations associated with extreme high tides and sea level rise as suggested by the comments would be speculative". California Governor's Executive Order 5-13-08,which was issued on November 14, 2008 set policy with respect to sea level rise such that sea level rise should be incorporated into inundation analysis for planning, and accounting for sea level rise is not only not speculative, but was used for the project's own 100-year storm analysis that incorporated sea level rise through 2100 (Impact HY-7 of the SEIR, pp. 5.9-41 through 5.9-44)
10. HYD-8 page 13.21-41 "The comment also suggests a different methodology should have been used to analyze tsunami risk. The commenter's disagreement over the methodology used in the SEIR is noted. Under the "substantial evidence" standard, such disagreement does not mean the methodology used in the SEIR is inadequate or that addition analysis is required." There does not appear to be disagreement that the use of the out-dated Tsunami Hazard analysis in the 1998 EIR is not appropriate for the current project. This is clearly evident with Lead Agency's submittal of the August 18, 2015 memorandum as a new "detailed site-specific analysis".

Footnote:

[1] Environmental Science Associates. Summary of Existing Tsunami Hazard Mapping in the Vicinity of the Proposed Golden State Warriors Mission Bay Project and Refined Limits of Maximum Anticipated Hazard. August 18, 2015

(*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-13]*)

Response to Late Comment HYD-2: Tsunami Risk

The comment contends that the tsunami inundation mapping used in the assessment of tsunami inundation provided in Response HYD-8 of the RTC document is appropriate for a regional analysis, but not a site-specific analysis of tsunami impacts for the project site. In addition, the commenter indicates the analysis should consider sea level rise, consistent with the Governor's Executive Order S-13-08. The commenter states that the analysis of tsunami risks in the 1998 Mission Bay FSEIR is outdated as confirmed by OCII's submittal of a new analysis provided in the Responses to Comments document.

Assessment of Tsunami Inundation Mapping

Per the assessment presented in Response HYD-8 in the RTC document, the summary of tsunami inundation mapping was based on existing studies. The assessment stated that the previous analysis included a conservatively high estimate of potential tsunami inundation, and included a factor of safety. The elevation selected for assessing the tsunami inundation is based on emergency planning mapping completed by the State of California, which is based on previous study by Borrero et al. (2006), and is considered the worst-case, or maximum credible, tsunami that would propagate through San Francisco Bay. The assessment discussed in RTC Response HYD-8 was performed to more precisely estimate where the inundation limits extended based on the extreme event. This was a site-specific mapping without any recalculating of tsunami dynamics.

Consideration of Sea Level Rise and Extreme Tides

Consistent with the analysis of sea level rise provided in Impact HY-7 of the SEIR (pp. 5.9-41 through 5.9-44), Executive Order S-13-08 requires that state agencies that are planning construction projects consider and plan for sea level rise projections for the years 2050 and 2100 in conjunction with predicted higher high water levels as well as storm surge and storm wave data. This analysis is appropriate for evaluation of sea level rise because not only will sea level rise result in permanent increases in sea level which must be addressed in planning, but periodic temporary increases in water levels could also occur as a result of storm surge and wave action and could result in temporary flooding.

The analysis of the maximum tsunami inundation elevation provided in RTC Response HYD-8 considers the elevation of the estimated tsunami runup in addition to the mean high water elevation, defined as the average of all the high water heights observed over the National Tidal Datum Epoch. This is consistent with State mapping published by the California Geological Survey.[7] The physical dynamics of tsunami propagation in the future with sea level rise is not fully understood for San Francisco Bay, and no maps exist depicting the future tsunami inundation with sea level rise. Therefore, it would be speculative to analyze tsunami inundation in conjunction with future sea level rise. Nevertheless, as discussed in RTC Response HYD-8, the proposed structures would be constructed to

[7] California Emergency Management Agency, California Geological Survey, University of Southern California. Tsunami Inundation Map for Emergency Planning, San Francisco North Quadrangle/ San Francisco South Quadrangle (SF Bay). June 15, 2009.

withstand flooding due to a 100-year storm in combination with sea level rise through 2100, which would be expected at an elevation almost two feet higher than the calculated maximum tsunami inundation elevation. Therefore, no structural damage or flooding damage would occur. Further, as discussed in the RTC and Initial Study, public safety would be protected in the event of a tsunami through the City's existing Emergency Response Plan.

Assessment of Tsunami Risks

The comment states that the analysis of tsunami risks in the 1998 Mission Bay FSEIR is outdated. The Draft SEIR does not rely on that analysis. Rather, an updated assessment was provided in Impact HY-5 of the Initial Study (pp. 103 through 105). This assessment was supplemented by information provided in RTC Response HYD-8 (see Section 13.21.9). RTC Response HYD-8 does not constitute new information, rather it provides clarification regarding why the assessment provided in Impact HY-5 adequately addresses tsunami risks.

Issues Raised by Late Commenters on Water Quality of Stormwater Runoff

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-33 O-MBA20L7-47

The Response fail to address the potential for transport of PCB-contaminated sediment to San Francisco Bay. The FSEIR should not be certified until best management practices that are specific to the prevention of PCB transport in stormwater are included as mitigation.

PCB-Specific BMPs Need to be Identified
Our comments noted the detection of PCB in soil at the Project site and the need to implement measures during soil-disturbing construction activities to prevent the transport of contamination to San Francisco Bay via stormwater. Response HYD-2 simply states that stormwater BMPs for PCBs must be consistent with best available technology economically achievable to meet requirements of the California Construction General Permit (p. 13.21-12). However, the Response does not specify BMPs that would meet this requirement. It is key that certification of the FSEIR is upheld until BMPs specific to preventing the spread of PCB contamination are identified.

The San Francisco Bay PCB total maximum daily loads (TMDL) established by the San Francisco Bay Regional Water Quality Control Board (Water Board) call for stormwater agencies, including the City and County of San Francisco, to achieve wasteload allocations by 2030 for PCBs. The allocations are implemented through NPDES permits issued to Bay Area municipalities which are based on the premise that BMPs will reduce PCBs in stormwater runoff to the maximum extent practicable.

Because PCBs have been detected in Project site soils, and because the Project is located so close to the Bay, we commented on the need to better assess PCBs in soil that would have resulted from past land use. The Response makes no provisions for conducting that assessment and instead relies solely on the idea that unidentified BMPs will suffice in reducing PCB-contaminated stormwater runoff. This is not good enough, especially with the understanding that PCB contamination in San Francisco Bay is a growing concern. In fact, San Jose recently sued Monsanto Corporation over liabilities for cleanup of PCB-contaminated stormwater that flows into the South Bay. A similar lawsuit was brought against Monsanto recently by the City of San Diego.[1]

As mitigation, the FSEIR should include the results of a full evaluation of PCB contamination in Project site soils. Soil sampling should be included as part of the evaluation to target areas where PCBs may have been released or spilled. The study should be conducted under the oversight of the San Francisco Bay Regional Water Quality Control Board to ensure investigation procedures are adequate in assessing PCB contamination at the Project site.

The FSEIR should also identify BMPs that will be effective in reducing PCB loading to the San Francisco Bay. The following measures have been identified in a "toolbox" by the San Francisco Estuary Institute as BMPs that would be effective in reducing loading of PCBs to the Bay.

- Source control BMPs:
    - Use of street sweeping to control sediment accumulation.
- Treatment control BMPs:
    - Use of infiltration trenches and basins to prevent or reduce stormwater runoff;
    - Use of swales, buffer strips, and bioretention to slow flow and increase sediment deposition; and
    - Using media filters, inlet inserts, hydrodynamic separators to trap sediment.

The FSEIR should reference this toolbox and should identify how these specific BMPs will be deployed and maintained. To ensure implementation of PCB-specific BMPs, the FSEIR should include language that would require the preparation of semi-annual reports to the City of San Francisco that would document the deployment and the maintenance of the BMPs.

Footnote:

[1] https://en.wikipedia.org/wiki/Monsanto_legal_cases

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-33]*)

Stormwater Mitigation

The biological effects of stormwater on the environment are not properly analyzed. The offered responses to comments regarding stormwater mitigation are particularly ironic given that the site has demonstrably failed to maintain its Best Management Practices (BMPs) and has visible waste material literally clogging its stormwater drains. (See BSK comments.) The concept that simply stating that a BMP will work, without analyzing the nature of the impacts, and without maintaining those BMPs calls into question every part of the DSEIR that relates to sediment, toxins and wildlife exposures. For illustration, the BMPs at the site currently are not properly maintained and have been filled in or partly filled in with sediment, or breached completely. However, even if these sediment BMPs had been installed correctly and maintained, they do nothing for dissolved-fraction toxic chemicals. The project fails to implement the sediment BMPs correctly and does not even offer readily implementable BMPs for dissolved-fraction chemicals found at the site.[4, 5, 6, 7] Yet, the Response states unequivocally, "Any potential effects associated with contaminated stormwater runoff into San Francisco Bay would be avoided during construction through compliance with the Construction General Permit and implementation of a Stormwater Pollution Prevention Plan (SWPPP) as described in the Section 13.21, Response HYD-2." (p. 13.19-22) The SWPPP is solely intended to manage ordinary construction sediment and has no specific intent to manage hazardous waste, and in any case does nothing for dissolved hazardous chemicals.

Footnotes:

[4] http://water.epa.gov/polwaste/npdes/swbmp/index.cfm
[5] http://water.epa.gov/scitech/wastetech/guide/stormwater/upload/2006_10_31_guide_stormwater_usw_b.pdf
[6] http://water.epa.gov/scitech/wastetech/upload/2002_06_28_mtb_wetdtnpn.pdf
[7] http://water.epa.gov/polwaste/npdes/stormwater/upload/nrc_stormwaterreport.pdf

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-47]*)

Response to Late Comment HYD-3: Water Quality of Stormwater Runoff

One comment contends that Response HYD-2 of the RTC document fails to address the potential for transport of polychlorinated biphenyl (PCB)- contaminated sediment to San Francisco Bay. The comment also asserts that the presence of PCBs in the soil should be better assessed and PCB-specific best management practices (BMPs) must be included as mitigation. Another comment contends that the biological effects of stormwater runoff on the environment are not properly analyzed, and reliance on BMPs is not sufficient, particularly given that BMPs currently at the site are not properly maintained.

PCBs in Stormwater Runoff

As discussed in Responses HYD-2 and HAZ-3 of the RTC document (Sections 13.21.3 and 13.22.4) the project sponsor completed a Phase II Environmental Site Assessment (Phase II ESA) in 2015 that evaluated soil quality at the project site.[8] The Phase II ESA included installation of borings and collection of soil samples from throughout the site (including areas that have been excavated and backfilled plus areas outside of previous excavation limits) to provide an overall characterization of soil that would be excavated for the evaluation of health and safety, dust mitigation, and soil disposal requirements. The PCB Aroclor 1254 was detected in only one of the seven soil samples analyzed for PCBs; the concentration was 0.016 milligrams per kilogram (mg/kg). All other PCBs were not present above laboratory detection limits. This indicates that the presence of PCBs is not widespread throughout the project site. The presence of localized areas of higher PCB concentrations is unlikely because contaminants potentially resulting from demolition of many of the previous buildings and potential PCB-containing equipment at the site have likely been removed as part of previous site remediation, or at least would not be present in their original location because of previous soil excavation and backfilling activities. Therefore, more comprehensive sampling for PCBs is not warranted.

Further, as also described in Response HYD-1 of the RTC document (Section 13.22.3), none of the site soil or chemicals identified in the site soil would be transported offsite via stormwater runoff during construction because, as discussed in Impact HY-1 of the Initial Study (pp. 99 and 100), the construction contractor would implement the requirements of the State Water Resources Control Board (SWRCB) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ (Construction General Stormwater Permit)[9] as specified in the 1999 Mission Bay Risk Management Plan.

Accordingly, the project must implement BMPs to prevent the transport of sediment to the Bay, including structural controls to prevent the offsite transport of sediment and other stormwater pollutants and ensure that construction-related discharges of stormwater do not

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[8] Langan Treadwell Rollo, Phase II Environmental Site Assessment, Golden State Warriors Arena, Blocks 29-32, Mission Bay, San Francisco, California. June 2015.

[9] State Water Resources Control Board, National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities. Order No. 2009-0009-DWQ. NPDES No. CAS000002. Effective July 1, 2010.

cause an exceedance of receiving water limitations, including limitations for turbidity. Under the Construction General Stormwater Permit, the project sponsor would be required to implement stabilization measures such as covering disturbed areas with mulch, temporary seeding, applying soil stabilizers, applying soil binders, and using fiber rolls or blankets to control erosion. In addition, the Construction General Stormwater Permit would require implementation of sediment control measures such as perimeter silt fences or straw wattles along with stabilization of construction site entrances to capture any soil that becomes eroded.

The comment states that the San Francisco Bay Estuary Institute has identified the following BMPs that would be effective in reducing PCB loads discharged to the Bay:

Source control BMPs:

- Use of street sweeping to control sediment accumulation.

Treatment control BMPs:

- Using infiltration trenches and basins to prevent or reduce stormwater runoff;
- Using swales, buffer strips, and bioretention to slow flow and increase sediment deposition; and
- Using media filters, inlet inserts, hydrodynamic separators to trap sediment.

Note, that as described in Response HAZ-3 of the RTC document (Section 13.22.4), the contractor would be required to conduct regular street sweeping under the conditionally approved Dust Monitoring Plan for the project.[10]

Regarding the use of the specified treatment control BMPs, the construction contractor would be responsible for preparation of the Stormwater Pollution Prevention Plan (SWPPP) under the Construction General Stormwater Permit, and would have some discretion in how to achieve the erosion and sediment control requirements of the permit. However, the specified BMPs would need to ensure compliance with these narrative effluent standards of the Construction General Permit:

- Storm water discharges and authorized non-storm water discharges regulated by the general permit shall not contain a hazardous substance equal to or in excess of reportable quantities established in Title 40 of the Code of Federal Regulations, Sections 117.3 and 302.4, unless a separate National Pollutant Discharge Elimination System (NPDES) permit has been issued to regulate those discharges.

- Dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of controls, structures, and management practices that achieve Best Available Technology for toxic and non-conventional pollutants and Best Conventional Technology for conventional pollutants.

[10] Langan Treadwell Rollo. Revised Dust Monitoring Plan, Golden State Warriors Arena, Blocks 29 through 32, Mission Bay, California. October 2, 2015.

If use of the treatment control measures identified by the comment is necessary to achieve the effluent standards of the Construction General Stormwater Permit, they would be included in the construction contractor's SWPPP prepared in accordance with the Construction General Stormwater Permit. Compliance with the SWPPP and the performance of the specified BMPs would be documented through regular inspections of the site throughout construction as well as post-storm inspections to (1) identify whether BMPs were adequately designed, implemented, and effective, and (2) identify any additional BMPs or corrective actions necessary. The inspections would be conducted by a qualified professional. The required Annual Report would document compliance with the Construction General Stormwater Permit and would identify any compliance issues and corrective actions taken. Regular reporting to the CCSF as suggested by the comment is not necessary to ensure compliance with the General Construction Stormwater Permit or the deployment or performance of the selected BMPs.

Biological Effects of Stormwater Runoff

The commenter's statement that BMPs currently at the site are not accurately maintained is in no way applicable to the proposed project. As discussed in the SEIR Project Description (Chapter 3, p. 3-10), the project site currently operates as a surface parking lot, and the project sponsor has no involvement in these operations. Existing site conditions are not an impact of the proposed project. In fact, the quality of stormwater runoff from the project site would be improved under the proposed project because, as described above, construction activities proposed by the project sponsor would be required comply with the requirements of the Construction General Stormwater Permit as specified in the 1999 RMP. Accordingly, the project must implement a set of BMPs to prevent the transport of sediment to the Bay, including structural controls to prevent the offsite transport of sediment and other stormwater pollutants and ensure that construction-related discharges of stormwater do not cause an exceedance of receiving water limitations. PCBs and other contaminants at the site generally bind to soil particles and would be transported via sedimentation rather than as a dissolved components of the stormwater. Therefore, the sediment and erosion control requirements of the Construction General Stormwater Permit are sufficient to control the off-site transport of contaminants in stormwater runoff from the project site during construction. The commenter's statement that "The project fails to implement sediment BMPs correctly" fails because the project has not yet been implemented and the current condition of the site in no way reflects how the project sponsor will implement BMPs during project construction. As stated above, the project sponsor has no involvement in the existing parking operations at the site and existing conditions are not an impact of the proposed project.

As stated in Response HYD-2 of the RTC document (Section 13.22.3), there would be no threat to Bay water quality or biota, including steelhead habitat, as a result of stormwater runoff during construction because of implementation of the requirements of the General Construction Stormwater Permit discussed in Response HYD-2 and above. Adequate performance of the specified BMPs would be documented through regular inspections of the site throughout construction as well as post-storm inspections to (1) identify whether BMPs were adequately designed, implemented, and effective, and (2) identify any additional

BMPs or corrective actions necessary. The inspections would be conducted by a qualified professional.

Issues Raised by Late Commenters on Water Quality, Interim Wastewater System Improvements

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-35

HYD-3 Water Quality – Waste Water System Improvements

The Response acknowledges that building schedules for other projects such as UCSF – Phase 2 Medical Center may result in wastewater system tolerance exceedances.

The commenter writes that:

"While the system can currently accommodate project-related wastewater flows as discussed in Impact UT-5, the capacity of the Mariposa Sanitary Pump Station could be exceeded as future projects are implemented, including UCSF's Phase 2 Medical Center."

The respondent then acknowledges several assumptions outlined below.

- SFPUC will implement permanent pump station, etc. "as soon as feasible"
- Schedule for improvement is currently unknown
- Completion (of improvements) could occur aft the proposed project is operation

"It is assumed that the SFPUC will implement the permanent pump station and associated force main and conveyance piping improvements at the Mariposa Pump Station as soon as feasible, but the schedule for these improvements is currently unknown and completion could occur after the proposed project is constructed and operational. "

Again, the Response assumes SFPUC would make necessary operational and piping changes to accommodate additional flows in the interim in order to remain in compliance with RWQCB permits. The respondent further states that system approvals by the RWQCB would ensure that water quality of the Bay would be protected. This appears to be an unmitigated project impact.

"In the event that additional future wastewater flows would exceed the pump station capacities before the needed wastewater system improvements could be completed, it is assumed that the SFPUC would make internal operational or piping changes to accommodate the additional flows in the interim in order to remain in compliance with RWQCB permit requirements. The interim system modifications would be subject to the approval of the RWQCB under the terms of the Bayside NPDES permit. Approval by the RWQCB would ensure that water quality of the Bay would be protected during the interim period. "

The Response concludes that interim modifications are operation or internal and would therefore not result in any physical environmental effects.

"Any interim system modifications are assumed to be operational or internal to the existing pump stations and therefore would not result in any physical environmental effects."

The response defers water quality issues by saying this assessment was addressed in different sections of the DSEIR, however, acknowledged potential for wastewater systems capacity exceedance is by definition a water quality issue and a CEQA Utilities impact. The response even

acknowledges this by presenting the SFPUC interim contingency plans outlining the wastewater re-routing system. If this plan proves insufficient as the result of system loading, etc., what happens to excess wastewater the system is not designed to handle? Either there will be upset conditions which will cause environmental impacts associated with sewage or there will be upgrades to the water treatment system(s) which have undisclosed environmental effects and no clear funding. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-35]*)

Response to Late Comment HYD-4: Water Quality, Interim Wastewater System Improvements

The comment addresses the same issues that were covered in Response HYD-3 of the RTC document (Section 13.21.4), which discusses the potential for water quality affects to occur if cumulative wastewater flows exceed the 3.5 million gallon per day (mgd) capacity of the Mariposa Pump Station before the San Francisco Public Utilities Commission (SFPUC) completes long-term and permanent improvements to the pump station and associated facilities. The commenter contends that because the analysis relies on compliance with the National Pollutant Discharge Elimination System (NPDES) permit for the Southeast Water Pollution Control Plant (SEWPCP), the North Point Wet Weather Facility, and the Bayside wet-weather facilities (referred to as the Bayside NPDES Permit) and oversight by the Regional Water Quality Control Board (RWQCB), potential water quality impacts are unmitigated. The comment also questions what will happen if the proposed operational changes do not provide enough capacity to accommodate the cumulative flows. As discussed below, the cumulative wastewater flows to the Mariposa Pump Station would not result in water quality effects, even if flows temporarily exceed the existing 3.5 mgd capacity of the pump station because 1) it is not likely that the flows would actually exceed the pump station capacity and 2) the SFPUC has the capacity to implement temporary operational changes to convey flows to the SEWPCP in the unlikely event that the capacity of the pump station is exceeded.

Estimates of Wastewater Flows

Wastewater flows considered in the cumulative impact analysis on wastewater infrastructure presented in Impact C-UT-2 of the SEIR (pp. 5.9-13 through 5.9-17) include peak existing wastewater flows plus the estimated peak flows from the proposed project plus the estimated peak flows from the reasonably foreseeable future projects in the drainage basin of the Mariposa Pump Station – a total peak flow of 4.8 mgd. This provides a conservatively high estimate of potential wastewater flows to the pump station, and represents a combination of events that would not likely occur concurrently. For one thing, the peak flow estimate for the project assumes that peak flows from all office, commercial, restaurant, and event center uses would occur at one time. This is an unlikely event, because peak use of the event center for basketball games or concerts would typically occur during the evenings or weekend, and not at the same time as peak office use hours. It is even more unlikely that the project's total peak flow would occur concurrently with the peak flows from other projects in the drainage basin. Further, peak flows, by definition, only occur for short periods of time, and the total cumulative peak flow would not occur over an extended time period. As summarized in the Technical Memorandum provided in Appendix HYD of

the SEIR,[11] the average wastewater flow from all cumulative projects within the drainage basin would be less than 1.7 mgd, which is far below the 3.5 mgd capacity of the Mariposa Pump Station.

Operational Changes

The SFPUC has indicated that in the unlikely event that cumulative future wastewater flows would exceed the existing 3.5 mgd capacity of the Mariposa Pump Station before permanent conveyance improvements are constructed, it would implement temporary operational changes in order provide capacity for the additional flows (see Impact C-UT-2 of the SEIR and Response UTIL-6 of the RTC document, Section 3.17-7). These temporary operational changes could include:

- Routing of dry weather flows to existing wet weather transport/storage boxes to temporarily store select peak flows until flows can be pumped to the SEWPCP, as consistent with the Bayside NPDES permit requirements.

- Reducing flows within the Mission Bay basin by modifying sewers/sewer connections to allow temporary redirection of some flows to other basins, as feasible, including potential increased routing of flows from the proposed event center (or other Mission Bay facilities) to Mission Bay Sanitary Pump Station or Channel Pump Station, as appropriate.

The modifications described above would be implemented by SFPUC through operational or internal modifications to the existing pump stations and would therefore not result in any physical environmental effects from construction activities.

Implementation of these operational changes would ensure that all of the cumulative wastewater flows would be conveyed to and treated at the SEWPCP in accordance with the Bayside NPDES Permit as discussed in Impact HY-6 of the SEIR (pp. 5.9-33 and 5.9-34) and Response HYD-3 of the RTC document (Section 13.21.4). The Bayside NPDES Permit requires that the combined sewer system and SEWPCP are operated in a manner that would not result in unauthorized discharges that could adversely affect Bay water quality and that authorized discharges comply with specified effluent and receiving water effluent requirements. The NPDES permit (pp. 16 and 17) also includes collection system management requirements that require the combined sewer system to be operated in a manner that does not result in a release of untreated or partially treated wastewater. Compliance with these requirements would ensure that no discharges of untreated sewage occur, and implementation of the operational changes would ensure that adverse water quality effects would not occur. Further, changes in flow conditions that could affect collection system management, such as upgrades to the Mariposa Pump Station, are subject to oversight by the RWQCB as the NPDES permitting agency.

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[11] Hydroconsult Engineers, Combined Sewer Impacts Analysis, Golden State Warriors Arena EIR. February 25, 2015.

Issues Raised by Late Commenters on Water Quality Regulatory Framework

This response addresses all or part of the following comments, which are quoted below:

O-MBA20L7-43

The DSEIR analysis, at a minimum, should have been fully developed to acknowledge the Clean Water Act (CWA) and Porter-Cologne (and other regulatory requirements), as well as the numerous state and federal wetland policies and regulations that apply to this site.

(*Mission Bay Alliance, Thomas N. Lippe, letter, November 2, 2015 [O-MBA20L7-43]*)

Response to Late Comment HYD-5: on Water Quality Regulatory Framework

The commenter is mistaken that the SEIR does not acknowledge the Clean Water Act, Porter Cologne Water Quality Control Act, or other relevant regulatory requirements. Each section of the Draft SEIR includes a section on Regulatory Framework. The Clean Water Act is described on p. 5.19-9 of the SEIR in Section 5.9.4.1, Federal Regulations. The Porter Cologne Water Quality Control Act is discussed on p. 5.9-21 of the SEIR in Section 5.9.4.2, State Regulations.

SECTION 18: RESPONSES TO LATE COMMENTS ON HAZARDOUS MATERIALS

The comments and corresponding responses in this section cover topics analyzed in the Initial Study, Section E.16, Hazards and Hazardous Materials, which is included in Appendix NOP-IS of the SEIR, as augmented in RTC document Section 13.22. These include topics related to:

- Issue HAZ-1: Assessment of Hazardous Materials Impacts
- Issue HAZ-2: Naturally-occurring Asbestos

Issues Raised by Late Commenters on Environmental Screening Levels

This response addresses all or part of the following comments, which are quoted below:

O-MBA15S5-1 O-MBA16S6-8

As described in the July 26, 2015, comment letter submitted by this office regarding the DSEIR ("SM Law Comments"), hazards and hazardous materials associated with the Project site are inadequately analyzed in the 1998 Supplemental Environmental Impact Report prepared for the Mission Bay Redevelopment Plan ("1998 SEIR"). (See SM Law Comments, pp. 7-13 and BSK HazMat report, attached as Exhibit B to SM Law Comments.) In reliance on this flawed and outdated analysis, the DSEIR contains no analysis whatsoever of hazards. In addition, the 1999 Risk Management Plan, and the 2006 Revised Risk Management Plan for the site, referenced in the Initial Study prepared for the Project, also rely on outdated methodologies for identifying human health risks associated with exposure to hazards that could occur during construction and operation of the Project.

In order to demonstrate the inapplicability and ineffectiveness of the screening levels relied upon for the Project, the attached report prepared by Damian Applied Toxicology, LLC: (1) provides updated screening levels for the constituents at the site; (2) provides newly applicable screening levels that did not exist at the time of the 1998 EIR; (3) compares the new and old screening levels; and (4) compares the updated screening levels to the most recent site investigation data from the Project site. The Damian Report shows that the prior screening levels are completely outdated and do not protect public health. Using updated screening levels that address a wide range of relevant potential receptors and exposure pathways, the Damian Report concludes that 19 chemicals (18 in soil and 1 in groundwater) that were detected in the 2015 Phase II investigation at the site exceed at least one screening level. Indeed, in some instances, sampled soil exceeded screening levels by more than 10 times.

As the DSEIR completely fails to address these potentially significant hazards and hazardous materials impacts, it must be revised and re-circulated for public review prior to any action being taken on the Project. Thank you for considering these supplemental comments. Please feel free to contact my office with any questions.

DAMIANAPPLIEDTOXICOLOGY, LLC

Your office requested that **Damian Applied Toxicology, LLC (DAT)** develop updated soil and groundwater screening levels for the Golden State Warriors Arena Construction Project and compare those values to both the previous screening levels and site investigation data presented in the Phase II Environmental Site Assessment (Phase II) (Langan Treadwell and Rollo [LTR], 2015).

Screening levels are levels of a chemical in environmental media, for example soil or groundwater, which are considered safe for long-term exposure. Screening levels are developed based on the environmental media of interest, the exposed population of interest (e.g. residents or commercial workers), and the relevant exposure pathway (e.g. drinking water for groundwater or dermal contact

with soil). Screening levels may be developed to protect human health or ecological receptors (e.g. aquatic and terrestrial wildlife). In most cases, regulatory agencies have already developed screening levels for certain chemicals in soil or water. However, in some cases (e.g. construction workers) no such screening levels have been developed and a risk assessor must develop new screening levels using scientifically-defensible methods and assumptions. Typically, such methods and assumptions are obtained from the United States Environmental Protection Agency (USEPA), the state agency responsible for review of health risk assessments, or a combination of the two.

The previous screening levels were originally presented in the *Risk Management Plan, Mission Bay Area, San Francisco, California* (RMP) (ENVIRON, 1999), and were referenced without revision in the *Revised Risk Management Plan* (BBL, 2006). Risk-based screening levels change fairly rapidly over time due to new developments in the toxicological science underlying such levels, as well as state and federal risk assessment policy changes. In addition, in most cases, screening levels become more stringent over time, not less so. Thus, in the 16 years since the 1999 RMP was prepared many of the originally proposed screening levels have become obsolete and are no longer adequately protective. Finally, the original screening levels did not address construction workers, exposure of indoor workers to volatile chemicals via vapor intrusion, or ecological risks. The purposes of this report therefore, are: 1) to update the 1999 screening levels, 2) provide new screening levels to address ecorisk, construction workers and vapor intrusion, 3) compare the new screening levels to the previous screening levels, and 4) compare the new screening levels to the most recent site investigation data as presented in the Phase II report (LTR, 2015). The following sets of screening levels were therefore developed for all of the chemicals originally listed in the 1999 RMP (as shown in Appendices B and E from that report):

- Soil screening levels for off-site (nearby) residents and on-site commercial workers
- Soil screening levels for on-site construction workers
- Soil screening levels to protect ecological receptors (terrestrial wildlife)
- Groundwater screening levels for drinking water
- Groundwater screening levels to protect indoor workers from vapor intrusion
- Groundwater screening levels to protect aquatic life

Note that since no residential development is planned for the arena project site, screening levels were not developed for on-site residential use.

SCREENING LEVEL DEVELOPMENT

Details regarding the development of the screening levels are provided below.

Soil Screening Levels for Off-Site Residents and On-Site Commercial Workers

Off-site residents located close to the site were identified as a potential receptor population in the 1999 RMP. This receptor would not have direct contact with site soils by either inadvertent ingestion or dermal contact but may be exposed to chemicals released into the air either by resuspension of soil particulates (for non-volatile chemicals such as metals) or by volatilization (volatile chemicals such as benzene). On-site commercial workers, on the other hand, would be directly exposed to site soils by soil ingestion, dermal contact and inhalation.

Updated soil screening levels for these receptors were obtained primarily from the latest version of the United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) (USEPA, 2015). However, if a corresponding Department of Toxic Substance Control (DTSC) value was available for a particular chemical that value was used preferentially (DTSC, 2015). For the off-site resident, exposed only via inhalation, the Inhalation Screening Level was used. It is important to note that both children and adults are taken into consideration in the development of the residential screening levels and the most stringent value protective of both the adult and child was used. For the on-site commercial worker, the screening level reflecting all soil exposure pathways was used. For carcinogenic chemicals the lower of the cancer or non-cancer risk-based value was used. The resulting values for non-volatile chemicals are shown in Table 1. Table 1 shows that many of the

updated screening levels (particularly for the on-site commercial worker) are well below (more stringent than) the older 1999 screening levels (as indicated in yellow highlight).

It should be noted that the screening level for arsenic (12 mg/kg) is not health risk-based. The value of 12 mg/kg is based on the upper bound of naturally occurring arsenic in California (Bradford et al., 1996). By convention in California, a background-based value for arsenic is normally used as the screening level for arsenic at contaminated sites instead of a health risk-based value (California Environmental Protection Agency [CalEPA], 2005). This is because a strictly health risk-based value would be well below naturally occurring background levels.

The screening level for lead for on-site commercial workers is the California Human Health Screening Level (CHHSL) of 320 mg/kg (Office of Environmental Health Hazard Assessment [OEHHA], 2009). The same value is also protective of off-site residents as the contribution of inhalation exposure to lead is negligible relative to soil ingestion (DTSC, 2011), and off-site residents would only be exposed via inhalation.

Updated screening levels for volatile chemicals in soil are shown in Table 2. Table 2 shows that virtually all of the updated screening levels for both off-site resident and on-site commercial worker are well below the older 1999 screening levels (as indicated in yellow highlight).

Soil Screening Levels for On-Site Construction Workers

The 1999 RMP did not address construction workers. However, construction workers have higher levels of exposure to soils than either residents or commercial workers. Therefore, screening levels for this receptor population are warranted.

Neither USEPA nor any California regulatory agency has developed risk-based screening levels for construction workers. However, USEPA has established calculation methods for developing such levels (USEPA, 2002 and 2015), and the California DTSC has established default exposure parameters for construction worker risk assessment that can be used in the USEPA equations. The soil construction worker equations presented in USEPA (2015) were used to calculate soil screening levels for the construction worker. Screening levels were calculated assuming worker exposure via soil ingestion, dermal contact with soil, and inhalation. The screening levels were calculated using the DTSC exposure parameters shown in Table 3. Toxicity criteria used in the calculations were obtained first from DTSC (2015), and if not available from DTSC (2015), from USEPA (2015). For carcinogenic chemicals the lower of the cancer or non-cancer risk-based value is shown as the final recommended screening value. The resulting screening levels for non-volatile chemicals are shown in Table 4. Note that the screening level for arsenic was assumed to be 12 mg/kg, as discussed previously. The screening level for lead for on-site construction workers was assumed to be the commercial/industrial worker CHHSL of 320 mg/kg (OEHHA, 2009). Screening levels for volatile chemicals are shown in Table 5.

Soil Screening Levels for Protection of Ecological Receptors

The 1999 RMP did not include any ecorisk-based soil screening levels, therefore, ecorisk-based soil screening levels for the protection of terrestrial wildlife were obtained from key USEPA references. Available screening levels for non-volatile chemicals and volatile chemicals are shown in Tables 6 and 7, respectively.

Groundwater Screening Levels Based on Drinking Water Exposure

Groundwater screening levels based on human drinking water exposure were considered to be the State of California enforceable drinking water standard, that is, the Maximum Contaminant Level (MCL) (CalEPA, 2015). However, if an MCL was not available for a particular chemical the USEPA RSL for tapwater ingestion was used (USEPA, 2015). The updated groundwater screening levels are shown in Table 8.

Groundwater Screening Levels to Protect Indoor Workers from Vapor Intrusion

The 1999 RMP did not include screening levels to protect indoor workers from vapor intrusion due to volatile chemicals in groundwater. The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), as part of its Environmental Screening Level (ESL) program, has developed groundwater screening levels to protect workers from this type of chemical exposure (SFBRWQCB, 2013). These values are shown in Table 9.

Groundwater Screening Levels for the Protection of Aquatic Life

The 1999 RMP also did not provide screening levels for the protection of aquatic life from contaminated groundwater. There is a potential for groundwater on the site to daylight or infiltrate into freshwater or estuarine wetlands. Therefore, groundwater screening levels protective of aquatic life were obtained for each of these aquatic habitat types from SFBRWQCB (2013). These values are shown in Table 10.

COMPARISON OF PHASE II DATA TO UPDATED SCREENING LEVELS

Table 11 compares the updated soil screening levels to the maximum soil concentration reported in the Phase II (LTR, 2015). In the Phase II, soils were analyzed in some cases to a maximum depth of 31 ft below ground surface (bgs), but in all cases to at least 10 ft. However, with the exception of barium, the maximum concentrations were all detected within 10 ft bgs. The maximum detected concentration of barium was found at 20 ft; however, this value did not exceed any screening level.

Only those chemicals exceeding at least one of the updated screening levels are shown. Table 11 shows that 18 chemicals exceed at least one of the new screening levels and many of these chemicals exceed more than one screening value. Chemicals exceeding at least two screening levels include arsenic, benzo(a)pyrene, cadmium, lead, and nickel. The greatest exceedances of a screening level were due to lead and nickel. Arsenic was only slightly exceeded (maximum of 13 mg/kg compared to a screening level of 12 mg/kg).

Table 12 shows those chemicals which exceed at least one of the updated groundwater screening levels. Based on the Phase II data, only benzene exceeded a groundwater screening level, and this was based on drinking water exposure.

In summary, using updated screening levels that address a wide range of relevant potential receptors and exposure pathways, 19 chemicals (18 in soil and 1 in groundwater) detected in the Phase II exceed at least one screening level. Of particular importance are lead and nickel due to the significant exceedances of these two chemicals. (*Mission Bay Alliance, Soluri Meserve, letter, October 20, 2015 [O-MBA15S5-1]*)

Second, following release of the NOP/IS,[3] the applicant's consult prepared a Phase II report that identified significant additional contamination in soils onsite. The Phase II report shows that significant amounts of both previously existing and subsequently-imported hazardous waste remain on the site today. Backfill used in this area contained Class 1 and 2 hazardous materials that were not present before the excavation and partial removal of petroleum contaminated materials. These materials are not addressed in the 1998 RMP or 2006 Revised RMP. The FSEIR now acknowledges the existence of this contaminated backfill (FSEIR, 13.22-20), which was withheld from public disclosure in the NOP/IS and RDEIR.

The presence of newly-revealed contamination, viewed in isolation, represents new information and/or a changed circumstance requiring analysis and disclosure in a recirculated DSEIR. What is more, however, the Alliance retained an independent toxicologist to compare the results of the Phase II to the health screening levels in the 1998 RMP (and included in the 2006 RRMP) and current standards. The report prepared by Damian Applied Toxicology, LLC ("DAT"): (1) provides updated screening levels for the constituents at the site; (2) provides newly applicable screening levels that did not exist at the time of the 1998 EIR; (3) compares the new and old screening levels; and

(4) compares the updated screening levels to the most recent site investigation data from the Project site. (See DAT Report, submitted to City on October 20, 2015.)

The DAT Report shows that the prior screening levels are completely outdated and do not protect public health. Using updated screening levels that address a wide range of relevant potential receptors and exposure pathways, the DAT Report concludes that 19 chemicals (18 in soil and 1 in groundwater) that were detected in the 2015 Phase II investigation at the site exceed at least one screening level. Thus, present contamination poses potentially significant hazards due to impacts to the shallow water table, risks to construction workers exposed to site soils, including backfill, risks to commercial workers at the planned development project, and risks from transport and disposal of this hazardous waste, to the extent it may be taken off site. These hazards are not addressed in the RMP/RRMP, and represent new significant impacts that require recirculation of the DSEIR.

The FSEIR mischaracterizes the record in an attempt to dismiss the significance of this newly-discovered contamination that is well above screening levels. First, the FSEIR suggests that it is contamination is not the result of subsequent activities at the Project site, stating, "The fill unit is . . . likely related to debris from the 1906 earthquake and resulting fire." (FSEIR, 13.22-21.) This statement is misleading because is conceals from the public the fact, recognized in both the applicant's Phase II report and the prior BSK report, that this material was deposited onto the Project site in approximately 2005 following excavation to remediate petroleum free-product found onsite. (Phase II report, p. 6; BSK Hazardous Materials Report dated July 22, 2015, p. 3.) Thus, available facts indicate that this contaminated soil was the result of activities that took place following the 1998 SEIR, not the 1906 earthquake.

The City also attempts to dismiss the significance of this contamination by asserting, "[T]he Phase II ESA determined that these concentrations are not considered a health concern to construction workers." (FSEIR, 13.22-21.) First, it is the function of a health risk assessment, and not a Phase II environmental site assessment, to make a determination of human health risk. Indeed, the completely inappropriate and inadequate nature of this conclusion in the Phase II is demonstrated with clarity in the DAT Report, discussed above, establishing that some of these contaminants are found in this fill material at up to ten times current screening levels. The City's misstatements on these critical human health issues fall well below its duty of good faith.

Finally, it is noted that the FSEIR repeatedly relies on compliance with the existing 1999 RMP under the San Francisco Bay Regional Water Quality Control Board ("RWQCB") oversight to ensure that impacts are less than significant. (FSEIR, 13.22-8 – 12.) In addition to establishing that the RMP itself is outdated and no longer adequate to protect human health, the attached correspondence establishes that oversight by the RWQCB is no longer adequate to effectively manage the site for the protection of construction workers and the public. (See Exhibit 3, letter to Dept. of Toxic Substances Control dated October 23, 2015.)

In summary, the information submitted by the Alliance constitutes substantial evidence of a fair argument that the Project will have a significant adverse effect regarding hazardous materials. In the alternative, per CEQA section 21166 and CEQA Guidelines section 15162, the facts described above constitute a change in circumstances since the 1998 SEIR involving, and significant new information showing, a new significant effect not previously analyzed in the 1998 SEIR. Under either standard, the City must prepare and circulate for public comment an environmental impact report to review the Project's impacts on hazardous materials.

Footnote:

[3] Hazards and Hazardous Materials is one of the subjects determined by the City to not warrant any analysis in the DSEIR.

(*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-8]*)

Response to Late Comment HAZ-1: Assessment of Hazardous Materials Impacts

The commenter claims that impacts related to hazards and hazardous materials are inadequately addressed in the Initial Study because the analysis relies on the 1998 FSEIR for the Mission Bay Redevelopment Plan and because the 1999 Risk Management Plan (RMP) prepared in accordance with the FSEIR relies on outdated methodologies for assessing human health and environmental risks associated with exposure to hazardous materials during construction and operation of the project. In addition, the commenter notes that the project sponsor completed a Phase II Environmental Site Assessment in 2015, since completion of the Initial Study analysis, and contends that this is significant new information requiring recirculation of the Draft SEIR. Because a portion of the fill on the project site has been deposited there as part of remediation conducted since publication of the 1998 FSEIR, the commenter further contends that impacts associated with disposal of hazardous soil and exposure to the fill materials are not adequately addressed in the SEIR.

The SEIR describes the history of the site, including investigations and remedial actions that have been performed since 1998. (SEIR, Appendix NOP-IS, pp. 116-118; RTC document, Section 13.22.3.) As these documents explain, in 2005, a portion of the site (located in the south-east area) was excavated as the "Pier 64" response action in order to remove petroleum hydrocarbon free product. After the clean-up was completed, the area was backfilled with concrete rubble and overburden soil that had been excavated and stock-piled in order to remove the hydrocarbon contamination. This material came from the same area that was addressed as part of this cleanup. The Regional Water Quality Control Board – the agency with regulatory authority over the cleanup – determined that this use of the rubble and overburden was appropriate.

The commenter also provides updated environmental screening levels for the evaluation of chemical concentrations in the soil and groundwater and notes that some constituents identified during the 2015 Phase II Environmental Site Assessment exceed at least one screening level. The supporting material for the appeal identifies updated environmental screening levels for on-site construction workers, off-site (nearby) residents, on-site commercial workers, ecological receptors (terrestrial wildlife), drinking water, vapor intrusion into the building, and protection of aquatic life. In addition, the commenter submitted a letter to the California Department of Toxic Substances Control (DTSC) requesting that this agency assume oversight responsibility for implementation of the RMP at the project site.

OCII acknowledges that the environmental screening levels have been updated since preparation of the 1999 RMP for the Mission Bay Plan Area. However, as explained in more detail below, the comment letter conflates this screening level information with the CEQA analysis of potentially significant hazards and hazardous materials impacts. None of the information presented by the commenter, including the updated environmental screening levels, affects the conclusions reached in the SEIR (Initial Study pp. 106 to 122) as augmented and clarified in Response HAZ-1 of the RTC document (Section 13.22.2) regarding hazards and hazardous materials impacts. Specifically:

- the 1999 Mission Bay RMP implements specific risk management procedures and requires compliance with the current San Francisco Health Code Article 22A;

- regulatory requirements applicable to construction of the project would preclude exposure of the public and wildlife to chemicals in the soil during construction of the project; and

- the project design would preclude human, wildlife, and stormwater contact with the soil during operation of the project.

Applicability of 1999 RMP

Among the requirements of the 1999 Mission Bay RMP are risk management measures specific to construction, including dust control measures, soil management protocols, stormwater pollution prevention plan requirements, worker health and safety planning requirements, contingency requirements in the event that previously unidentified underground structures or contamination are identified, protocols for dewatering activities, and a framework for complying with the current requirements of Article 22A.

Measures specific to post- development conditions are intended to manage risks to site occupants and ensure that they would have no contact with site soils and groundwater as well as manage risks to maintenance and utility workers that might come in contact with soil left in place during their normal work activities. They include the following: covering of exposed areas; limiting future residential development within the Mission Bay Plan Area to preclude single family homes with private front or back yards; restricting the future use of groundwater for domestic, industrial, or irrigation purposes; providing protocols for future subsurface activities; and implementing a long-term groundwater monitoring program.

Implementation of the RMP does not rely on outdated standards and procedures, as alleged by the commenter. Rather, the RMP ensures compliance with the current regulatory requirements through implementation of Article 22A of the San Francisco Health Code, as discussed in Response HAZ-1 and HAZ-3 of the Responses to Comments document (see Sections 13.22.2 and 13.22.4, respectively. Known as the "Maher Ordinance", Article 22A, was updated in 2013 and authorizes the San Francisco Department of Health, Environmental Health Branch, Site Assessment and Mitigation (EHB-SAM) to implement state regulations with respect to hazardous substances in soil and groundwater. Article 22A requires a subsurface investigation involving the analyses of soil and groundwater for hazardous substances including, but not limited to: metals, volatile organic compounds (VOC), total petroleum hydrocarbons, semi-volatile organic compounds (SVOC), PCBs, pH levels, cyanides, methane and other flammable gases, and naturally occurring asbestos. Sampling of soil and groundwater must be in accordance with procedures approved by the DTSC or the State Water Resources Control Board and the San Francisco Bay Regional Water Quality Control Board (RWQCB). Likewise, testing of samples must be analyzed by a certified laboratory in accordance with methods approved by these agencies. The subsurface investigation report must disclose the presence of a hazardous substance and, for each, the level detected and must be compared to State and federal guidelines and standards. If

contamination is identified, Article 22A requires a Site Mitigation Plan, describing the procedures, methods, and devices to mitigate or remove contaminated soil, groundwater, and soil vapor. Upon completion, a Certified Final Project Report is also required and each document is subject to approval by EHB-SAM. For sites ½ acre or larger, Article 22A requires submittal of a Dust Control Plan that complies with Article 22B of the San Francisco Health Code. Thus, the project sponsor is required to comply with the RMP, enforceable by the RWQCB through an environmental covenant recorded against the property, as well as the current requirements of Article 22A and Article 22B of the San Francisco Health Code, enforceable by EHB-SAM.

Here, the project sponsor has completed a subsurface investigation, as the commenter acknowledges. The project sponsor has also completed a Site Mitigation Plan that addresses, among other things, appropriate disposal of soil classified as a Class I or II hazardous waste[12] as well as a Dust Monitoring Plan that specifies methods and monitoring to ensure that dust does not cross the property boundaries during construction.[13] EHB-SAM has approved the Site Mitigation Plan[14] and the Dust Monitoring Plan[15] for construction of the project in accordance with Article 22A and Article 22B. Thus, while there is a standing RMP for the project site, the RMP's implementation of Article 22A (in addition to the other measures required by the RMP), ensure that remediation of the soil and groundwater would meet current health risk standards, and that the public and site occupants and visitors would not be exposed to unacceptable levels of site contaminants during construction and operation of the project, as concluded on p. 118 of the Initial Study. (See *City of Maywood v. Los Angeles Unified School Dist.* (2012) 208 Cal.App.4th 362, 409-413 [holding the lead agency properly determined the environmental impact of construction of a school on a site with potential soil contamination was less than significant in consideration of applicable regulations governing further investigation and cleanup of the site prior to construction of the school].)

Applicability of Screening Levels and Potential for Exposure to Contaminants

As described in the DTSC Preliminary Endangerment Assessment Guidance Manual, an early step in the development of a human health risk assessment is development of a conceptual site model which involves gathering information about the site and identifying the potential for exposure to contaminants in soil, groundwater, soil vapors, and surface water.[16] Subsequent steps involve characterizing the potential health risks associated with exposure to the contaminants based on the concentration present and the type of exposure

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[12] Langan Treadwell Rollo, Site Mitigation Plan, Golden State Warriors Arena, Blocks 29-32, Mission Bay, San Francisco, California. June 2015

[13] Langan Treadwell Rollo. Revised Dust Monitoring Plan, Golden State Warriors Arena, Blocks 29 through 32, Mission Bay, California. October 2, 2015.

[14] City and County of San Francisco, Department of Public Health, Environmental Health. Site Mitigation Plan Approval, Golden State Warriors Arena, Blocks 29-32, San Francisco, CA 94158, June 17, 2015.

[15] City and County of San Francisco, Department of Public Health, Environmental Health. Dust Monitoring Plan Approval, Golden State Warriors Arena, Blocks 29-32, San Francisco, CA 94158, November 3, 2015.

[16] State of California Environmental Protection Agency, Department of Toxic Substances Control, Preliminary Endangerment Assessment Guidance Manual, January 1994 (Revised October 2015).

(e.g., inhalation, dermal contact, or ingestion). It is not necessary to evaluate risks where exposure would not occur. Where there could be exposure to contaminants, a screening risk evaluation provides a health-conservative preliminary evaluation of potential risk and hazards to potential receptors such as site occupants, visitors, and maintenance workers. The screening levels used in this type of evaluation use conservative exposure assumptions. If contaminant concentrations are below screening levels, then further analysis of health risks is not required. The presence of contaminant concentrations above screening levels does not mean that the risks associated with those chemicals are significant; rather, that means that further analysis may be warranted to determine what response activities, such as a more detailed risk assessment or site remediation, are required to address the presence of these substances. In this fashion, screening levels serve as an initial means of screening those instances in which response activities may be necessary, from those instances in which further response activities are not necessary.

The comment appears to equate ESLs with significance thresholds for purposes of determining whether hazards at the site are significant under CEQA. For CEQA purposes, the issue is not whether ESLs are exceeded, but whether the project presents a significant risk to human health or the environment in light of the presence of certain contaminants at the site at concentrations in excess of ESLs.

In the event that contaminant concentrations exceed screening levels, it may be necessary to conduct a more detailed risk assessment to more accurately characterize health risks at a contaminated site.

In this case, it is not necessary to conduct a more detailed human health risk assessment for the project, even though some site contaminant concentrations exceed screening levels as noted in the comment. That is because once the project is constructed, site occupants, commercial workers, and visitors, as well as adjacent property owners, visitors and residents, would not be exposed to chemicals in the soil or groundwater, therefore no health risk would occur. Site excavation would remove soil to a minimum depth of 12 feet as part of the site development, and clean engineered backfill would be used where needed. The site would be occupied by buildings or paved, and none of the existing soil on the site would be exposed at grade, as discussed in Responses HAZ-1 and HAZ-3 of the Responses to Comments document (Sections 13.22.2 and 13.22.4, respectively). All landscaped areas on the site would be above structures, and clean soil would be brought in for all landscaped areas on the project site. (See also *Parker Shattuck Neighbors v. Berkeley City Council* (2013) 222 Cal.App.4th 768, 786, fn. 14 (explaining existing soil contamination did not even constitute "a fair argument of a significant effect on the environment… [in part because of] uncontroverted evidence that 26,000 cubic yards of soil will be excavated from… [the project site] before construction and that underground parking and the ground floor will separate residential units from any… [contaminated soil]").) Moreover, the project would not include any residential or other uses that could include backyard gardens or other activities that could involve growing of food crops.

Similarly, the project would not expose people or the environment to risks related to contaminated groundwater (see Table 12 in comment letter O-MBA15S5) because site occupants and workers would not come into contact with the groundwater and the project is deed restricted from using groundwater for drinking water, irrigation, or any other purposes. There would be no substantial risk related to vapor intrusion because, as discussed in Response HAZ-3, only low levels of volatile organics have been identified in the soil and groundwater, based on recent testing in 2015. Indeed, as demonstrated in Tables 9 and 12 of comment letter O-MBA15S5, none of the volatile organic concentrations exceed the updated environmental screening levels for vapor intrusion.

On-site construction workers could be exposed to chemicals in the soil and groundwater during initial phases of construction (i.e., excavation of and removal of soil from the site). However, risks to construction workers would be adequately addressed by the site specific health and safety plan prepared in accordance with the construction contractor's Injury and Illness Prevention Program required by Cal/OSHA (specified in Title 8 of the California Code of Regulations, Sections 1509 and 3203) and the federal Occupational Health and Safety Administration in accordance with Title 29 of the Federal Code of Regulations, Section 1910.120. The health and safety plan, which is kept on-site and updated as necessary, establishes procedures for entering the project site, emergency response procedures, training requirements (i.e., training in accordance with Section 1910.120 of 29 Code of Federal Regulations, known as "HAZWOPER training"), specific personal hygiene requirements, and the use of monitoring equipment specifically to protect construction workers. A health and safety officer would be on site at all times during excavation to ensure that all health and safety measures are maintained and, if necessary, to direct and stop all construction activities in order to ensure compliance with the health and safety plan. Compliance with the health and safety plan would ensure that construction worker exposures to hazardous materials remain within acceptable levels.

During construction, the public (including off-site, nearby residents) would not be exposed to hazardous materials in dust emanating from construction activities because no visible dust would be allowed to cross the property boundaries in accordance with the Dust Monitoring Plan approved by the San Francisco Department of Public Health, which incorporates the requirements of Article 22B of the San Francisco Health Code as also discussed in Response HAZ-3 of the RTC document (see Section 13.22.4). The requirement to comply with Article 22B has been incorporated into the Mitigation Monitoring and Reporting Program. (See p. MMRP-58.)

Potential impacts of the project on biological resources, including impacts associated with exposure to contaminated soils and groundwater, are addressed in the Initial Study (pp. 76 to 84) as augmented and clarified in the RTC document (Section 13.19). The proposed project was determined to have a less-than-significant impact on special status species and sensitive natural communities, both terrestrial and aquatic. No special status species or sensitive natural communities are present on the site, and implementation of required stormwater controls and dust monitoring during construction would ensure that no contaminated

materials would be transported off-site through runoff or wind deposition. As stated above, during operation of the project, there would be no exposure of terrestrial wildlife and aquatic life to contaminated soils. Any ecological risk exposures to aquatic life associated with contact with groundwater are an existing condition that is not a result of the proposed project. That is, to the extent if any that aquatic life could be exposed to hazardous substances currently existing in the groundwater beneath the site, the project is not the cause of that exposure.

As discussed in the Initial Study, the 1998 FSEIR, and the RTC document, the project site has been the subject of extensive hazardous materials investigations beginning in 2001 and continuing through 2015. Soil and groundwater remediation has been conducted under the regulatory supervision of the RWQCB in response to documented soil and groundwater contamination. The SEIR (Initial Study pp. 115 to 118) provides a detailed discussion of the site investigation and remediation activities conducted at the project site. The most recent investigation is the 2015 Phase II Environmental Site Assessment completed in support of the proposed project, as described in Response HAZ-3 (Section 13.22.4 of the RTC document). The analytical results of this investigation are representative of current site conditions. Thus, the environmental review for the proposed project fully discloses the presence of hazardous materials in soil and groundwater on the project site in compliance with current regulatory standards.

Based on the site investigation and characterization described above, the risk assessment process evaluates potential risks to human and environmental receptors from exposure to contaminated soil and groundwater. But here, for the reasons already discussed, there would be no health or environmental risk of exposure to chemicals currently present in soil and groundwater at the project site during project construction or operation that would not be addressed by the required Dust Monitoring Plan and CalOSHA health and safety plan.

For the reasons more fully discussed above, an updated human health or ecological risk assessment using updated environmental screening levels is not necessary to support the conclusions reached in the SEIR Initial Study that project impacts related to hazardous materials in soil and groundwater are less than significant. The commenter does not identify any significant new information that would warrant recirculation of the SEIR.

RWQCB Oversight of RMP Implementation

The commenter has written a letter to the California Department of Toxic Substances Control (DTSC), a copy of which was included in the appeal materials, with the view that the RWQCB (designated as the administering agency for the entire Mission Bay Redevelopment Area by the California EPA Site Designation Committee under Chapter 6.65 of the California Health and Safety Code) has failed to adequately manage risks at the project site and that the DTSC should assume oversight responsibility. The DTSC has responded that they cannot direct ongoing site investigations, sampling, or other site-related activities; they have acknowledged that the San Francisco Department of Public Health (SFDPH) is assisting the RWQCB on issues

related to Article 22A and Article 22B of the San Francisco Health Code, and they encourage the commenter to work directly with the RWQCB.[17]

The San Francisco Department of Health, Environmental Health Branch, Site Assessment and Mitigation (EHB-SAM) has the authority to oversee assessment and mitigation of sites that move greater than 50 cubic yards of soil in designated areas of San Francisco in accordance with the San Francisco Health Code, Article 22A and the Building Code, Section 106.3.2.4 – Hazardous Substances. The entire Mission Bay Plan Area is subject to the requirements of Article 22A, and each developer must comply with its requirements prior to obtaining a building permit. As described above, EHB-SAM requires site specific sampling to occur for each project within the Mission Bay area, compliance with the RMP, a Health and Safety Plan, and a Dust Control Plan. EHB-SAM has worked with the RWQCB since 1999 in assuring compliance with the 1999 RMP approved by the RWQCB for the project site which requires compliance with Article 22A.

In response to the commenter's letter to the DTSC, EHB-SAM has written a follow-up letter to the DTSC providing additional information regarding their role in the regulatory oversight at Mission Bay and in particular, at the project site.[18] In this letter, EHB-SAM describes the current requirements of Article 22A, to which the project site is subject and required to comply with. The specific requirements include an initial site assessment (Phase I report), a work plan for subsurface investigation (if needed), a site characterization report (Phase II report), and a site mitigation plan if hazardous substances are detected above California hazardous waste levels, RWQCB Environmental Screening Levels, or DTSC's California Human Health Screening Levels. The site mitigation plan must address how any detected hazardous substances above these levels will be addressed in light of the planned development. Article 22A requires any subsurface investigation to include sampling of soil, soil vapor, and groundwater. EHB-SAM supplements the 1999 Mission Bay RMP dust control requirements by also requiring compliance with Article 22B, which regulates construction-related dust emissions for projects greater than one-half acre. Article 22A also requires the owner to submit a site specific health and safety plan to EHB-SAM that addresses specific elements two weeks prior to the commencement of work and work cannot proceed until proof of preparation of this plan is received.

Since 1999, EHB-SAM has reviewed and responded to all developments within the Mission Bay Plan Area, and EHB-SAM confers with the RWQCB on all Mission Bay projects prior to issuing a certification letter indicating that compliance with Article 22A is complete. As part of this effort, EHB-SAM has reviewed numerous documents for the proposed project site, including the June 2015 Phase II Environmental Site Assessment, the June 2015 Site

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[17] Pettijohn, Julie C., Senior Environmental Scientist (Supervisory), Brownfields & Environmental Restoration Programs, California Department of Toxic Substances Control, 2015. Letter dated November 17, 2015 to Osha R. Meserve, Soluri Meserve.

[18] Cushing, Stephanie K. J., Principal Environmental Health Inspector, City and County of San Francisco Department of Public Health, Environmental Health, 2015. Letter dated November 10, 2015 to Karen Toth, Department of Toxic Substances Control, regarding Soluri Meserve Letter—October 23, 2015, Mission Bay Development Contamination, including all attachments.

Mitigation Plan, and the Dust Monitoring Plan as revised in October 2015. On June 8, 2015, EHB-SAM approved the Phase II Environmental Site Assessment. On July 13, EHB-SAM approved the Site Mitigation Plan. On November 3, 2015, EHB-SAM approved the Dust Monitoring Control Plan.

Given that DTSC has acknowledged and concurred with the ongoing oversight of the RMP, Site Mitigation Plan, Dust Monitoring Plan, and all other activities governed by Articles 22A and 22B by EHB-SAM, in coordination with the RWQCB as the lead administering agency, the current regulatory responsibilities for addressing contamination at the project site is deemed appropriate, and the commenter's letter to the DTSC is unfounded.

Issues Raised by Late Commenters on Naturally-occurring Asbestos

This response addresses all or part of the following comments, which are quoted below:

O-MBA16S6-7

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7. Hazards and Hazardous Materials

New information and/or changes in circumstances have occurred in the area of hazards and hazardous materials that require recirculation. Although the NOP/IS determined that no additional analysis was required of these issues in the DSEIR, changed circumstances and/or new information following the 1998 SEIR requires recirculation of the DEIR that includes adequate analysis and disclosure of the Project's potentially significant impacts with respect to hazards and hazardous materials.

First, the DSEIR did not previously acknowledge the presence of asbestos on-site. Following release of the DSEIR, the Bay Area Air Quality Management District staff sampled the existing stockpiles on-site, which identified the presence of asbestos above regulatory limits. In response to this newfound asbestos in onsite soils, the applicant was required to prepare an asbestos dust monitoring plan in order to mitigate the significant public health risk. The new asbestos dust monitoring plan, dated October 9, 2015, was released to the public very recently. The newly-discovered presence of asbestos in soils onsite, not previously disclosed in the DSEIR, represents a new significant impact of the Project that requires recirculation. (*Mission Bay Alliance, Soluri Meserve, letter, November 2, 2015 [O-MBA16S6-7]*)

Response to Late Comment HAZ-2: Naturally-occurring Asbestos

The commenter states that the SEIR did not acknowledge the presence of naturally occurring asbestos on-site and only prepared an Asbestos Dust Monitoring Plan in response to actions taken by the Bay Area Air Quality Management District (BAAQMD).

This statement is incorrect. Impacts associated with the potential presence of naturally-occurring asbestos in soil at the project site are addressed in Impact HZ-1 of the SEIR Initial Study (Section E.16, Hazards and Hazardous Materials, pp. 113 through 115). This analysis

acknowledges that the preliminary geotechnical investigation for the site identified cobble to boulder-sized pieces of serpentinite, a rock type known to contain naturally-occurring asbestos, in the artificial fill. While the 1998 Mission Bay FSEIR did not specifically address impacts associated with exposure to naturally-occurring asbestos during construction, the Initial Study for the proposed project fully analyzes these impacts. As stated in Impact HZ-1 and required by Mitigation Measure M-HZ-1b, the project sponsor would be required to implement a geologic investigation to determine the asbestos content of the fill materials to be excavated and implement dust control measures in accordance with the Asbestos Air Toxics Control Measure (Asbestos ATCM) if asbestos concentrations exceed 0.25 percent.

As discussed in Responses HAZ-3 and HAZ-4 of the RTC document (see Section 13.22, Hazards and Hazardous Materials), the project sponsor completed a Phase II Environmental Site Assessment of the project site in 2015 in compliance with Article 22A of the San Francisco Health Code.[19] The Phase II Environmental Site Assessment identified sporadic detections of chrysotile asbestos at concentrations of up to 2 percent.

As specified in Mitigation Measure M-HZ-1b, the project sponsor subsequently prepared an Asbestos Dust Monitoring Plan[20] in accordance with the Asbestos ATCM requirements and submitted it to the BAAQMD for approval. It specifies that during dust generating activities, daily air samples would be collected from an upwind and a downwind location at the perimeter of the site for the analysis of airborne asbestos. In the event that any sample result is greater than 16,000 structures per cubic meter of air, the construction contractor would be required to stop all earth-disturbing activities until the dust is abated and asbestos concentrations are within acceptable levels; the project sponsor, or its designee, would also notify the BAAQMD and the RWQCB (the responsible agencies) of the asbestos level. After one month of monitoring, the project sponsor would submit the monitoring data to the RWQCB for discussion of whether continued monitoring is necessary. On November 16, 2015, the BAAQMD concluded that the plan meets the requirements of the Asbestos ATCM and approved the Asbestos Dust Monitoring Plan.[21]

In addition to the Asbestos ATCM, the project sponsor will implement dust control measures during construction as specified in the Revised Dust Monitoring Plan[22] and described in Response HAZ-3 of the RTC document (See Section 13.22.5) The Revised Dust Monitoring Plan, which the San Francisco Department of Health, Environmental Health Branch, Site Assessment and Mitigation (EHB-SAM) approved on November 3, 3015, includes measures for track-out prevention and control and controlling dust from active storage piles; inactive surface areas and storage piles; unpaved roads, parking lots, and

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[19] Langan Treadwell Rollo, Phase II Environmental Site Assessment, Golden State Warriors Arena, Blocks 29-32, Mission Bay, San Francisco, California. June 2015.

[20] Langan Treadwell Rollo. Asbestos Dust Monitoring Plan, Golden State Warriors Arena, Blocks 29 through 32, Mission Bay, San Francisco, California. November 4, 2015.

[21] BAAQMD, Email from Kevin Vo to Randy Lee, San Francisco Bay Regional Water Quality Control Board, November 16, 2015.

[22] Langan Treadwell Rollo. Revised Dust Monitoring Plan, Golden State Warriors Arena, Blocks 29 through 32, Mission Bay, California. October 2, 2015.

staging areas; paved public roads; earth moving activities; off-site soil transport; and post construction activities.

The results of all dust monitoring would be made available to the RWQCB and BAAQMD upon request, including information regarding the asbestos and dust monitoring activities. Any exceedances, should they occur, and corrective actions taken, if necessary, would be included in the Closure Report prepared under the Site Mitigation Plan[23] described in Response HAZ-3 of the RTC document (see Section 13.22.4).

The project sponsor has begun, and must continue, to implement the above measures pertaining to naturally occurring asbestos in accordance with Mitigation Measure M-HZ-1b of the Initial Study, which mitigates impacts associated with naturally-occurring asbestos to a less-than-significant level, as discussed in Impact HZ-1 of the Initial Study.

Regarding the comment that BAAQMD visited the site and tested soil stockpiles found to contain asbestos, the EHB-SAM advises that it contacted the BAAQMD regarding the soil sampling referred to in one of the appellant's comments and found that the soil sampled was stockpiled on Block 1, and not on the project site.[24] The Mission Bay Development Company, and not the project sponsor, is conducting an infrastructure project on that site, and the RWQCB has required the developer of Block 1 to prepare an asbestos management plan to assure proper management of the soil. This work is not related to the proposed project or the project site, and the events described do not alter the project's requirement to comply with the Asbestos ATCM. As stated, the project sponsor has already prepared an Asbestos ATCM, which BAAQMD has approved, as part of implementation of Mitigation Measure M-HZ-1b.

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[23] Langan Treadwell Rollo, Site Mitigation Plan, Golden State Warriors Arena, Blocks 29-32, Mission Bay, San Francisco, California. June 2015.

[24] San Francisco Department of Public Health, Environmental Health. Memo from Stephanie K.J. Cushing to Tiffany Bohee, OCII. November 19, 2015.

SECTION 19: RESPONSES TO LATE COMMENTS ON ALTERNATIVES

The comments and corresponding responses in this section cover topics described and analyzed in SEIR Chapter 7, Alternatives, as augmented in RTC document Section 13.24. These include topics related to:

- Issue ALT-1: Alternative Site Near Pier 80
- Issue ALT-2: No Project Alternative
- Issue ALT-3: Off-site Alternative

Issues Raised by Late Commenters on Alternative Site Near Pier 80

This response addresses all or part of the following comments, which are quoted below:

O-MBA14B2-1 O-MBA22B4-5 O-MBA28L11-8 PH2-Hawley-2

In the meantime, I write on behalf of the Alliance to present a solution to a key inadequacy of the DSEIR: the failure to analyze a potentially-feasible alternate site.

The Alliance informally disclosed its identification of Pier 80 as a feasible alternate project site to representatives of the City and the Warriors last month, and now formally requests that the OCII revise the DSEIR to analyze that site and recirculate for public and agency comment, as required when "significant new information" emerges. (Pub. Resources Code, § 21092.1; Guidelines, § 15088.5.) While Mayor Ed Lee's response to discovery of a feasible project venue at Pier 80 has been to accuse the Alliance of being unreasonable and, further, to announce that the City has already "reached a consensus" with the Warriors and UCSF regarding the Mission Bay site (see attached press), the Alliance looks to the OCII and the City to fully explore the Pier 80 site in a revised DSEIR as mandated by state law.

As you know, the DSEIR concludes that locating the Warriors Event Center in Mission Bay would create significant environmental impacts. The impacts were recently underscored by a prominent group of UCSF faculty who are also members of the US National Academy of Sciences. Their letter to Mayor Lee (attached) expresses grave concern that because of traffic gridlock adjacent to UCSF Medical Center, "it is absolutely clear to us that the planned new Golden State Warriors Arena and Events Center in Mission Bay would severely degrade the environment for the many thousands of researchers and private sector biomedical scientists who come to work at Mission Bay each day."

In light of project impacts, the City and OCII cannot approve the Event Center at Mission Bay if there is a feasible alternate site that would accomplish most project objectives and substantially reduce environmental problems:

> Public agencies should not approve projects as proposed if there are feasible alternatives … available which would substantially lessen the significant environmental effects of such projects.

(Pub. Resources Code, §§ 21002, 21081.)

Although the Alliance had no obligation to do so, it took the practical step of searching for a better site for the Event Center when the EIR consultants did not. Its efforts culminated in success. The Alliance discovered that a site located near San Francisco's Pier 80 would both meet fundamental project objectives and substantially reduce environmental impacts. A potentially-feasible site that avoids or substantially lessens significant impacts of a project must be analyzed in an EIR even if it "could impede to some degree the attainment of the project objectives, or would be more costly…" (Guidelines, § 15126.6, subd. (b)). Here, the Pier 80 site in fact would not impede the project objectives nor be more costly.

As explained previously, the DSEIR failed to analyze a potentially-feasible off-site alternative as required by CEQA Guidelines section 15126.6. (*See* my comment letter submitted on behalf of the Alliance on July 26, 2015, pp. 8-11.)

The Pier 80 Site.

Located 11 blocks from the Mission Bay site, on 21+ acres well-served by transportation corridors, light rail, and buses, Pier 80's advantages include:

- The arena requires less than 7 acres and could be sited in at least three possible footprints on the 3-times-larger Pier 80 site. (One possible footprint is depicted on the site map above.)
- At the south end of the City, the site provides easy access from all directions, including the southern peninsula. The Highway 280 offramp ends at the site, and Highway 101 is 1/3 mile away. Adjacent Cesar Chavez is a major thoroughfare heavily serviced by muni buses. The Marin Street light rail abuts the site's southern boundary. There is ample access to parking.
- The Pier 80 site's internal streets are in an "H" configuration and only serve tenants of those sites. The streets within the site could easily be abandoned. No through traffic would be impacted by the arena.
- Buildings now on site, including warehouses and lumberyards, are blighted.
- The site's size and location are conducive to ancillary revitalizing development of retail, restaurants, and housing of all market types.

Consistency with Project Objectives. The California Supreme Court mandates that environmental impact reports analyze potentially-feasible alternatives that meet 'fundamental' objectives. *(In re Bay Delta* (2008) 43 Cal.4th 1143, pp. 1165-1166.) Project *objectives* differ from a project's *description* and are not dependent on the currently-proposed Mission Bay site. Fundamental objectives of the Warriors Event Center as recited in the DSEIR will be met at the Pier 80 site:

- Construct a state-of-the-art multi-purpose event center in San Francisco that meets NBA requirements for sports facilities, can be used year-round for sporting events and entertainment and convention purposes with events ranging in capacity from approximately 3,000-18,500, and expands opportunities for the City's tourist, hotel and convention business.

- Provide sufficient complementary mixed-use development, including office and retail uses, to create a lively local and regional visitor serving destination that is active year-round, promotes visitor activity and interest during times when the event center is not in use, provides amenities to visitors of the event center as well as the surrounding neighborhood, and allows for a financially feasible project.
- Develop a project that meets high-quality urban design and high-level sustainability standards.
- Optimize public transit, pedestrian and bicycle access to the site by locating the project within walking distance to local and regional transit hubs, and adjacent to routes that provide safe and convenient access for pedestrians and bicycles.
- Provide adequate parking and vehicular access that meets NBA and project sponsor's reasonable needs for the event center and serves the needs of project visitors and employees, while encouraging the use of transit, bicycle, and other alternative modes of transportation.
- Provide the City with a world class performing arts venue of sufficient size to attract those events which currently bypass San Francisco due to lack of a world class 3,000-4,000 seat facility.
- Develop a project that promotes environmental sustainability, transportation efficiency, greenhouse gas reduction, stormwater management using green technology, and job creation consistent with the objectives of the California Jobs and Economic Improvement Through Environmental Leadership Act
- (AB 900), as amended.

(DSEIR, pp. 3-5 to 3-6.) While the DSEIR also lists ancillary objectives solely relevant to the deeply-flawed Mission Bay site, they are not fundamental to the arena project. Only the objectives listed above are fundamental to the project, as they have been constant since the Warriors' prior selection of the now-abandoned Piers 30-32 site.

Reduced Impacts at Pier 80 Site. The key question and first step in DSEIR analysis of the Pier 80 site must be "whether any of the significant effects of the project would be avoided or substantially lessened" at that location. (See Pub. Resources Code, §§ 21002, 21081.) A wide range of significant impacts of the Warriors' Event Center will be eliminated or reduced at the ample Pier 80 site, without compromising any fundamental project objectives.

For example:

- Project-induced increases in traffic impacts would not combine with the San Francisco Giants' baseball game traffic to the same extreme extent.
- Event Center traffic would not interfere with patients' emergency access to UCSF Medical Center.
- Land use impacts due to the Event Center's incompatibility with long-standing plans for Mission Bay as a hub for biosciences would be avoided.
- Vibrations affecting sensitive research equipment at UCSF would be avoided.

As repeatedly held by the California Supreme Court, project alternatives form the core of every EIR. Objective analysis of the feasibility of siting the Warriors Event Center near Pier 80 must now occur in CEQA's prescribed public process to foster informed decision-making and public participation. Otherwise, the DSEIR will not yet have provided a good-faith effort at full disclosure of a range of reasonable project alternatives, as mandated by CEQA Guidelines section 15126.6, subd.(a) and interpreted by a substantial body of case law.

Thank you for your attention to this request. Please advise whether the OCII will agree to revise and recirculate the DSEIR to study the Pier 80 site. (*Mission Bay Alliance, Susan Brandt-Hawley, letter, October 13, 2015 [O-MBA14B2-1]*)

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b. Alternatives. The Alliance commented on the SEIR's inadequate analysis of the 'no project' alternative and failure to include a potentially-feasible off-site alternative. Following the SEIR comment period, the Alliance informed OCII that it had located a feasible off-site alternative that met project objectives and reduced impacts, and requested its consideration. This should still happen, and the site at Pier 80 should be considered in a revised and recirculated EIR.

In response, the Final SEIR offers rote statements like "CEQA does not require analysis of 'every imaginable alternative' but rather it gives agencies the flexibility to eliminate certain alternatives that either do not reduce environmental impacts or do not further the project's main objectives." (*Mission Bay Alliance, Susan Brandt-Hawley, letter, November 3, 2015 [O-MBA22B4-5]*)

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6. The Commission cannot find that feasible alternatives that would substantially reduce the Project's significant impacts have been adopted. The SEIR does not analyze the alternate site proposed by the Alliance near Pier 80, and did not circulate that analysis for public comment. Neither OCH nor this Commission has the basis to make conclusory findings rejecting the alternative. Among the relevant facts not considered in the findings is that the site is three times as large as would be required for the Event Center project and need not utilize any of the City-owned property nor any particular configuration of the privately-owned lots should there be an unwilling seller. There is no evidence provided that the site could not be acquired within a reasonable time period.

Case law confirms that assuring a site's consistency with city plans and zoning is within the City's power. Similarly, the scheduling of transportation services to the site can be increased, and the findings provide no studies to back up conclusory statements regarding traffic, air quality, hydrology, or water quality impacts. Since only a third of the site is needed to accommodate the event center, all of the impacts (if shown to have concern after sufficient technical review) can be avoided or mitigated. As stated in the Alliance letter to OCH that proposes this site for consideration as an alternative, here incorporated by reference, the SEIR failed to consider a potentially-feasible off-site alternative and must be revised and recirculated to do so before findings of infeasibility may be considered or adopted. The site suggested by the Alliance is potentially feasible and deserving of study. (*Mission Bay Alliance, Thomas N. Lippe, letter, November 9, 2015 [O-MBA28L11-8]*)

Well, thank you very much for your attention. And we ask that you continue this, look at all the issues that have been raised. And, again, the public is looking to you to make sure whatever is approved -- we believe, should be at a -- certainly, at another location -- is fully resolved and not go forward and create environmental problems (*Susan Brandt-Hawley, Transcript, November 3, 2015 [PH2-Hawley-2]*)

Response to Late Comment ALT-1: Alternative Site Near Pier 80

The commenter proposes a new alternative site near Pier 80 and states that it should be included for analysis in the SEIR. The comment alleges that the Draft SEIR is inadequate because it did not analyze this proposed alternate site. Please note that the Draft SEIR does include a discussion of the Pier 80 or the India Basin Area in Table 7-28 in Chapter 7 in the

discussion in Section 7.5.2 of "Alternatives Considered But Rejected." The new alternative site proposed by the commenter appears to consist of approximately six or seven blocks, divided into about 12 lots, located across the street from Pier 80. These parcels are referred to in the comment as the "Pier 80" site, but in light of the discussion in the Draft SEIR of an alternative called "Pier 80" that was considered but rejected, to avoid confusion, the MBA proposed alternate site will be referred to in this response as the "MBA Alternative Site."

The range of alternatives considered in the SEIR includes three alternatives: two alternatives at the project site—the No Project Alternative as required by CEQA Guidelines Section 15126.6(e), and the Reduced Intensity Alternative—and one off-site alternative at Piers 30-32 and Seawall Lot 330. Together, OCII and Planning Department staff determined that the three identified alternatives present a reasonable range of alternatives adequate to inform decision makers.

The SEIR presents and analyzes a reasonable range of alternatives, consistent with CEQA Guidelines Section 15126.6, subdivision (a), which states:

> An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible.

CEQA does not require analysis of "every imaginable alternative." (*Rio Vista Farm Bureau Center v. County of Solana* (1992) 5 Cal.App.4th 351, 376) Rather, CEQA only requires that an EIR include a "reasonable range of potentially feasible alternatives" that would "feasibly attain most of the basic objectives of the project" and "would avoid or substantially lessen any of the significant effects of the project." (CEQA Guidelines, § 15126.6, subd. (a).) Since the directive is to consider alternatives that would "feasibly attain" most of the project objectives, an "EIR need not consider … alternatives that are infeasible." (*California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 981.)

Further, a potential alternative does not need to be analyzed in an EIR if it would not "avoid significant environmental impacts" (CEQA Guidelines, § 15126.6, subd. (c)) or would not achieve primary project objectives. (See *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490, 1507-1508 [upholding the County's conclusion that the reduced density alternative was infeasible since it met some but not all of the project objectives].) See Section 13.24.2 of the RTC document for further discussion of the alternatives selection process used in the SEIR.

For the reasons discussed below, and those presented in OCII's CEQA Findings, the MBA Alternative Site is not a feasible alternative and would not avoid significant impacts of the proposed project.

For purposes of alternatives analysis under CEQA, "feasibility" is defined as follows:

> *Feasibility.* Among other factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent).
>
> (CEQA Guidelines, § 15126.6, subd. (f)(1).)

Public Resources Code, section 21061.1 defines "feasible" to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, legal, and technological factors." CEQA Guidelines section 15364 adds another factor: "legal" considerations. (See also *Citizens of Goleta Valley v. Bd. of Supervisors* (1990) 52 Cal.3d 553, 565; *Jones v. Regents of University of California* (2010) 183 Cal.App.4th 818, 825.)

As noted previously, the concept of "feasibility" also encompasses the question of whether a particular alternative promotes the underlying goals and objectives of a project. (*City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 410, 417; *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490, 1506-1509 [court upholds CEQA findings rejecting alternatives in reliance on applicant's project objectives]; see also *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 1001 (*CNPS*) ["an alternative 'may be found infeasible on the ground it is inconsistent with the project objectives as long as the finding is supported by substantial evidence in the record'"] (quoting 1 Kostka & Zischke, Practice Under the Cal. Environmental Quality Act [Cont.Ed.Bar 2d ed. 2009], § 17.30, p. 825); *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1165, 1166 ["[i]n the CALFED program, feasibility is strongly linked to achievement of each of the primary program objectives"; "a lead agency may structure its EIR alternative analysis around a reasonable definition of underlying purpose and need not study alternatives that cannot achieve that basic goal"].) Moreover, "'feasibility' under CEQA encompasses 'desirability' to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, legal, and technological factors." (*City of Del Mar, supra*, 133 Cal.App.3d at p. 417; see also *CNPS, supra*, 177 Cal.App.4th at p. 1001 ["an alternative that 'is impractical or undesirable form a policy standpoint' may be rejected as infeasible"] [quoting 2 Kostka & Zischke, Practice Under the Cal. Environmental Quality Act, supra, § 17.29, p. 824]; *San Diego Citizenry Group v. County of San Diego* (2013) 219 Cal.App.4th 1, 17.)

The MBA Alternative Site is not feasible for numerous reasons. The parcels located in the area shown on the diagram included in Comment O-MBA14B2-1 as the MBA Alternative Site are governed by the provisions of the City Planning Code and are zoned PDR-2. Planning Code Section 210.3 describes PDR-2 as follows:

> **PDR 2 District: Core Production, Distribution, and Repair.** The Intent of this District is to encourage the introduction, intensification, and protection of a wide range of light and contemporary industrial activities. Thus, this District prohibits new housing, large office developments, large-scale retail, and the heaviest of industrial uses, such as incinerators. Generally, all other uses are permitted. The conservation of existing flexible industrial buildings is also encouraged. This District permits certain non-industrial non-residential uses, including small-scale Retail and Office, Entertainment, certain institutions, and similar uses that would not create conflicts with the primary industrial uses or are compatible with the operational characteristics of businesses in the area. Light Industrial uses in this District may be conducted entirely within an enclosed structure, partly within enclosed structures, or some functions may occur entirely in open areas. These uses may require trucking activity multiple times per day, including trucks with up to 18 wheels or more, and occurring at any time of the day or night. As part of their daily operations, PDR activities in these areas may emit noises, vibrations, odors, and other emissions, as permitted by law. Within the requirements of local, state, and federal health and safety regulations, and within the stipulation of this Code, which may impose additional use size maximums and minimum distance requirements on certain activities, raw materials used for production, manufacturing, repair, storage, research, and distribution may be stored on site and may Include chemical, biological, and other hazardous, explosive, or flammable materials. In considering any new land use not contemplated in this District, the Zoning Administrator shall take into account the intent of this District as expressed in this Section and in the General Plan.

While the event center component of the proposed project may be permitted under the existing zoning, the proposed new office components would not be permitted without a rezoning of the parcels in the MBA Alternative Site to a use district that permits office uses (Planning Code Section 210.3A). Any rezoning would require approval of an ordinance amending the Planning Code. The office component of the proposed project would also be required to seek and obtain a new office allocation for such uses in accordance with Proposition M and Planning Code Section 321. These sites would not have the benefit, under Section 321, of any priority treatment in seeking such office allocation that is currently provided under Section 304.11 of the Mission Bay South Redevelopment Plan.

The existing height limits applicable to the parcels in the MBA Alternative Site range from 40 feet to 68 feet. The proposed event center, in contrast, would be approximately 135 feet in height and the two proposed office towers of the proposed project are 160 feet each. Thus, the development would not be permitted without approval of an ordinance rezoning the height limits in the Planning Code and the Height Maps in order to accommodate the proposed event center and office buildings.

The allowable Floor Area Ratio (FAR) on the site ranges from 3:1 to 5:1. The calculation of floor area for purposes of determining the permitted FAR under the City Planning Code would include almost all gross floor area in the building.

Planning Code Section 102 defines gross floor area in part as:

> Floor Area, Gross. In Districts other than C-3, the sum a/the gross areas of the several floors of a building or buildings, measured from the exterior faces of exterior walls or from the centerlines of walls separating two buildings. Where columns are outside and separated from an exterior wall (curtain wall) that encloses the building space or are otherwise so arranged that the curtain wall Is clearly separate from the structural members, the exterior face of the curtain wall shall be the line of measurement, and the area of the columns themselves at each floor shall also be counted.

Section 102 defines Floor Area Ratio as:

> Floor Area Ratio. The ratio of the Gross Floor Area of all the buildings on a lot to the area of the lot. In cases in which portions of the gross floor area of a building project horizontally beyond the lot lines, all such projecting gross floor area shall also be included in determining the floor area ratio.

Without access to lot sizes or more specific information regarding the parcels in the MBA Alternative Site, it is difficult to assess how the potential FAR calculation may compare to the existing FAR limitations on the site. However, it is likely that as a result of these limitations, the site would also require a rezoning of permitted FAR in order to accommodate the project.

With the information provided to date by the Mission Bay Alliance, neither OCII nor the Planning Department has been able to ascertain with certainty the identity or ownership of all the parcels included in the MBA Alternative Site. However, it is evident that the property consists of approximately 12 separate lots, about half of which are owned by three to four different private parties. These privately owned parcels are occupied by several active businesses operating out of low-level industrial/warehouse buildings, and are not under the site control of the project sponsor. The other, larger lots are controlled by the City and the Port of San Francisco. The 1399 Marin Street property (at the southeast corner of Marin and Indiana Streets) is owned by the Port, but at less than four acres, is too small to accommodate even just the Event Center portion of the proposed project.

This site would also be subject to the Proposition B height limit restriction, which would require voter approval to increase the allowable height.

Pursuant to a memorandum of understanding with the Port, the San Francisco Municipal Transportation Agency (SFMTA) currently uses the 1399 Marin property as a bus acceptance facility, where new vehicles are received and outfitted with necessary equipment (e.g., fare boxes) before they are integrated into SFMTA's fleet. In addition, SFMTA stores vehicles and other equipment at the property, due to the growth of its fleets and overcrowding at its other facilities. Thus, given that this property is currently in active use, it is not feasible to expect that this property could be available for the proposed project.

The 1301 Cesar Chavez property (at the southwest corner of Cesar Chavez and Indiana Streets) is the site of SFMTA's "Islais Creek Motor Coach Facility." SFMTA has been planning this project, and incrementally acquiring the properties at 1301 Cesar Chavez, since 1990. The site is now almost entirely owned by SFMTA, with the exception of two smaller lots under and adjacent to the I-280 freeway, which are owned by Caltrans. SFMTA is still negotiating with Caltrans for the purchase and lease of these last lots. The $129 million project is being constructed in two phases: Phase I, which was completed in 2013, consisted of site preparation and construction of a new fuel and wash building, as well as bus parking facilities; Phase II, which recently broke ground at the southeast corner of the site, will include a maintenance and operations building with vehicle hoists to service buses, a brake shop, parts storeroom, administrative offices, and a community meeting space. Once complete, the Islais Creek facility will be among SFMTA's largest facilities, capable of storing and servicing at least 165 buses and facilitating 300 employees, with 24/7 operations. Because the Islais Creek facility will replace older, outdated, or temporary SFMTA facilities, and will accommodate such a significant portion of SFMTA's fleet, SFMTA considers these properties to be "critical" to its mission.

Thus, the MBA Alternative Site is not a feasible alternative, as it could not be made available for this project within a reasonable period of time, taking into account economic factors, legal factors, and existing uses and development on the site. The Planning Code would need to be amended to allow this use and site assembly would be required. Voter approval of a height increase would be required to use the Port property for this project.

It should also be noted that the location, while adjacent to the Third Street light rail, is in the same general vicinity as the Pier 80 alternative considered but rejected in the Draft SEIR. Both that alternative and the MBA Alternative Site are less well served by Muni and regional transit than the proposed project site, located farther from locations accessible via bicycle and walk modes than the proposed project site, and thus, access to these alternative locations would be primarily via auto. The T Third light rail line is the primary Muni route that would serve the MBA Alternative Site since there are no Muni bus routes on Cesar Chavez Street in the project vicinity. The 19 Polk, with a connection at Evans/Connecticut Streets, runs north to Market Street and connects with the Civic Center BART station, but has limited service during the weekday and Saturday evening and late evening peak periods.

The closest BART station is at 24th Street and Mission Street, approximately two miles to the west. Due to the limited east-west street connections, special event shuttle bus service to/from the BART station would be needed, which would have to follow Cesar Chavez Street, overlapping with project vehicles.

The closest Caltrain station is at 22nd Street, under the I-280 freeway, approximately two thirds of a mile to the north. It offers less train service (i.e., fewer trains stop there) than the Caltrain station at Fourth/King Streets. The 22nd Street station is an intermediate station, as opposed to the line terminal at Fourth/King Streets, so the opportunities for providing

special train service are limited. Special event shuttle bus service would have to travel on Pennsylvania and Indiana Streets, competing with project-related traffic.

Primary vehicular access would be via Cesar Chavez Street (from the northwest and west, including those traveling on U.S. 101 from the North Bay and East Bay areas), on Third Street (from the north and south, including those traveling north on U.S. 101 and exiting at the Third Street off-ramp near Candlestick), and on I-280 (mostly from the southwest and south, from the Peninsula and South Bay). The limited number of east-west and north-south streets connecting with the rest of the City and the freeway system would result in longer duration of congestion prior to and after an event.

Because more attendees would be expected to drive to the MBA Alternative Site due to the more limited transit options, the parking demand would be expected to exceed the demand of approximately 3,900 spaces for a sold out game or concert at the event center at the proposed project's site in Mission Bay. Specifically, it is estimated that more than 2,000 additional parking spaces would be needed to accommodate the expected demand at the MBA Alternative Site. The area in the vicinity of the MBA Alternative Site lacks major off-street parking facilities capable of accommodating the estimated project demand. In addition to potential project-provided parking (which for purposes of a rough estimate is assumed to be about 900 spaces), only Pier 80 (about 800 spaces) and the 19th Street site at Illinois Street, south of Crane Cove Park (about 250 spaces) have been identified as potential additional parking locations. These three facilities combined would provide about 1,950 parking spaces, and accommodate about half of the total parking demand.

Because more attendees would drive to the MBA Alternative Site, locating the project at this site would result in increased congestion on regional facilities and Third Street prior to and after an event.

Therefore, transportation and associated air quality and noise impacts would likely be the same or more severe than those under the project.

In addition, unlike the proposed project site, the MBA Alternative Site is located in an Air Pollution Exposure Zone. Consequently, locating the proposed project at the MBA Alternative Site would likely result in substantially more severe air quality health risk impacts than the proposed project.

The MBA Alternative Site is located directly adjacent to the Islais Creek Channel, and thus would have a greater potential to result in adverse impacts on water quality and aquatic resources due to stormwater runoff into the Bay during both project construction and operation.

Unlike the proposed project site, the MBA Alternative Site is located within the 100-year flood zone. As such, locating the proposed project at this site would expose people and structures to a greater risk of loss, injury or death due to flooding than the proposed project. Moreover, because it is directly adjacent to the Islais Creek Channel and is at a low elevation

relative to sea level, the MBA Alternative Site would be more vulnerable to flooding in the future due to sea level rise and is more vulnerable to tsunami risk than the proposed project site.

Aside from conclusory statements, the comment provides no evidence that any significant environmental impacts identified in the SEIR would be avoided or substantially lessened through the MBA Alternative Site.

Thus, for the reasons stated above, the MBA Alternative Site would not avoid significant impacts of the proposed project, but would likely result in substantially more severe impacts.

In sum, the MBA Alternative Site is not a feasible alternative and would not substantially reduce or avoid significant environmental impacts identified in the SEIR. In fact, as noted above, locating the project at the MBA Alternative Site would likely result in new and substantially more severe significant impacts than those of the proposed project. Furthermore, the alternatives analysis in the SEIR provides an analysis of a reasonable range of alternatives in sufficient detail to allow decision makers to make informed decisions. Therefore, the MBA Alternative Site does not need to be analyzed in the SEIR. In approving the project, the OCII Commission adopted CEQA Findings that find, consistent with the above response, that the MBA Alternative Site is not a feasible project alternative. (OCII CEQA Findings, pp. 71-73.)

For additional information regarding the MBA Alternative Site, and reasons for selecting or rejecting alternatives, see OCII's CEQA Findings, Section V and Section 3, Response to Late Comment ERP-3, of this Exhibit D. The OCII Commission's finding that the Alliance's proposed alternative location near Pier 80 is not feasible is supported by substantial evidence.

The comment also states that the MBA Alternative Site constitutes "significant new information" requiring recirculation of the Draft SEIR. That is not accurate. As explained in CEQA Guidelines section 15088.5, recirculation of an EIR is required only when "significant new information" is added to the EIR after public notice is given of the availability of the Draft EIR for public review but prior to certification of the Final EIR. Examples of "significant new information" are provided in the CEQA Guidelines including: "A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it." (CEQA Guidelines, § 15088.5, subd. (a)(3).) As explained above, the MBA Alternative Site is not feasible and would not clearly lessen the significant environmental impacts of the project. Therefore, recirculation of the SEIR is not required. (See *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 569-570 [when an alternative is proposed after the close of the public comment period, an agency may delineate the reasons for rejecting the alternative as infeasible in the agency's findings].)

Issues Raised by Late Commenters on No Project Alternative

This response addresses all or part of the following comments, which are quoted below:

O-MBA22B4-6

The Alliance agrees, but the statement neither addresses nor cures this particular EIR's failure to analyze the 'no project' alternative or a potentially-feasible off-site location.

As to the 'no project' alternative, the Alliance finds the Responses to Comments again inadequate. Among other things, the responses both dismiss and acknowledge that the UCSF-owned Block 33 is eligible for a tower. That opportunity remains relevant to the discussion as it impacts the extent of reasonably foreseeable development at the Event Center project site if the project does not proceed. The EIR responses also continue to overestimate the traffic impacts of 'no project' by speculative assumptions as to the parking likely to be provided by developers for proposed retail uses. (*Mission Bay Alliance, Susan Brandt-Hawley, letter, November 3, 2015 [O-MBA22B4-6]*)

Response to Late Comment ALT-2: No Project Alternative

The commenter raises the same issues regarding the No Project Alternative that were previously submitted during the public review period. See RTC document, Comment O-MBA6B1-12, which was addressed in the RTC document Section 13.24.3, under Response ALT-2. The commenter states that this response is inadequate because "the responses both dismiss and acknowledge that the UCSF-owned Block 33 is eligible for a tower" and that the responses overestimate the traffic impacts of "no project" based on speculative assumptions as to the parking likely to be provided by developers for proposed retail uses.

As discussed in the RTC document Section 13.24.3, under Response ALT-2, the fact that the UCSF-owned Block 33, located directly south of the project site, is eligible for a tower does not affect the assumptions used for the No Project Alternative. As noted in the SEIR, Chapter 7, Section 7.3.1, the No Project Alternative assumes there would be one tower 160 feet in height located at Block 29. The Design for Development authorization for total number of towers would be unaffected.

Similarly, the SEIR Section 7.3.1 as augmented by RTC Response ALT-2, provides a reasonable estimate of parking spaces that could be provided, with the number of spaces within the minimum and maximum range of allowable parking under the Design for Development. In addition, the estimates of traffic generated by the No Project Alternative were not based on the number of assumed parking spaces, but rather based on a travel demand analysis of the proposed gross square footage of uses. Consequently, the No Project Alternative does not overestimate resultant traffic impacts, or associated traffic related air quality and noise effects.

Issues Raised by Late Commenters on Off-site Alternative

This response addresses all or part of the following comments, which are quoted below:

O-MBA22B4-7

The EIR's refusal to consider a potentially-feasible off-site alternative violates CEQA, which repeatedly confirms that consideration of alternatives is the key to reducing project impacts while accomplishing objectives. The SEIR responses to this issue treat CEQA like a game, tangentially acknowledging that the initial site at Piers 30-32 was too expensive and would require a public vote for a site so unpopular that the Warriors abandoned it, but then repeating over and over that the site is at least "potentially feasible for purposes of this SEIR." (Responses, 13.24-8.) In other words, the rejected site is not feasible in the real world, but can somehow be considered adequate to comply with CEQA under the substantial evidence standard of review. Not so, both as to the site and standard of review. The infeasibility of the site is reflected in the CEQA findings that dismiss it, citing its uncertain approval and significantly more severe impacts than the Mission Bay project. (*Mission Bay Alliance, Susan Brandt-Hawley, letter, November 3, 2015 [O-MBA22B4-7]*)

Response to Late Comment ALT-3: Off-site Alternative

The alternatives analysis in the SEIR is fully compliant with CEQA. As described in SEIR Chapter 7, as augmented by RTC Section 13.24, the SEIR analyzed three alternatives in detail—the No Project Alternative, the Reduced Intensity Alternative, and the Off-site Alternative at Piers 30-32 and Seawall Lot 330—as well as considered 12 other off-site locations, which were rejected from further analysis due to their infeasibility, their inability to meet the basic project objectives, and/or their inability to avoid or lessen significant impacts identified for the proposed project (or would have the potential to result in new and potentially more severe impacts.

It should be noted that CEQA does not require analysis of off-site alternatives for all projects. The CEQA Guidelines provide that "[a]n EIR shall describe a range of reasonable alternatives to the project, *or to the location of the project*, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." (CEQA Guidelines, § 15126.6, subd. (a), italics added.) The CEQA Guideline's use of the disjunctive "or" implies that a lead agency has discretion "to evaluate on-site alternatives, off-site alternatives, or both." (*Mira Mar Community v. City of Oceanside* (2004) 119 Cal.App.4th 477, 491.) Thus, the EIR was not required to include an off-site alternative to comply with CEQA. (See e.g., *Jones v. Regents of the Univ. of Cal.* (2010) 183 Cal.App.4th 818, 827-828 [upholding EIR that excluded off-site alternative based on project objectives]; *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th at pp. 990-995 [upholding EIR that did not include an off-site alternative because such an alternative would not meet the project's basic objectives]; *Save Our Residential Environment v. City of West Hollywood* (1992) Cal.App.4th 1745, 1752 [upholding EIR that did not evaluate an off-site alternative where there was no suitably available alternative location for the project]; *Save*

San Francisco Bay Assn. v. San Francisco Bay Conservation (1992) 10 Cal.App.4th 908 [EIR did not need to consider off-site alternative proposed by project opponents].) Nevertheless, OCII considered numerous potential off-site alternatives and the Off-site Alternative at Piers 30-32 and Seawall Lot 330 was analyzed in the DSEIR because it was determined to be potentially feasible and would reduce or avoid significant environmental impacts. The commenter questions the feasibility of the Off-site Alternative at Piers 30-32 and Seawall Lot 330 due to its history of public controversy when the event center was previously proposed to be constructed at this site. However, as described in the SEIR (pp. 7-14 to 7-15), Piers 30-32 and Seawall Lot 330 was considered to be a potentially feasible location for an off-site alternative due to its site suitability (based on the existing studies that have been conducted for this site), proximity to the downtown and local/regional transit services, its previous history of potential economic viability, the potential ability of the project sponsor to reasonably acquire, control, or otherwise have access to this site (based on previous negotiations and discussions with the Port of San Francisco), and the potential for this alternative to avoid or substantially lessen the project's significant environmental effects. Furthermore, as explained in the SEIR (p. 7-1) and CEQA Guidelines, Section 15126.6(a), the purpose of the alternative analysis is to "evaluate a reasonable range of alternatives to the proposed project that would feasibly attain most of the project's basic objectives, but that would avoid or substantially lessen any identified significant adverse environmental effects of the project." As explained in the SEIR, the off-site alternative would meet basic project objectives (p. 7-19 [Table 7-2]) and would avoid or lessen several of the site-specific significant and unavoidable impacts of the proposed project. See SEIR, pp. 7-67 to 7-99, for a detailed discussion of the off-site alternative and its potential impacts.

Further an EIR must analyze alternatives that are considered "potentially feasible." (CEQA Guidelines, § 15126.6, subd. (a),) Only the decision makers, here the OCII Commission, can determine whether an alternative is actually feasible. (*California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 981, 999; see also *Watsonville Pilots Assn. v. City of Watsonville* (2010) 183 Cal.App.4th 1059, 1087 ["While the lead agency may ultimately determine that the potentially feasible alternatives are not actually feasible due to other considerations, the actual infeasibility of a potential alternative does not preclude the inclusion of that alternative among the reasonable range of alternatives."].) Thus, including the Off-site Alternative at Piers 30-32 and Seawall Lot 330 among the reasonable range of alternatives analyzed in the SEIR was appropriate because it was a potentially feasible alternative.

The fact that the OCII Commission ultimately concluded that the Off-site Alternative at Piers 30-32 and Seawall Lot 330 is infeasible does not render its inclusion in the SEIR inappropriate. As explained in *South County Citizens for Smart Growth v. County of Nevada* (2013) 221 Cal.App.4th 316, 327:

> The determination of whether to include an alternative during the scoping process is based on whether the alternative is *potentially* feasible, and the EIR "is required to make an in-depth discussion of those alternatives identified as at least potentially

> feasible." Differing factors come into play when the final decision on project approval is made; at that juncture the decisionmaking body evaluates whether the alternatives are *actually* feasible. "[T]he decision makers may reject as infeasible alternatives that were identified in the EIR as potentially feasible."

(*Id*. at p. 327, internal citations omitted (original emphasis).)

ATTACHMENT A

Economic & Planning Systems, Inc.,
Mission Bay Blocks 29-32 Office Alternative, April 20, 2015

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Table 1
Project Description Summary
Alternative to Multi-Purpose Venue

Item	Total
Retail	30,000 sq.ft.
Office	1,026,000 sq.ft.
Open Space	3.2 acres

Source: City of San Francisco OEWD; Economic & Planning Systems, Inc.

Table 2
Annual Fiscal Results Summary, Ongoing Revenues (2015 dollars)
Alternative to Multi-Purpose Venue

Item	No Arena Scenario
Annual General Revenue	
Property Tax	$517,000
Property Tax in Lieu of VLF	$528,000
Sales Tax	$68,000
Hotel/Motel Tax	$0
Parking Tax	$337,000
Stadium Admission Tax	$0
Gross Receipts Tax:	$3,576,000
Utility User Tax	$227,000
Subtotal	$5,253,000
Annual Other Dedicated and Restricted Revenue	
Special Fund Property Taxes (Children's, Library, and Open Space)	$84,000
Public Safety Sales Tax	$34,000
SF County Transportation Authority Sales Tax	$34,000
Parking Tax (MTA 80%)	$1,349,000
Subtotal	$1,501,000
Total, General plus Other Dedicated and Restricted Revenues	**$6,754,000**

* Numbers are rounded to the nearest thousand.

Table A-1
San Francisco Revenue Summary (2015 dollars)
Alternative to Multi-Purpose Venue

Item	Calculation Reference	Annual Total
Annual General Revenue		
Property Tax (General Fund)	*Table A-4*	$516,599
Property Tax in Lieu of VLF	*Table A-5*	$528,021
Sales Tax	*Table A-7*	$67,500
Hotel/Motel Tax (General Fund)		$0
Parking Tax	*Table A-8*	$337,260
Stadium Admissions Tax		$0
Gross Receipts Tax:	*Table A-9*	$3,576,243
Utility User Tax	*Table A-10*	$227,304
Subtotal		$5,252,927
Annual Other Dedicated and Restricted Revenue		
Special Fund Property Taxes (Children's, Library, and Open Space)	*Table A-4*	$84,000
Public Safety Sales Tax	*Table A-7*	$33,750
San Francisco County Transportation Authority Sales Tax	*Table A-7*	$33,750
MTA Parking Tax	*Table A-8*	$1,349,040
Subtotal		$1,500,540
TOTAL REVENUES		**$6,753,467**

(1) Reflects additional tax generated by the Multi-Purpose Venue visitors off-site from additional hotel.

Source: Economic & Planning Systems, Inc.

Table A-2
Employment Estimates
Alternative to Multi-Purpose Venue

Item	Assumption	FTE/Total $	Source
Retail	273 sq.ft. per FTE	110	
Office	268 sq.ft. per FTE	3,828	
Parking	270 spaces per FTE	4	HPS FIA
Total Permanent Employment On-site		**3,942**	
Project Construction			
Total Development Cost (1)		$710,855,712	
Labor Portion of Construction Cost	20% of construction value	$142,171,142.35	
Construction: Job-Years (temporary) (2)	$77,500 average annual wage	**1,834**	California Economic Development Department

(1) Construction cost estimates include infrastructure and consist of direct and indirect costs (planning, design, etc.).
(2) Wage based on the average annual construction annual salaries reported for the San Francisco MSA by EDD.

Sources: Economic & Planning Systems, Inc.

Table A-3
San Francisco City One-Time Fee Revenue Estimate
Multi-Purpose Venue

Item	Office	Retail	TOTAL
New Gross Building Area (sq.ft.)	1,026,000	30,000	
City Fees (per gross building sq.ft.) (1)			
Child Care	$1.21	$0.00	**$1,241,460**
Transit Impact Development Fee (§411.3) (2)	$8.87	$14.59	**$9,538,320**
Total Development Impact Fee	$10,342,080	$437,700	**$10,779,780**
Other In-Lieu Impact Fees (3)			
One-Time Transfer Tax	*see Table A-6*		**$4,200,000**

(1) All impact fees are effective as of 1/1/15 and are subject to change based on final project scope of project.
(2) The office fee reflects the increment between the current maximum and the baseline $5 per square foot fee established with the Redevelopment Plan.
(3) Include public art installation fe of 1% of construction value and street trees fees. These fees can be offset by the developer's

Table A-4
Property Tax Estimate
Alternative to Multi-Purpose Venue

Item	Assumptions	Total
Secured Assessed Value (1)		
Retail		$11,025,000
Office		$595,080,000
Parking		$36,960,000
New Taxable Value		**$643,065,000**
Gross Secured Possessory Interest/Property Tax	1.0% of new AV	$6,430,650
Unsecured Tax From Other Uses (2)		$11,025
Subtotal		$6,441,675
(less) Existing Taxes (3)		($1,795,169)
Total		$4,646,506
Property Tax		
Tier 1 Property Tax Pass Through (4)	20.0%	929,301
Tier 2 Property Tax Pass Through (4)	16.8%	780,613
Tier 1 and 2 Property Tax Pass Throughs (4)	36.8%	1,709,914
Net New General Fund Share (after ERAF)	55.59% property tax tier 1 pass through	**$516,599**
Special Funds (5)	9.00% property tax tier 1 pass through	**$83,637**
SF Unified School District	7.70% property tax pass through	**$131,663**
Affordable Housing Set Aside		**$929,301**

Notes to Table A-4

Note: Total assessed value slightly less than total development costs due to the exclusion of "soft costs" from assessed value; this is a conservative assumption.

(1) Initial secured assessed valuation is based on the market values of $580 per square foot for office space, $368 per square foot for retail, and construction cost of $45,000 per space for parking. Assessment is assumed to include the existing land value.

(2) Assumed at 10% of retail assessed value.

(3) Reflects the existing property tax based on the purchase price from Salesforce inflated by 2% a year over 2 years.

(4) While the pass throughs increase above 20% in tiers 2 and 3 per AB1290, the City only receives the share of Tier 1 pass through. The City's share of Tiers 2 and 3 goes to the redevelopment agency successor (02.13.13 interview with the SF Controller's Office). Mission Bay South redevelopment area is currently in Tier 2 with 36.8% generated in pass throughs.

(5) Special funds include property tax set aside for Library, Open Space, and Children's Fund. This reflects the recent approval of Measure C, which will start shifting the General Fund allocation to Children's Fund by 0.25% increments of pass throughs starting in FY15-16 until reaching 55.59% of the 1% base property tax, a reduction from the current 56.59%. These allocations have not changed from the dissolution of redevelopment with proceeds that would have been received by the redevelopment agency now received by the successor agency (the Office of Community Investment and Infrastructure).

Sources: City of San Francisco; Economic & Planning Systems, Inc.

Table A-5
Property Tax in Lieu of VLF Estimate
Alternative to Multi-Purpose Venue

Item	Total
Citywide Total Assessed Value (millions $)	$172,489
Total Assessed Value of Project (see property tax calculation)	$643.07
(less) Existing Value	-$179.52
Net Increase in Project Assessed Value (millions $)	$463.55
Growth in Citywide AV due to Project	0.269%
Total Property Tax in Lieu of Vehicle License Fee (VLF) (FY2014-15)	$196,480,000
Net New Property Tax in Lieu of VLF	**$528,021**

Sources: Economic & Planning Systems, Inc.

Table A-6
Property Transfer Tax
Alternative to Multi-Purpose Venue

Item	Assumptions	Total
One-Time Transfer Tax		
Estimated Land Sale (1)		$172,546,000
One-time Transfer Tax (2)	$24.34 per $1,000 value	**$4,200,000**

(1) Reflects a land acquisition of a portion of the original Salesforce site based on the FAR allocation (1 mill. sq.ft.). The estimate is based on review of recent prevalent land prices as of the date of this report the actual land sale is not available. The sale is not assumed to change due to changes in the development program tested in this analysis.
(2) Based on the City's graduated tax that varies between $5 per $1,000 on the first $250,000 in value and $25 per $1,000 on value above $10 million with the total provided by the City.

Sources: City of San Francisco; Economic & Planning Systems, Inc.

Table A-7
Sales Tax Estimates
Alternative to Multi-Purpose Venue

Item	Assumptions	Total
Taxable Sales From Commercial Space		
Retail	$450 per sq.ft.	$13,500,000
Sales Tax to San Francisco	1.0% of taxable sales	$135,000
(less) Shift From Existing Sales (1)		($67,500)
Net New Sales Tax		$67,500
Annual Sales Tax after Shift of Existing Sales		
Sales Tax to the City General Fund	1.00%	**$67,500**
Public Safety Sales Tax (2)	0.50% of taxable sales	**$33,750**
San Francisco County Transportation Authority (2)	0.50% of taxable sales	**$33,750**
SF Public Financing Authority (Schools) (2)	0.25% of taxable sales	**$16,875**
One-Time Sales Taxes on Construction Materials and Supplies		
New Taxable Value		$643,065,000
Supply/Materials Portion of Construction Cost	50.00%	$321,532,500
San Francisco Capture of Taxable Sales	50.00%	$160,766,250
Sales Tax to San Francisco	1.0% of taxable sales	**$1,607,663**

(1) Deducts share of sales that would have occurred elsewhere in San Francisco (assumes 50%).

(2) Sales tax proportions for these entities are as reported in Controller's Office publication on sales tax from 2008.

Sources: City of San Francisco; Economic & Planning Systems, Inc.

Table A-8
Parking Tax
Alternative to Multi-Purpose Venue

Item	Assumption	Total
Total Spaces On Site		1,056
Parking Revenues On Site		
Total (1)	$25 per day	$9,636,000
(less) Vacancy	30%	($2,890,800)
Total		$6,745,200
San Francisco Parking Tax	25% of annual revenue	**$1,686,300**
Parking Tax Allocation to Gen'l Fund/Special Prc	*20% of tax proceeds*	$337,260
Parking Tax Allocation to Municipal Transp. Func	*80% of tax proceeds*	$1,349,040

(1) Based on parking revenue of $25 a day net of parking taxes.

Sources:Economic & Planning Systems, Inc.

Table A-9
Gross Receipts Tax Estimates
Alternative to Multi-Purpose Venue

Item	Total Gross Receipts (GR)	GR Allocated to SF for GR Tax	Gross Revenue Tier				Gross Receipts Tax
			up to $1m	*$1m - $2.5m*	*$2.5m - $25m*	*$25m+*	
Retail (1)	$6,750,000	$6,750,000	*0.075%*	*0.100%*	*0.135%*	*0.160%*	$6,750
Office (1) (2)	$817,492,899	$735,743,609	*0.400%*	*0.460%*	*0.510%*	*0.560%*	$3,384,421
Parking	$9,636,000	$9,636,000	*0.075%*	*0.100%*	*0.135%*	*0.160%*	$11,884
Office/Retail Rent (2)	$60,768,000	$60,768,000	*0.285%*	*0.285%*	*0.300%*	*0.300%*	$173,189
Total Gross Receipts	**$894,646,899**	**$812,897,609**					**$3,576,243**
Project Construction							
New Taxable Value (3)	$643,000,000	$643,000,000					
Direct Construction Cost (4)	$450,100,000	$450,100,000	*0.300%*	*0.350%*	*0.400%*	*0.450%*	$2,011,200

(1) Based on the tax rate in the 3rd tier since the number of tenants and associates receipts per tenant are not known.

(2) Based on the IMPLAN-derived factor of $213,500 per office employee; 90% of gross receipts are assumed to be subject to the tax as businesses with receipts below $1 million and employment outside of San Francisco will be exempt.

(3) See Table A-4; rounded.

(4) Hard costs have not been estimated for the entire project; as a planning estimate, roughly 30% of costs are assumed to be planning and engineering costs.

Sources: City of San Francisco; Economic & Planning Systems.

Table A-10
Utility User Tax Estimates
Alternative to Multi-Purpose Venue

Item	Assumption	Total
Retail	$2.87 per sq.ft.	$86,100
Office (including Event Management and Team Operations)	$2.87 per sq.ft.	$2,944,620
Total Annual Commercial Utility Cost		$3,030,720
Utility User Tax	7.5% of commercial utility cost	**$227,304**

Table A-11
Stadium Admissions Tax
Multi-Purpose Venue

Item	Total
Annual Multi-Purpose Venue Ticket Sales (1)	
Warriors Games	0
Other Events	0
Average Admission Tax (2)	#DIV/0!
Warriors Games	$2.25
Other Events	$2.00
Total Annual Admission Tax (3)	**$0**

(1) Paid attendance; excludes fixed fee rental events.
(2) Reflects a range of ticket prices with "other events" assumed at $2 per ticket (assumes 15% of the tickets below $25, 85% above $27) and the Warriors games assumed at $2.25 per ticket (applies to tickets exceeding $27 in value). Combines regular admission and supplemental admission tax.
(3) Historically, a share of the revenue was allocated to recreation and parks; this analysis assumes the revenue is fully captured by the General Fund.

Sources: City of San Francisco; Economic & Planning Systems.

ATTACHMENT B

Examples of Compliance Submittals to the San Francisco Planning Department Pursuant to a Verification of Compliance with Construction Emissions Minimization Plan (CEMP)

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Construction Emissions Minimization Plan

Monthly Off-Road Equipment Inventory and Tune Up Log

Submittal Date (mm-dd-yyyy):	05-29-2015
Contractor (Company)	ERRG
Primary Contractor (Yes or No)	Yes
Mailing Address:	115 Sansome Street, Suite 200, San Francisco, CA 94104
Equipment List Contact Person	Jim Nores
Phone #:	510-461-3422

Reporting Month (mm-yyyy):	05-2015
Project Name	Pacific Rod & Gun Club Upland Soil Remedial Action Project
Planning Department Case Number:	2013.1220E
Project Location (address):	520 John Muir Drive
Current Construction Phase(s)	
On-site Contact Person:	Christine Wang
Phone #:	925-286-0529

Contractor or Subcontractor Owning/ Renting Equipment	Equipment Type	Equipment Manufacturer	Equipment Model	Equipment Identification Number	Horse power	Engine Serial Number	Engine Year & Certification (Tier Rating)	Site Mobilization Date	Estimated (E) or Actual (A) Site Demobilization Date	Maintenance and/or Tune Ups Performed this Month	Next Maintenance Type(s) and/or Tune Up Due	Next Maintenance and/or Tune Up Date or Hours	Percent of Time Used on Site	Other Information
ERRG	Dump Truck	CAT	730	GW5R48	325	CAT00730LB1M03601	T4	4/27/2015	E 8/13/2015	500 hour service	Routine Maintenance	2000 hours (118 hours)	100%	
ERRG	Mini Excavator	John Deere	35D	GS9G93	30	FF035DX261165	2008, T4	4/22/2015	E 8/13/2015	500 hour service	Routine Maintenance	1000 hours	50%	
ERRG	Excavator	CAT	328D	LD7N99	204	RMX00800	2012, T3	4/27/2015	E 8/13/2015	500 hour service	Routine Maintenance	8000 hours (243 hours)	100%	
ERRG	Skip Loader	John Deete	210K	MJ6B86	88	1T8210EKHEG891796	2012, T4	5/1/2015	A 5/8/2015	500 hour service	Routine Maintenance	5/20/2015	50%	
ERRG	Excavator	CAT	336E L	M17244	323	BZY01012	2015, T4	5/12/2015	E 8/13/2015	500 hour service	Routine Maintenance	3500 hours (448.7 hours)	100%	
ERRG	Loader	John Deere	544	919591RA	94	I4A3131100020	2012, T4	5/8/2015	E 8/13/2015	500 hour service	Routine Maintenance	4000 hours (274.9)	75%	
ERRG	Forklift	JLG	G6-42A	YH7A36	100	0160053517	2013,T3	5/5/2015	E 8/13/2015	NA	Routine Maintenance	1000 hours (336.3 hours)	75%	
ERRG	Hauler	Volvo	A35F	TF7L37	441	VCE0A35FJ00020204K	2012, T4	5/18/2015	E 8/13/2015	500 hours	Routine Maintenance	1000 hours	75%	
ERRG	Compact Track Loader	Bobcat	T590	SF9M46	66	RL1645785	2015, T4	4/28/2015	E 8/13/2015	New (28.1 hours)	Routine Maintenance	6-22-15 or 1050.1 hours	75%	
Davey Tree Expert Company	Excavator	CAT	330D L	YM3J47	268	485873UC09	T3	5/11/2015	A 5/28/2015	12/8/14	Routine Maintenance	In 345.7 hours	20%	

Construction Emissions Minimization Plan

Monthly Off-Road Equipment Inventory and Tune Up Log

Submittal Date (mm-dd-yyyy):	07-01-2015
Contractor (Company)	ERRG
Primary Contractor (Yes or No)	Yes
Mailing Address:	115 Sansome Street, Suite 200, San Francisco, CA 94104
Equipment List Contact Person	Jim Nores
Phone #:	510-461-3422

Reporting Month (mm-yyyy):	06-2015
Project Name	Pacific Rod & Gun Club Upland Soil Remedial Action Project
Planning Department Case Number:	2013.1220E
Project Location (address):	520 John Muir Drive
Current Construction Phase(s)	
On-site Contact Person:	Christine Wang
Phone #:	925-286-0529

Contractor or Subcontractor Owning/ Renting Equipment	Equipment Type	Equipment Manufacturer	Equipment Model	Equipment Identification Number	Horse power	Engine Serial Number	Engine Year & Certification (Tier Rating)	Site Mobilization Date	Estimated (E) or Actual (A) Site Demobilization Date	Maintenance and/or Tune Ups Performed this Month	Next Maintenance Type(s) and/or Tune Up Due	Next Maintenance and/or Tune Up Date or Hours	Percent of Time Used on Site	Other Information
ERRG	Dump Truck	CAT	730	GW5R48	325	CAT00730LB1M03601	T4	4/27/2015	E 8/13/2015	500 hour service	Routine Maintenance	2000 hours (118 hours)	100%	
ERRG	Mini Excavator	John Deere	35D	GS9G93	30	FF035DX261165	2008, T4	4/22/2015	E 8/13/2015	500 hour service	Routine Maintenance	1000 hours	50%	
ERRG	Excavator	CAT	328D	LD7N99	204	RMX00800	2012, T3	4/27/2015	E 8/13/2015	500 hour service	Routine Maintenance	8000 hours (243 hours)	100%	
ERRG	Excavator	CAT	336E L	M17244	323	BZY01012	2015, T4	5/12/2015	E 8/13/2015	500 hour service	Routine Maintenance	3500 hours (448.7 hours)	100%	
ERRG	Loader	John Deere	544	919591RA	94	I4A3131100020	2012, T4	5/8/2015	E 8/13/2015	500 hour service	Routine Maintenance	4000 hours (274.9)	75%	
ERRG	Forklift	JLG	G6-42A	YH7A36	100	0160053517	2013,T3	5/5/2015	E 8/13/2015	NA	Routine Maintenance	1000 hours (336.3 hours)	75%	
ERRG	Hauler	Volvo	A35F	TF7L37	441	VCE0A35FJ00020204K	2012, T4	5/18/2015	E 8/13/2015	500 hours	Routine Maintenance	1000 hours	75%	
ERRG	Compact Track Loader	Bobcat	T590	SF9M46	66	RL1645785	2015, T4	4/28/2015	E 8/13/2015	New (28.1 hours)	Routine Maintenance	6-22-15 or 1050.1 hours	75%	
ERRG	Backhoe Loader	Case Construction	580SN	RU9M94	110	NDC585692	2013, T4	6/22/2015	E 6/26/2015	500 hour service	Routine Maintenance	In 360 hours	50%	

Construction Emissions Minimization Plan
Monthly Off-Road Equipment Inventory and Tune Up Log

Submittal Date (mm-dd-yyyy):	08-05-2015
Contractor (Company)	ERRG
Primary Contractor (Yes or No)	Yes
Mailing Address:	115 Sansome Street, Suite 200, San Francisco, CA 94104
Equipment List Contact Person	Jim Nores
Phone #:	510-461-3422

Reporting Month (mm-yyyy):	07-2015
Project Name	Pacific Rod & Gun Club Upland Soil Remedial Action Project
Planning Department Case Number:	2013.1220E
Project Location (address):	520 John Muir Drive
Current Construction Phase(s)	
On-site Contact Person:	Christine Wang
Phone #:	925-286-0529

Contractor or Subcontractor Owning/ Renting Equipment	Equipment Type	Equipment Manufacturer	Equipment Model	Equipment Identification Number	Horse power	Engine Serial Number	Engine Year & Certification (Tier Rating)	Site Mobilization Date	Estimated (E) or Actual (A) Site Demobilization Date	Maintenance and/or Tune Ups Performed this Month	Next Maintenance Type(s) and/or Tune Up Due	Next Maintenance and/or Tune Up Date or Hours	Percent of Time Used on Site	Other Information
ERRG	Dump Truck	CAT	730	GW5R48	325	CAT00730LB1M03601	T4	4/27/2015	E 9/11/2015	500 hour service	Routine Maintenance	2000 hours (118 hours)	75%	
ERRG	Mini Excavator	John Deere	35D	GS9G93	30	FF035DX261165	2008, T4	4/22/2015	E 8/14/2015	500 hour service	Routine Maintenance	1000 hours	30%	
ERRG	Excavator	CAT	328D	LD7N99	204	RMX00800	2012, T3	4/27/2015	E 9/11/2015	500 hour service	Routine Maintenance	8000 hours (243 hours)	100%	
ERRG	Excavator	CAT	336E L	M17244	323	BZY01012	2015, T4	5/12/2015	E 8/21/2015	500 hour service	Routine Maintenance	3500 hours (448.7 hours)	100%	
ERRG	Loader	John Deere	544	919591RA	94	I4A3131100020	2012, T4	5/8/2015	E 9/25/2015	500 hour service	Routine Maintenance	4000 hours (274.9)	75%	
ERRG	Forklift	JLG	G6-42A	YH7A36	100	0160053517	2013,T3	5/5/2015	E 8/28/2015	NA	Routine Maintenance	1000 hours (336.3 hours)	25%	
ERRG	Hauler	Volvo	A35F	TF7L37	441	VCE0A35FJ00020204K	2012, T4	5/18/2015	E 9/11/2015	500 hours	Routine Maintenance	1000 hours	75%	
ERRG	Compact Track Loader	Bobcat	T590	SF9M46	66	RL1645785	2015, T4	4/28/2015	E 9/25/2015	New (28.1 hours)	Routine Maintenance	6-22-15 or 1050.1 hours	50%	
ERRG	Backhoe Loader	Case Construction	580SN	RU9M94	110	NDC585692	2013, T4	6/22/2015	A 7/17/2015	500 hour service	Routine Maintenance	In 360 hours	50%	
ERRG	Excavator	Case Construction	CX160C	DK8M56	127	4JJ1 168069	2014, T4	7/2/2015	E 8/14/2015	500 hour service	Routine Maintenance	In 329 hours	100%	
ERRG	Power screen	Terex	Chieftan 1400	XM6N66	110	44804719	2013, T4	6/30/2015	E 8/142015	NA	Routine Maintenance	NA	20%	

Construction Emissions Minimization Plan
Monthly Off-Road Equipment Inventory and Tune Up Log

Submittal Date (mm-dd-yyyy):	09-04-2015
Contractor (Company)	ERRG
Primary Contractor (Yes or No)	Yes
Mailing Address:	115 Sansome Street, Suite 200, San Francisco, CA 94104
Equipment List Contact Person	Jim Nores
Phone #:	510-461-3422

Reporting Month (mm-yyyy):	08-2015
Project Name	Pacific Rod & Gun Club Upland Soil Remedial Action Project
Planning Department Case Number:	2013.1220E
Project Location (address):	520 John Muir Drive
Current Construction Phase(s)	
On-site Contact Person:	Christine Wang
Phone #:	925-286-0529

Contractor or Subcontractor Owning/ Renting Equipment	Equipment Type	Equipment Manufacturer	Equipment Model	Equipment Identification Number	Horse power	Engine Serial Number	Engine Year & Certification (Tier Rating)	Site Mobilization Date	Estimated (E) or Actual (A) Site Demobilization Date	Maintenance and/or Tune Ups Performed this Month	Next Maintenance Type(s) and/or Tune Up Due	Next Maintenance and/or Tune Up Date or Hours	Percent of Time Used on Site	Other Information
ERRG	Dump Truck	CAT	730	GW5R48	325	CAT00730LB1M03601	T4	4/27/2015	E 9/25/2015	500 hour service	Routine Maintenance	2000 hours (118 hours)	75%	
ERRG	Mini Excavator	John Deere	35D	GS9G93	30	FF035DX261165	2008, T4	4/22/2015	E 9/30/2015	500 hour service	Routine Maintenance	1000 hours	30%	
ERRG	Excavator	CAT	328D	LD7N99	204	RMX00800	2012, T3	4/27/2015	E 9/30/2015	500 hour service	Routine Maintenance	8000 hours (243 hours)	100%	
ERRG	Excavator	CAT	336E L	M17244	323	BZY01012	2015, T4	5/12/2015	E 9/25/2015	500 hour service	Routine Maintenance	3500 hours (448.7 hours)	100%	
ERRG	Loader	John Deere	544	919591RA	94	I4A3131100020	2012, T4	5/8/2015	E 10/30//2015	500 hour service	Routine Maintenance	4000 hours (274.9)	75%	
ERRG	Forklift	JLG	G6-42A	YH7A36	100	0160053517	2013,T3	5/5/2015	E 10/30/2015	NA	Routine Maintenance	1000 hours (336.3 hours)	25%	
ERRG	Hauler	Volvo	A35F	TF7L37	441	VCE0A35FJ00020204K	2012, T4	5/18/2015	E 9/30/2015	500 hours	Routine Maintenance	1000 hours	75%	
ERRG	Compact Track Loader	Bobcat	T590	SF9M46	66	RL1645785	2015, T4	4/28/2015	E 10/30/2015	New (28.1 hours)	Routine Maintenance	6-22-15 or 1050.1 hours	50%	
ERRG	Backhoe Loader	Case Construction	580SN	RU9M94	110	NDC585692	2013, T4	6/22/2015	A 7/17/2015	500 hour service	Routine Maintenance	In 360 hours	50%	
ERRG	Excavator	Case Construction	CX160C	DK8M56	127	4JJ1 168069	2014, T4	7/2/2015	A 8/12/2015	500 hour service	Routine Maintenance	In 329 hours	100%	
ERRG	Power screen	Terex	Chieftan 1400	XM6N66	110	44804719	2013, T4	6/30/2015	A 8/13/2015	NA	Routine Maintenance	NA	20%	

Construction Emissions Minimization Plan
Monthly Off-Road Equipment Inventory and Tune Up Log

Submittal Date (mm-dd-yyyy):	10-02-2015
Contractor (Company)	ERRG
Primary Contractor (Yes or No)	Yes
Mailing Address:	115 Sansome Street, Suite 200, San Francisco, CA 94104
Equipment List Contact Person	Jim Nores
Phone #:	510-461-3422

Reporting Month (mm-yyyy):	09-2015
Project Name	Pacific Rod & Gun Club Upland Soil Remedial Action Project
Planning Department Case Number:	2013.1220E
Project Location (address):	520 John Muir Drive
Current Construction Phase(s)	
On-site Contact Person:	Christine Wang
Phone #:	925-286-0529

Contractor or Subcontractor Owning/ Renting Equipment	Equipment Type	Equipment Manufacturer	Equipment Model	Equipment Identification Number	Horse power	Engine Serial Number	Engine Year & Certification (Tier Rating)	Site Mobilization Date	Estimated (E) or Actual (A) Site Demobilization Date	Maintenance and/or Tune Ups Performed this Month	Next Maintenance Type(s) and/or Tune Up Due	Next Maintenance and/or Tune Up Date or Hours	Percent of Time Used on Site	Other Information
ERRG	Hauler	CAT	730	GW5R48	325	CAT00730LB1M03601	T4	4/27/2015	E 9/25/2015	500 hour service	Routine Maintenance	2000 hours (118 hours)	75%	
ERRG	Mini Excavator	John Deere	35D	GS9G93	30	FF035DX261165	2008, T4	4/22/2015	E 9/30/2015	500 hour service	Routine Maintenance	1000 hours	30%	
ERRG	Excavator	CAT	328D	LD7N99	204	RMX00800	2012, T3	4/27/2015	E 9/30/2015	500 hour service	Routine Maintenance	8000 hours (243 hours)	100%	
ERRG	Excavator	CAT	336E L	M17244	323	BZY01012	2015, T4	5/12/2015	A 9/30/2015	500 hour service	Routine Maintenance	3500 hours (448.7 hours)	100%	
ERRG	Loader	John Deere	544	919591RA	94	I4A3131100020	2012, T4	5/8/2015	E 10/30//2015	500 hour service	Routine Maintenance	4000 hours (274.9)	75%	
ERRG	Forklift	JLG	G6-42A	YH7A36	100	0160053517	2013,T3	5/5/2015	E 10/30/2015	NA	Routine Maintenance	1000 hours (336.3 hours)	25%	
ERRG	Hauler	Volvo	A35F	TF7L37	441	VCE0A35FJ00020204K	2012, T4	5/18/2015	A 9/30/2015	500 hours	Routine Maintenance	1000 hours	75%	
ERRG	Compact Track Loader	Bobcat	T590	SF9M46	66	RL1645785	2015, T4	4/28/2015	E 10/30/2015	New (28.1 hours)	Routine Maintenance	6-22-15 or 1050.1 hours	50%	
ERRG	Backhoe Loader	Case Construction	580SN	RU9M94	110	NDC585692	2013, T4	6/22/2015	A 7/17/2015	500 hour service	Routine Maintenance	In 360 hours	50%	
ERRG	Excavator	Case Construction	CX160C	DK8M56	127	4JJ1 168069	2014, T4	7/2/2015	A 8/12/2015	500 hour service	Routine Maintenance	In 329 hours	100%	
ERRG	Power screen	Terex	Chieftan 1400	XM6N66	110	44804719	2013, T4	6/30/2015	A 8/13/2015	NA	Routine Maintenance	NA	20%	
ERRG	Dozer	CAT	D6T	YC9K75	199.8	CAT00D6TJGMK01524	2014, T4	9/1/2015	E 11/6/2015	NA	Routine Maintenance	1000 hour in 315 hours	100%	
ERRG	Dozer	CAT	D6T	NC9J88	199.8	THX13903	2013, T3	9/1/2015	E 11/6/2015	NA	Routine Maintenance	6000 hour in 420 hours	50%	

office of
COMMUNITY INVESTMENT
and INFRASTRUCTURE

Exhibit E

Late Comments

OCII CASE NO. ER 2014-919-97; PLANNING DEPARTMENT CASE NO. 2014.1441E – EVENT CENTER AND MIXED-USE DEVELOPMENT AT MISSION BAY BLOCKS 29-32

CERTIFIED ON NOVEMBER 3, 2015

Exhibit E presents copies of late comments on the Subsequent Environmental Impact Report (SEIR) on the Golden State Warriors' Event Center and Mixed-Use Development at Mission Bay Block 29-32. Late comments are comments that were submitted after the close of the public review period on July 27, 2015 and were received so late that a response could not be included in the Final SEIR. Late comments also include comments submitted on the Final SEIR.

Table E-1 lists the persons or entities who submitted late comments, and also indicates the commenter code. Within each comment letter or oral testimony, the substantive comments that relate to the SEIR or the proposed projects are bracketed according to topic. To facilitate the commenter in locating the responses to his or her comments, this exhibit assigns a unique comment code plus the corresponding topic code to each individual bracketed comment. Both the comment and topic codes are shown in the margin of each written comment, with the unique comment code shown first and the topic code in square brackets beneath the commenter code. This information shown in the margins of each written comment serves as the cross-reference guide for the comment and topic codes. The topic code represents the category and specific topic under which the response to comments on those topics are provided in Exhibit D.

Edwin M. Lee
MAYOR

Tiffany Bohee
EXECUTIVE DIRECTOR

Mara Rosales
CHAIR

Miguel Bustos
Marily Mondejar
Leah Pimentel
Darshan Singh
COMMISSIONERS

One S. Van Ness Ave.,
5th Floor,
San Francisco, CA
94103

415 749 2400

www.sfocii.org

TABLE E-1
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
State Agency				
A-Caltrans2	Patricia Maurice, District Branch Chief, Local Development-Intergovernmental Review, State of California Department of Transportation	Letter	11/02/2015	Transportation
A-UCSF2	Lori Yamauchi, Associate Vice-Chancellor, UCSF Campus Planning,	Letter	11/03/2015	Transportation; Exterior Lighting Plan; Utilities and Service Systems (wastewater treatment capacity); MOU regarding gatehouse
Regional/Local Agency				
A-BAAQMD2	Jean Roggencamp, Deputy Air Pollution Control Officer, Bay Area Air Quality Management District	Letter	11/02/2015	Air Quality
A-MTC	Ken Kirkey, Director, Planning, Metropolitan Transportation Commission	Letter	10/30/2015	Consistency with Plan Bay Area; Transportation
Non-Governmental Organizations				
O-MBA14B2	Susan Brandt-Hawley, Brandt-Hawley Law Group, on behalf of Mission Bay Alliance, submitted to OCII	Letter	10/13/2015	Alternatives (Pier 80)
	• w/ Attachment of links to various newspaper articles, and UCSF letter	-		*[Not bracketed, does not contain comments on the SEIR or proposed project]*
O-MBA15S5	Osha R. Meserve, Soluri Meserve, on behalf of Mission Bay Alliance, submitted to OCII • w/ Attachment from Damian Applied Toxicology, LLC (10/20/2015)	Letter	10/20/2015	Hazards and Hazardous Materials
O-MBA16S6	Patrick M. Soluri, Soluri Meserve, on behalf of Mission Bay Alliance, submitted to OCII	Letter	11/02/2015	Tiering; AB 900; Greenhouse Gases; Wind and Shadow; Recreation; Geology and Soils; Hydrology and Water Quality; Hazards and Hazardous Materials; Urban Decay; Transportation Mitigation/Funding
	• Exhibit 1: SCS Engineers	-	11/02/2015	Greenhouse Gases; AB 900
	• Exhibit 2: BSK Associates	-	11/02/2015	Geology and Soils; Hydrology and Water Quality
	• Exhibit 3: Soluri Meserve letter to DTSC	-	10/23/2015	Hazards and Hazardous Materials *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	– Exhibit A: BSK Associates	-	07/22/2015	Hazards and Hazardous Materials *[Not bracketed because this is same 07/22/15 BSK Associates letter included in O-MBA7S2 Exhibit in the RTC Document.]*

TABLE E-1 (Continued)
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
Non-Governmental Organizations (cont.)				
O-MBA16S6 (cont.)	– Exhibit B: Damian Applied Toxicology, LLC *[same as attachment in O-MBA15S5, above]*	-	10/20/2015	Hazards and Hazardous Materials; *[Not bracketed. Exhibit B: 10/20/15 Damian Applied Toxicology, LLC letter is the same as attachment in O-MBA15S5]*
	• Exhibit 4: Philip King, Ph.D.	-	11/02/2015	Urban Decay
	• Exhibit 5: SFMTA spreadsheet: Capital and Operating Cost Estimates for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32	-	10/13/2015	Transportation Mitigation/Funding *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	• Exhibit 6: Marin Economic Consulting	-	11/02/2015	Transportation Mitigation/Funding
O-MBA17L5	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to OCII	Letter	11/02/2015	Secondary Use Findings; Lack of Fair Trial; and Sunshine Ordinance
O-MBA18L6	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to OCII	Letter	11/02/2015	Violation of Variance Requirement
O-MBA19B3	Susan Brandt-Hawley, Brandt-Hawley Law Group, on behalf of Mission Bay Alliance, submitted to OCII	Letter	11/02/2015	Consistency with Secondary Use Classification
	• With Attachment of 2005 Resolution of MOU between Redevelopment Agency and UCSF			*[Not bracketed, does not contain comments on the SEIR or proposed project]*
O-MBA20L7	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to OCII	Letter	11/03/2015	General; CEQA Process (Noticing); Air Quality/Health Risk; Utilities and Service Systems; Transportation, Hydrology and Water Quality; Biological Resources; and Noise
	• Exhibit A: MR Wolfe and Associates, PC, Attorneys at Law (Comments on Health Risk)	-	11/02/2015	Health Risks
	– Exhibit 1: SWAPE		11/02/2015	Health Risk
	– Exhibit 2: CAPCOA Guidance Document	-	07/2009	Health Risk *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	– Exhibit 3: San Luis Obispo Air Pollution Control District Air Quality Handbook	-	04/2012	Health Risks *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	– Exhibit 4: Mission Bay Land Use Plan	-	11/2005	*[Not bracketed, does not contain comments on the SEIR or proposed project]*

TABLE E-1 (Continued)
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
Non-Governmental Organizations (cont.)				
O-MBA20L7 (cont.)	• Exhibit B: – Exhibit 5: Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines	-	02/2015	Health Risks *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	– Exhibit 6: Office of Environmental Health Hazard Assessment website page on Air Toxicology and Epidemiology (Adoption of the Revised Air Toxics Hot Spots Program Technical Support Document for Cancer Potency Factors	-	Accessed 11/02/2015	Health Risks *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	– Exhibit 7: Office of Environmental Health Hazard Assessment website page on Air Toxicology and Epidemiology (Notice of Adoption of Air Toxics Hot Spots Program Risk Assessment Guidelines))	-	Accessed 11/02/2015	Health Risks *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	– Exhibit 8: Office of Environmental Health Hazard Assessment, excerpt from Technical Support Document for Exposure Assessment and Stochastic Analysis)	-	08/2012	Health Risks *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	• Exhibit C: Autumn Wind and Associates, Inc.: Comments Regarding Air Quality Impact Analysis and Mitigation (Comments on Air Quality)	-	10/30/2015	Air Quality
	• Exhibit D: Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, Public Records Act/ Sunshine Ordinance Request	-	08/13/15	Sunshine Ordinance *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	• Exhibit E: Email from Thomas Lippe to Christine Lamorena, San Francisco Planning Department, and Sally Oerth, Deputy Director, OCII	-	09/30/15	Sunshine Ordinance *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	• Exhibit F: Smith Engineering and Management	-	11/02/15	Transportation
	• Exhibit G: Larry Wymer and Associates Traffic Engineering	-	11/2/2015	Transportation
	• Exhibit H: SWAPE	-	11/01/2015	Hydrology and Water Quality (potential PCBs in Stormwater)
	• Exhibit I: BSK Associates	-	11/02/2015	Hydrology and Water Quality (HYD-3 and HYD-4); and Utilities and Service Systems (UTIL-5, and UTIL-6)
	• Exhibit J: BSK Associates	-	11/02/15	Biological Resources

TABLE E-1 (Continued)
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
Non-Governmental Organizations (cont.)				
O-MBA20L7 (cont.)	• Exhibit K: BSK Associates	-	07/16/15	Biological Resources (Assessment of project site's water and wetland conditions)
	• Exhibit L: BSK Associates, Draft Waters and Wetlands Delineation Report	-	10/29/15	Biological Resources (Draft Waters and Wetlands Delineation Report)
	• Exhibit M: – Summary of Recent City of San Francisco NPDES Permit Violations – Regional Water Quality Board Reports	-	Various dates	Hydrology and Water Quality *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	• Exhibit N: State Executive Order W-59-93	-	08/23/1993	Biological Resources *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	• Exhibit O: State Water Resources Control Board, Effect of SWANCC v. United States on the 401 Certification Program)	-	01/25/2001	Biological Resources *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	• Exhibit P: State Water Resources Control Board, Guidance for Regulation of Discharges to "Isolated" Waters	-	01/25/2004	Biological Resources *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	• Exhibit Q: State Water Resources Control Board, Water Quality Order No. 2004-004-DWQ	-	05/04/2004	Biological Resources *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	• Exhibit R: State Water Resources Control Board, Resolution No. 2008-0026	-	04/15/2008	Biological Resources *[Not bracketed, does not contain comments on the SEIR or proposed project]*
	• Exhibit S: Frank Hubach Associates (FHA)	-	11/02/2015	Noise
O-MBA21L8	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to OCII	Email	11/03/2015	Adequacy of Time to Review and Comment on FSEIR/RTC; Violations of NPDES permits
O-MBA22B4	Susan Brandt-Hawley, Brandt-Hawley Law Group, on behalf of Mission Bay Alliance, submitted to OCII	Letter	11/03/2015	Process; Land Use, Alternatives; Cultural Resources
O-MBA23S7	Patrick M. Soluri, Soluri Meserve, on behalf of Mission Bay Alliance, submitted to SFMTA	Letter	11/03/2015	Project Description Assumptions
	• Exhibit 1: Marin Economic Consulting (11/02/15) [*same as Exhibit 6 in Letter O-MBA16S6*]	-	11/02/2015	*[Not bracketed. Exhibit 1: 11/12/15 Marin Economic Consulting letter is same as Exhibit 6 in Letter O-MBA16S6]*

TABLE E-1 (Continued)
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
Non-Governmental Organizations (cont.)				
O-MBA24L9	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to Planning Commission	Letter	11/05/2015	Compliance with D for D; Consistency with Redevelopment Plan; Office space allocation; General Plan consistency; CEQA Findings for General/BAAQMD/ Alternative Site
	• Exhibit 1: Brandt Hawley Law Group Letter [*same as Letter O-MBA19B3*]	-	11/02/2015	*[Not bracketed. Exhibit 1: 11/02/15 Brandt Hawley Law Group letter is same as Letter O-MBA19B3]*
	• Exhibit 2: Law Offices of Thomas N. Lippe, APC Letter [*same as Letter O-MBA18L6*]	-	11/02/2015	*[Not bracketed. Exhibit 2: 11/02/15 Law Offices of Thomas N. Lippe, APC letter is same as Letter O-MBA18L6]*
	• Exhibit 3: Office Development Annual Limitation ("Annual Limit") Program	-	undated	*[Not bracketed, does not contain comments on the SEIR or proposed project]*
	• Exhibit 4: BAAQMD Letter [*same as Letter A-BAAQMD2*]	-	11/02/2015	*[Exhibit 4: 11//2/15 BAAQMD letter is same as Letter A-BAAQMD2]*
	• Exhibit 5: Letter to OCII Executive Director regarding 11/2/15 BAAQMD Letter	-	11/02/2015	Air Quality *[Not bracketed, does not contain comments on the SEIR or proposed project]*
O-MBA25L10	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to San Francisco DPW	Letter	11/06/2015	Request for notice of hearing on Subdivision Application; Compliance with CEQA, Mission Bay Redevelopment Plan, SF General Plan and Proposition M
	• Exhibit 1: Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance	-	11/05/2015	*[Not bracketed. Exhibit 1: 11/05/15 Law Offices of Thomas N. Lippe, APC letter is same as Letter O-MBA24L9]*
	• Exhibit 1: Brandt Hawley Law Group Letter [*same as Letter O-MBA19B3*]	-	11/02/2015	*[Not bracketed. Exhibit 1: 11/02/15 Brandt Hawley Law Group letter is same as Letter O-MBA19B3]*
	• Exhibit 2: Law Offices of Thomas N. Lippe, APC Letter [*same as Letter O-MBA18L6*]	-	11/02/2015	*[Not bracketed. Exhibit 2: 11/02/15 Law Offices of Thomas N. Lippe, APC letter is same as Letter O-MBA18L6]*
	• Exhibit 3: Office Development Annual Limitation ("Annual Limit") Program	-	undated	*[Not bracketed. Exhibit 3 is same as Exhibit 3 in as Letter O-MBA24L9]*
	• Exhibit 4: BAAQMD Letter [*same as Letter A-BAAQMD2*]	-	11/02/2015	*[Not bracketed. Exhibit 4: 11//2/15 BAAQMD letter is same as Letter A-BAAQMD2]*
	• Exhibit 5: Letter to OCII Executive Director regarding 11/2/15 BAAQMD Letter	-	11/02/2015	*[Not bracketed. Exhibit 5 is same as Exhibit 5 in as Letter O-MBA24L9]*

TABLE E-1 (Continued)
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
Non-Governmental Organizations (cont.)				
O-MBA26S8	Osha R. Meserve, Soluri Meserve, on behalf of Mission Bay Alliance, submitted to BOS Budget and Finance Committee	Letter	11/09/2015	Project Description Assumptions vs. Mitigation Measures
O-MBA27S9	Patrick M. Soluri, Soluri Meserve, on behalf of Mission Bay Alliance, submitted to Entertainment Commission	Letter	11/10/2015	Consistency with Redevelopment Plan; CEQA compliance; CEQA Findings; Project Description Assumptions vs. Mitigation Measures; Adequacy of Traffic Analysis
	• Attachment: Smith Engineering and Management	-	11/10/15	Transportation (Emergency Vehicle Access)
	• Attachment: Smith Engineering and Management	-	11/10/15	Transportation (Parking)
	• Attachment: Soluri Meserve [*same as Letter O-MBA26S8*]		11/09/15	*[Not bracketed. This attachment is same as Letter O-MBA26S8]*
	• Attachment: Larry Wymer and Associates Traffic Engineering [*same as Exhibit G in Letter O-MBA20L7]*	-	11/2/2015	*[Not bracketed. This attachment is same as Exhibit G in Letter O-MBA20L7]*
	• Attachment: Smith Engineering and Management [*same as Exhibit F in Letter O-MBA20L7]*	-	11/02/2015	*[Not bracketed. This attachment is same as Exhibit F in Letter O-MBA20L7]*
	• Attachment: : Law Offices of Thomas N. Lippe, APC Letter [*same as Letter O-MBA10L4*]	-	07/27/2015	*[Not bracketed. This attachment is same as Letter O-MBA10L4]]*
O-MBA28L11	Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to the San Francisco Board of Supervisors Budget and Finance Committee	-	11/09/15	Compliance with CEQA; CEQA Findings; Compliance with General Plan and Proposition M; Air Quality; Alternatives
	• Exhibit 1: Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to Planning Commission	Letter	11/05/2015	*[Not bracketed. Exhibit 1: 11/05/15 Law Offices of Thomas N. Lippe, APC letter is same as Letter O-MBA24L9]*
	• Exhibit 1: Brandt Hawley Law Group Letter [*same as Letter O-MBA19B3*]	-	11/02/2015	*[Not bracketed. Exhibit 1: 11/02/15 Brandt Hawley Law Group letter is same as Letter O-MBA19B3]*
	• Exhibit 2: Law Offices of Thomas N. Lippe, APC Letter [*same as Letter O-MBA18L6*]	-	11/02/2015	*[Not bracketed. Exhibit 2: 11/02/15 Law Offices of Thomas N. Lippe, APC letter is same as Letter O-MBA18L6]*
	• Exhibit 3: Office Development Annual Limitation ("Annual Limit") Program	-	undated	*[Not bracketed. Exhibit 3 is same as Exhibit 3 in as Letter O-MBA24L9]*
	• Exhibit 4: BAAQMD Letter [*same as Letter A-BAAQMD2*]	-	11/02/2015	*[Not bracketed. Exhibit 4: 11//2/15 BAAQMD letter is same as Letter A-BAAQMD2]*

TABLE E-1 (Continued)
PERSONS SUBMITTING LATE COMMENTS

Commenter Code	Name of Person/Agency Submitting Comments	Comment Format	Comment Date	Primary Issues and Notes
Non-Governmental Organizations (cont.)				
O-MBA28L11 (cont.)	• Exhibit 5: Letter to OCII Executive Director regarding 11/2/15 BAAQMD Letter	-	11/02/2015	*[Not bracketed. Exhibit 5 is same as Exhibit 5 in as Letter O-MBA24L9]*
O-MBA29L12	• Exhibit 6: Smith Engineering and Management *[Exhibit to 11/13/15 Appeal Letter from Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance, submitted to OCII]*	Letter	11/13/2015	Transportation (Exhibit to 11/13/15 Appeal Letter from Thomas N. Lippe, Law Offices of Thomas N. Lippe APC, on behalf of Mission Bay Alliance)
Individuals				
I-Templeton	John William Templeton	Email with Attachment	11/02/2015	Environmental Justice
Individuals Commenting on the SEIR at the November 3, 2015 OCII Commission Meeting[1]				
PH2-Lippe	Thomas Lippe	Transcript	11/03/2015	Land Use; Plans and Policies, Hydrology and Water Quality; Air Quality
PH2-Hawley	Susan Brandt Hawley	Transcript	11/03/2015	Land Use; Plans and Policies
PH2-Templeton	John William Templeton	Transcript	11/03/2015	Environmental Justice

[1] Includes only persons critiquing the SEIR.

A-CALTRANS2

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
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Mr. Brett Bollinger
Planning Department
City and County of San Francisco
1650 Mission Street, Suite 400
San Francisco, CA 94103

Event Center & Mixed-Use Development at Mission Bay Blocks 29-32 – Final Responses to Comments on Draft Subsequent Environmental Impact Report

Dear Mr. Bollinger:

Thank you for continuing to include the California Department of Transportation (Caltrans) in the environmental review process for the project referenced above. Our comments seek to promote the State's smart mobility goals that support a vibrant economy and build active communities rather than sprawl. We have reviewed the Final Response to Comments on the Draft Subsequent Environmental Impact Report (RTC) and have the following comments to offer. Please refer to Caltrans' comment letter dated July 20, 2015, on the Draft Subsequent Environmental Impact Report.

Reply to Response TR-2a
Caltrans notes that the RTC Document addresses turning traffic volumes under 2015 Existing Plus Convention Event and 2015 Existing Plus Basketball Game. Yet, traffic analysis under Basketball Game Only and Convention Only Conditions are not provided. As mentioned in Caltrans' previous letter, we recommend the report include traffic turning movement per study intersection under Basketball Game Only and Convention Only Conditions separately for complete comparison review purposes.

1 [LC-TR-1]

Reply to Response TR-2d
Caltrans notes that the RTC Document justifies lower traffic volumes under Basketball Game Conditions in Figure 15a than No Event Conditions in Figure 13a (SEIR, Appendix TR, pgs. TR-156, TR-152). The RTC Document states that the likely arrival of the basketball attendees would be one hour prior to the game. Peak hour traffic volumes under 2040 Cumulative Conditions is assumed during 4pm-6pm. The Document estimates cumulative arrival attendees is five percent during the 4pm-6pm. Thus, the underlying assumptions and methodology may continuously lead to inconsistent traffic patterns of five study intersections (Study Intersections #9 to #13) that

2 [LC-TR-4]

A-CALTRANS2

surround the project site between Figure 15a and Figure 13a. For a conservative approach that resolves irregular traffic concerns expressed in our previous letter, Caltrans recommends the report include peak volume 2040 Cumulative Conditions during 6:30 to 7:30 pm as a worse scenario. The worse one-peak-hour cumulative arrival attendees during 6:30 to 7:30 would be 52% while worse one-peak-hour cumulative departure attendees during 9:30 to 10:30 pm would 70%.

2 [LC-TR-4] cont.

Should you have any questions regarding this letter or require additional information, please contact Sherie George at (510) 286-5535 or sherie.george@dot.ca.gov.

Sincerely,

for
PATRICIA MAURICE
District Branch Chief
Local Development - Intergovernmental Review

c: State Clearinghouse

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

A-UCSF2

University of California
San Francisco

UCSF

Campus Planning

Lori Yamauchi
Associate Vice Chancellor

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Tel: (415) 476-2911
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November 3, 2015

Tiffany Bohee, Executive Director
Office of Community Investment & Infrastructure
One South Van Ness Avenue, 5th Floor
San Francisco, CA 94103

RE: Comments on Warriors' San Francisco Event Center
Final Subsequent Environmental Impact Report
OCII Case No. ER 2014-919-97

Dear Ms. Bohee:

On behalf of the University of California, San Francisco (UCSF) and Chancellor Sam Hawgood, I wish to express UCSF's support for the proposed Golden State Warriors' Event Center project, the certification of the Final Subsequent Environmental Impact Report, and the Office of Community Investment and Infrastructure (OCII) Commission's adoption of Findings and Mitigation Monitoring and Reporting Program; and approval of the Design for Development Amendments, Major Phase application and Schematic Design.

Since the Warriors announced its intent to build a new Event Center/Arena complex at Mission Bay, UCSF has expressed its concerns about the impacts of the proposed Event Center on traffic and parking in the area, with particular focus on the effects on patient safety. We have reviewed and commented on multiple documents issued by the City on the Event Center project, as well as participated in numerous community meetings. UCSF representatives testified before the OCII Commission and before the Planning Commission, and submitted a letter with its comments on the Draft Subsequent EIR. We have reviewed the Responses to Comments and the Final SEIR, and concluded that the City's responses to our comments are generally satisfactory.

We appreciate the addition of a Local Hospital Access Plan to the Transportation Management Plan for the project, which will discourage event attendees arriving

A-UCSF2

by car from using local streets within Mission Bay to get to parking facilities serving the Event Center. This plan will use signage and PCOs to direct event attendees to designated routes and away from streets in the Local Hospital Access Plan network.

We also appreciate the proposed off-site parking to the south of the event center for use by event attendees, namely the 19th Street lot on Port property at Pier 70 and the Western Pacific site near Pier 80. As the SEIR notes, this parking is intended to help to alleviate pre-event traffic impacts at intersections in and adjacent to the UCSF Medical Center at Mission Bay, particularly when there are large, overlapping events at the Event Center and at AT&T Park.

We wish to reiterate that UCSF is unable to make its off-street parking garages and lots available to event attendees arriving by car because UCSF needs this parking to meet demand from its staff, patients and visitors.

We also appreciate the proposed Mission Bay Transportation Improvement Fund, or Special Reserve Account, including the Designated Overlapping Event Reserve Account, to fund traffic management programs implemented by the City to serve the project. We also appreciate the proposed formation of an Advisory Committee, which would include UCSF, to advise the MTA and other city departments on improvement measures and City actions and expenditures needed to address traffic congestion associated with the Event Center.

We appreciate the refinements to the construction tower crane plan, which will place the tower cranes outside the UCSF helipad airspace, so that our emergency helicopters can access UCSF's medical helipad safely.

We appreciate the proposed Muni UCSF/Mission Bay Station variant which will replace the existing passenger platforms with a single platform which extends south of and away from the UCSF student housing. We support this variant, and recommend that the OCII Commission adopt it as part of the project approval.

We wish to point out a few areas where we believe the Final SEIR and the project could be strengthened:

- First, we request that the City make long-term commitments on providing the off-site parking at 19th Street and the Western Pacific sites to serve the Event Center. 1 [LC-TR-15]
- Second, we ask that the City, working with Caltrans, provide a solution to the traffic congestion at the Mariposa I-280 northbound off-ramp during pre-event peak periods. UCSF requested a mitigation measure to reconfigure the off-ramp lanes to better 2 [LC-TR-10]

A-UCSF2

segregate Event Center traffic from UCSF and other non-Event Center traffic. We believe that this is a feasible and effective measure. 2 [LC-TR-10] cont.

- Third, we ask that in Mitigation Measure M-TR-9d, Event Center Exterior Lighting Plan, that the words "where feasible" be deleted. The Warriors have a large site to work with, and it seems reasonable that they could "avoid the use of light configurations similar to those associated with the UCSF helipad landing area, and locate primary outdoor lighted displays and television/lighted screens away from the project property line at 16th Street, South Street, or Third Street" without adding the qualifying "where feasible." This is important for the safety of patients, pilots, and persons in the vicinity. 3 [LC-TR-16]

- Finally, we ask that the City produce an explanation of how the wastewater treatment capacity at Mission Bay's Mariposa basin will be made adequate to serve all projected development at Mission Bay, and what the mitigation plan is and the solution is to this longstanding problem. Despite repeated requests from UCSF, the City has produced no information, nor identified a specific solution to this problem. This will affect all development parties at and around Mission Bay, including UCSF, both in wastewater service for existing facilities, as well as proposed new facilities. 4 [LC-UTIL-1]

In addition, we note that there is an error in the staff memorandum to the OCII Commission regarding certification of the Final Subsequent EIR for the Warriors Event Center and Mixed Use Development. On page 17, 4th paragraph of the memorandum, it states "The Project Sponsor and UCSF have signed a Memorandum of Understanding ("MOU") through which UCSF consents to the Gatehouse location." This is not true, as the MOU relates only to traffic conditions during the overlapping events, and not the Gatehouse location. This error should be corrected.

Thank you for the opportunity to comment on the FEIR. UCSF is supportive of a successful Event Center project, and looks forward to providing further input and coordination as the project moves on to the implementation phase.

Should you have any questions, please contact me at (415) 476-8312.

Sincerely,

Lori Yamauchi

Lori Yamauchi, Associate Vice Chancellor

A-BAAQMD2

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

November 2, 2015

Tiffany Bohee
Executive Director
Office of Community Investment and Infrastructure
One S. Van Ness Ave., 5th Floor
San Francisco, CA 94103

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MARIN COUNTY
Katie Rice

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Liz Kniss
(Secretary)
Jan Pepper
Rod G. Sinks

SOLANO COUNTY
James Spering

SONOMA COUNTY
Teresa Barrett
Shirlee Zane

Jack P. Broadbent
EXECUTIVE OFFICER/APCO

Subject: Response to Comments on the DSEIR for the Event Center & Mixed-Use Development at Mission Bay Blocks 29-32 (Project).

Dear Ms. Bohee:

The Bay Area Air Quality Management District (Air District) is willing to assist the City and County of San Francisco (City) by administering an off-site mitigation program to reduce this Project's significant air quality impacts to the extent feasible. As we have discussed extensively with City staff, the $321,646 identified in M-AQ-2b is not sufficient to achieve the 17 tons per year of ozone precursor emission reductions needed for this Project. Due to the nature of air quality impacts that need to be mitigated, comparison of the Air District off-site mitigation program identified for this Project to other air district programs is inappropriate and incorrect.

The amount of funds required to reduce 4.4 tons of reactive organic gases (ROG) and 12.6 tons of oxides of nitrogen (NOx), including a 5 percent administration fee, is $620,922. This amount is based on a study of the Air District's Vehicle Buy Back (VBB) program funds spent over the last 3 years and represents the average cost of reducing ROG and NOx during that three year period. Only through the VBB program can the Air District achieve the contemporaneous emission reductions and other conditions set forth in M-AQ-2b.

Air District staff continues to be willing to assist the City in implementing an off-site mitigation program. However, the Final Environmental Impact Report Response to Comments includes the following statement: "Acceptance of this fee by the BAAQMD shall serve as an acknowledgement and commitment by the BAAQMD to: (1) implement an emissions reduction project(s) within one year of receipt of the mitigation fee to achieve the emission reduction objectives specified above [i.e. 17 tons of ozone precursors per year]". Given this language, unless the City amends M-AQ-2b to fund this feasible mitigation measure at the $620,922 level previously discussed with City staff, the Air District will be unable to participate in offsetting this Project's air quality impacts. 1 [LC-AQ-1]

A-BAAQMD2

Tiffany Bohee November 2, 2015

If you have any questions, please contact Alison Kirk, Senior Environmental Planner, at (415) 749-5169 or akirk@baaqmd.gov.

Sincerely,

Jean Roggenkamp
Deputy Executive Officer

cc: BAAQMD Vice Chair Eric Mar
BAAQMD Director John Avalos
BAAQMD Director Edwin M. Lee

A-MTC

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October 30, 2015

Tiffany Bohee, Executive Director
Office of Community Investment and Infrastructure
One South Van Ness Avenue, 5th Floor
San Francisco, CA 94103

Re: Mission Bay Event Center - Transportation Mitigation Measures

Dear Ms. Bohee,

Metropolitan Transportation Commission ("MTC") staff have reviewed the Subsequent Environmental Impact Report (SEIR) and related Transportation Mitigation Measures for the proposed Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 (Project).

In particular, staff has considered the assumptions and approaches outlined in the SEIR relative to mode choice and the analysis of project-serving transportation projects as well as the relationship of transportation projects identified in the SEIR relative to transportation projects included in the Regional Transportation Plan/Sustainable Communities Strategy adopted in 2013, Plan Bay Area (PBA). We believe that the assumptions encompassed in the SEIR are sound and appropriately conservative and the transportation project analysis considers the relevant transportation projects for analysis. From a regional perspective, this location is well-served by transit and would likely experience a high percentage of non-auto mode trips in comparison to most Bay Area locations. Our detailed comments are outlined below.

1
[LC-TR-9]

Plan Bay Area & Priority Development Areas

As discussed in Plan Bay Area, the Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, prepared by MTC and the Association of Bay Area Governments (ABAG), Mission Bay is included within one of San Francisco's Priority Development Areas (PDAs). PDAs are, in short, "transit-oriented, infill development opportunity areas." (Plan Bay Area, p. 77.) The Plan Bay Area anticipates that the majority of future development within the San Francisco Bay Area, including 78 percent of new housing and 62 percent of new jobs, will occur within the region's PDAs. (Plan Bay Area, pp. 26, 57.) Development of the Project within Mission Bay is consistent with Plan Bay Area's goal to promote infill development and the creation of jobs within the region's PDAs.

To encourage more development near high-quality transit and reward jurisdictions that produce housing and jobs, Plan Bay Area proposes to target transportation investments in

2
[LC-PP-4]

PDAs and to support planning efforts for transit-oriented development in PDAs. For example, in May 2012, MTC approved a new funding approach that directs specific federal funds to support more focused growth in the Bay Area. MTC committed $320 million through 2017 (and $14.6 billion through 2040 - the life of the plan), from federal surface transportation legislation currently known as MAP-21 (Moving Ahead for Progress in the 21st Century) towards the One Bay Area Grant (OBAG) program. (Plan Bay Area, p. 76.) The OBAG program allows communities flexibility to invest in transportation infrastructure that supports infill development by providing funding for bicycle and pedestrian improvements, local street repair, and planning activities. Within San Francisco, at least 70 percent of OBAG investments must be directed to the City's PDAs. In short, Plan Bay Area is designed to provide the transportation investments necessary to allow PDAs to accommodate the dense land use development envisioned by the Plan.

2 [LC-PP-4] cont.

User Mode Choice

The approach to estimating mode choice relies on observed data from AT&T Park/the San Francisco Giants and the Moscone Center, combined with conservative assumptions regarding transit, pedestrian, and bicycle use. The presence of analogous developments in the vicinity of the Mission Bay location with observed data on travelers is a very useful asset to the Mission Bay project and the analysis wisely leverages this information. MTC believes the mode split described for the project is reasonable and achievable.

3 [LC-TR-5]

Regional Transportation Infrastructure

The baseline transportation network for the Project is adequately described in the SEIR. Relative to transportation impacts the information cited regarding the Central Subway and Muni Forward projects is correct. Expanded Muni boarding islands to accommodate passenger demand is a beneficial infrastructure investment that will increase transit capacity during peak usage periods. Therefore, improvements to the Muni UCSF/Mission Bay Station Platform, both under the proposed project and the Muni UCSF/Mission Bay Station Variant, will benefit not only the Project but also Muni transit riders within Mission Bay generally.

The SEIR describes Muni shuttle routes that are not specifically included in Plan Bay Area. This type of flexible, relatively low cost operational effort does not have to be included in Plan Bay Area. However, it should be noted that similar service boosts were included in PBA related to two major, multi-phase neighborhood development projects in San Francisco, Treasure Island & Hunters Point/Candlestick Point. Similar to Mission Bay, both of these neighborhoods are Priority Development Areas (PDAs) and will be incorporating a large share of Plan Bay Area's growth allocation of housing and jobs for the City and County of San Francisco through 2040.

The SEIR includes a cumulative impact analysis that is appropriately comprehensive and reflects nearby planned development in the Mission Bay neighborhood as well development that is envisioned in the Central SOMA neighborhood plan. Infrastructure investments analyzed in the cumulative impact analysis include: Interstate 280 ramp changes; the extension of the MUNI 22-Fillmore trolley bus to Mission Bay; the Central Subway; the Muni Forward service and capacity improvement project; the addition of the new, expanded Transbay Terminal; Caltrain Electrification; the Downtown Extension that will link Caltrain from its current terminus at 4th and King to the Transbay Terminal; and, unspecified capacity upgrades for other regional transit operators. Regional improvements like those addressed in the cumulative impact analysis are funded through MTC, its $293 billion regional transportation plan budget through 2035, encompassing reasonably anticipated regional, state and federal fundings sources. Moreover, it should be noted that a number of the regional improvements addressed in the SEIR including the Central Subway are already under construction.

4 [LC-TR-8]

Conclusion

In summary, the SEIR reflects key regional projects serving the arena vicinity including the Central Subway and Muni Forward projects (as the project would be directly served by both). Improvements to other systems – like BART and Caltrain – that do not provide direct service but would be accessible from the proposed arena and provide service to the vicinity from the East Bay and the Peninsula are also described in the SEIR. Both BART and Caltrain have projects included in Plan Bay Area that will provide for expanded service and capacity of those systems. These projects and their connectivity to local-serving transit projects such as the Central Subway and MUNI Forward further support the mode choice assumptions outlined in the EIR.

5 [LC-TR-9]

Please let us know if you have any questions related to MTC's analysis of the Mission Bay Event Center SEIR.

Sincerely,

Ken Kirkey
Director, Planning

O-MBA14B2

Brandt-Hawley Law Group

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October 13, 2015

Tiffany Bohee, OCII Executive Director
c/o Brett Bollinger, San Francisco Planning Department
via email warriors@sfgov.org

Subject: Pier 80 Alternate Site for Warriors Event Center
OCII: ER 2014-919-97 Planning Dept.: 2014.1441E

Dear Ms. Bohee and Mr. Bollinger:

The Mission Bay Alliance submitted extensive comments on the Draft Subsequent EIR ('DSEIR') in late July and is looking forward to the OCII's responses. In the meantime, I write on behalf of the Alliance to present a solution to a key inadequacy of the DSEIR: the failure to analyze a potentially-feasible alternate site.

The Alliance informally disclosed its identification of Pier 80 as a feasible alternate project site to representatives of the City and the Warriors last month, and now formally requests that the OCII revise the DSEIR to analyze that site and recirculate for public and agency comment, as required when "significant new information" emerges. (Pub. Resources Code, § 21092.1; Guidelines, § 15088.5.) While Mayor Ed Lee's response to discovery of a feasible project venue at Pier 80 has been to accuse the Alliance of being unreasonable and, further, to announce that the City has already "reached a consensus" with the Warriors and UCSF regarding the Mission Bay site (see attached press), the Alliance looks to the OCII and the City to fully explore the Pier 80 site in a revised DSEIR as mandated by state law.

As you know, the DSEIR concludes that locating the Warriors Event Center in Mission Bay would create significant environmental impacts. The impacts were

1 [LC-ALT-1]

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recently underscored by a prominent group of UCSF faculty who are also members of the US National Academy of Sciences. Their letter to Mayor Lee (attached) expresses grave concern that because of traffic gridlock adjacent to UCSF Medical Center, "it is absolutely clear to us that the planned new Golden State Warriors Arena and Events Center in Mission Bay would severely degrade the environment for the many thousands of researchers and private sector biomedical scientists who come to work at Mission Bay each day."

In light of project impacts, the City and OCII cannot approve the Event Center at Mission Bay if there is a feasible alternate site that would accomplish most project objectives and substantially reduce environmental problems:

> Public agencies should not approve projects as proposed if there are feasible alternatives … available which would substantially lessen the significant environmental effects of such projects.

(Pub. Resources Code, §§ 21002, 21081.)

Although the Alliance had no obligation to do so, it took the practical step of searching for a better site for the Event Center when the EIR consultants did not. Its efforts culminated in success. The Alliance discovered that a site located near San Francisco's Pier 80 would both meet fundamental project objectives and substantially reduce environmental impacts. A potentially-feasible site that avoids or substantially lessens significant impacts of a project must be analyzed in an EIR even if it "could impede to some degree the attainment of the project objectives, or would be more costly…" (Guidelines, § 15126.6, subd. (b)). Here, the Pier 80 site in fact would not impede the project objectives nor be more costly.

As explained previously, the DSEIR failed to analyze a potentially-feasible off-site alternative as required by CEQA Guidelines section 15126.6. (*See* my comment letter submitted on behalf of the Alliance on July 26, 2015, pp. 8-11.)

1 [LC-ALT-1 cont.]

O-MBA14B2

The Pier 80 Site.

Located 11 blocks from the Mission Bay site, on 21+ acres well-served by transportation corridors, light rail, and buses, Pier 80's advantages include:

- The arena requires less than 7 acres and could be sited in at least three possible footprints on the 3-times-larger Pier 80 site. (One possible footprint is depicted on the site map above.)
- At the south end of the City, the site provides easy access from all directions, including the southern peninsula. The Highway 280 offramp ends at the site, and Highway 101 is 1/3 mile away. Adjacent Cesar Chavez is a major thoroughfare heavily serviced by muni buses. The Marin Street light rail abuts the site's southern boundary. There is ample access to parking.

1 [LC-ALT-1] cont.

O-MBA14B2

- The Pier 80 site's internal streets are in an "H" configuration and only serve tenants of those sites. The streets within the site could easily be abandoned. No through traffic would be impacted by the arena.
- Buildings now on site, including warehouses and lumberyards, are blighted.
- The site's size and location are conducive to ancillary revitalizing development of retail, restaurants, and housing of all market types.

Consistency with Project Objectives. The California Supreme Court mandates that environmental impact reports analyze potentially-feasible alternatives that meet 'fundamental' objectives. (*In re Bay Delta* (2008) 43 Cal.4th 1143, pp. 1165-1166.) Project *objectives* differ from a project's *description* and are not dependent on the currently-proposed Mission Bay site. Fundamental objectives of the Warriors Event Center as recited in the DSEIR will be met at the Pier 80 site:

- Construct a state-of-the-art multi-purpose event center in San Francisco that meets NBA requirements for sports facilities, can be used year-round for sporting events and entertainment and convention purposes with events ranging in capacity from approximately 3,000-18,500, and expands opportunities for the City's tourist, hotel and convention business.
- Provide sufficient complementary mixed-use development, including office and retail uses, to create a lively local and regional visitor serving destination that is active year-round, promotes visitor activity and interest during times when the event center is not in use, provides amenities to visitors of the event center as well as the surrounding neighborhood, and allows for a financially feasible project.
- Develop a project that meets high-quality urban design and high-level sustainability standards.

1 [LC-ALT-1] cont.

O-MBA14B2

- Optimize public transit, pedestrian and bicycle access to the site by locating the project within walking distance to local and regional transit hubs, and adjacent to routes that provide safe and convenient access for pedestrians and bicycles.

- Provide adequate parking and vehicular access that meets NBA and project sponsor's reasonable needs for the event center and serves the needs of project visitors and employees, while encouraging the use of transit, bicycle, and other alternative modes of transportation.

- Provide the City with a world class performing arts venue of sufficient size to attract those events which currently bypass San Francisco due to lack of a world class 3,000-4,000 seat facility.

- Develop a project that promotes environmental sustainability, transportation efficiency, greenhouse gas reduction, stormwater management using green technology, and job creation consistent with the objectives of the California Jobs and Economic Improvement Through Environmental Leadership Act (AB 900), as amended.

1 [LC-ALT-1] cont.

(DSEIR, pp. 3-5 to 3-6.) While the DSEIR also lists ancillary objectives solely relevant to the deeply-flawed Mission Bay site, they are not fundamental to the arena project. Only the objectives listed above are fundamental to the project, as they have been constant since the Warriors' prior selection of the now-abandoned Piers 30-32 site.

Reduced Impacts at Pier 80 Site. The key question and first step in DSEIR analysis of the Pier 80 site must be "whether any of the significant effects of the project would be avoided or substantially lessened" at that location. (*See* Pub. Resources Code, §§ 21002, 21081.) A wide range of significant impacts of the Warriors' Event Center will be eliminated or reduced at the ample Pier 80 site, without compromising any fundamental project objectives.

O-MBA14B2

For example:

- Project-induced increases in traffic impacts would not combine with the San Francisco Giants' baseball game traffic to the same extreme extent.

- Event Center traffic would not interfere with patients' emergency access to UCSF Medical Center.

- Land use impacts due to the Event Center's incompatibility with long-standing plans for Mission Bay as a hub for biosciences would be avoided.

- Vibrations affecting sensitive research equipment at UCSF would be avoided.

1 [LC-ALT-1] cont.

As repeatedly held by the California Supreme Court, project alternatives form the core of every EIR. Objective analysis of the feasibility of siting the Warriors Event Center near Pier 80 must now occur in CEQA's prescribed public process to foster informed decision-making and public participation. Otherwise, the DSEIR will not yet have provided a good-faith effort at full disclosure of a range of reasonable project alternatives, as mandated by CEQA Guidelines section 15126.6, subd.(a) and interpreted by a substantial body of case law.

Thank you for your attention to this request. Please advise whether the OCII will agree to revise and recirculate the DSEIR to study the Pier 80 site.

Sincerely yours,

Susan Brandt-Hawley
for the Mission Bay Alliance

1. ***Opponents of Warriors arena in Mission Bay want project moved south***
   By Laura Dudnick, SF Examiner – September 28, 2015

2. ***Bay Bridge builder in black despite penalties***
   By Martier & Ross, San Francisco Chronicle – September 25, 2015

1. ***Opponents of Warriors arena in Mission Bay want project moved south***
   By Laura Dudnick, SF Examiner – September 28, 2015

Opponents of a plan to build a Golden State Warriors arena in Mission Bay have identified an alternative location for the project and are urging city and team leaders to consider the site.
The 21-acre site near Pier 80 in the Bayview has been proposed by the Mission Bay Alliance, a group led by former UC San Francisco officials who argue the arena in Mission Bay will create detrimental traffic congestion and permanently scar the neighborhood.

The suggested site, more than half of which is owned by The City, is 11 blocks south of where the arena is currently planned on about 11 acres of waterfront land at Third and 16th streets, across from UCSF's new hospitals and research centers.

It marks the first specific alternative site proposed by the Mission Bay Alliance, the primary opposition to the project in Mission Bay. UCSF nurses have also expressed concerns with building an arena adjacent to the new hospitals, but UCSF leaders announced support for the project over the summer, contingent on a plan for managing traffic in the long term.

In the draft environmental report, city planners outlined nearly $40 million in transit improvements slated for Mission Bay that are aimed to curb traffic congestion created in part by the proposed arena. That includes purchasing new Muni light-rail vehicles, allowing crossover tracks for the vehicles to pass on the T-Third Street line, and extending the adjacent Muni platform near the arena.

But the alliance remains vehemently against the arena in Mission Bay and noted numerous "fatal flaws" in building a multi-use facility across from UCSF Medical Center, including noise, air pollution and traffic.

The alliance met with the Warriors on Sept. 22 and Mayor Ed Lee the previous week to share the proposed alternative, said Sam Singer, a spokesman for the alliance.

"They listened politely and with interest to the information we provided them about the alternative location near Pier 80," Singer said.

However, it appears that Lee still favors the Mission Bay site.

"The mayor is focused on the site that has been discussed with the community for more than a year and he joins many, many others in strong support for an arena in Mission Bay, where it will be a great neighbor and partner to UCSF and a great asset to the community," Christine Falvey, the mayor's spokeswoman, wrote in an email to the San Francisco Examiner.

PJ Johnston, a spokesman for the Warriors, declined to comment on any location other than the current site in Mission Bay, but said that spot has been thoroughly vetted.

O-MBA14B2

"The opponents want the Mission Bay property for themselves, but just because they have a lot of money doesn't mean they can grab the land or highjack the public process," Johnston wrote in an email to the San Francisco Examiner.

"The Warriors, The City and the community have been engaged in a public planning process for more than a year on the Mission Bay location. San Franciscans are overwhelming supportive of the plan," he added.

The Mission Bay Alliance plans to formally submit its proposed Bayview site to The City as part of the environmental impact review process, Singer said. The draft EIR was released in June, and a final draft is expected this fall.

"The Warriors were in a rush to find a new site when they realized…The Embarcadero wasn't going to work out. They grabbed the first piece of property without doing the appropriate due diligence," said Singer, referring to the previous controversial effort to build the arena at Piers 30-32 before the Warriors purchased the current Mission Bay plot from Salesforce.com.

Singer touted advantages of the site near Pier 80, including additional and less expensive parking. The site borders Interstate Highway 280 and is just off the Third Street Muni lightrail route. There are parcels on the site – mostly warehouses and for industrial uses – that are privately owned, but Singer said the owners contacted by a real estate representative of the alliance have indicated they might be interested in selling their property.

"You couldn't ask for a better location if you were the Warriors," Singer said.

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2. ***Bay Bridge builder in black despite penalties***
   By Martier & Ross, San Francisco Chronicle – September 25, 2015

Even after being penalized millions of dollars for problem-plagued work, the lead builder of the new Bay Bridge eastern span is walking away a financial winner — thanks to its rush job to get the bridge open by Labor Day weekend in 2013.

The Bay Bridge project's oversight committee decided last week that the lead contractor, the joint venture American Bridge/Fluor, was partly to blame for the construction fiasco that resulted in 32 high-strength steel rods snapping on the span's seismic stabilizers. Throw in a few bucks for the continuing troubles with rods at the base of the signature tower, and American Bridge/Fluor was docked a cool $11 million.

But don't feel too bad — when the bridge opened to traffic on time in September 2013, thanks to a last-minute sprint, American Bridge/Fluor was rewarded with almost $49 million in bonuses.

By our math, even with the penalties, that still puts the bridge's builder ahead by $38 million.

"The incentive was to get the bridge built by Labor Day — that was the deal written into the contract, and they met it," said Randy Rentschler, spokesman for the Metropolitan Transportation Commission.

"The question of construction defects became a separate issue," he said, "and now that subject has been dealt with — like it or not."

Arena buzz: The group opposing the Golden State Warriors' planned Mission Bay arena is pushing the team to consider yet another site — an industrial patchwork 11 blocks south of the current proposed spot.

The Warriors already shifted plans once, transplanting their dreams from Piers 30-32 to a spot next to UCSF's Mission Bay medical center. Now the Mission Bay Alliance — a group of deep-pocketed UCSF donors who want the proposed arena site set aside for the medical center's expansion — says there's a much better spot.

It's a 20-acre mix of warehouses, lumberyards and empty lots off Cesar Chavez Street, some of which is already owned by the city. It's next to Muni's Third Street light-rail line and Interstate 280, and about a third of a mile from Highway 101.

"It's tailor-made for the Warriors, right on a Muni rail line, and there is ample parking," said Mission Bay Alliance spokesman Sam Singer.

The group has met privately with both Mayor Ed Lee and the Warriors' lawyers to discuss the idea. We're told the alliance members — led by mega-rich UCSF donors Bill Oberndorf and Sandy Robertson — even offered to help finance the land purchase.

The Warriors, however, are showing little interest.

"The Warriors are focused on the site in Mission Bay," said team spokesman P.J. Johnston. "The public clearly supports this location."

He also accused the alliance of playing politics.

"The oldest play in the book is to say, 'We love a project — we just want it at a different location,'" Johnston said.

Lee's office was equally blunt, sending us a statement Friday saying alliance members "have no interest in being reasonable or working with the city to resolve what they say their concerns are."

The group's strategy, the statement said, is "to bring in the high-priced lawyers and litigate."

A-ticket: Leading the minority in the House may not be a dream job, but there was one major perk last week: the number of tickets available to hand out for Pope Francis' speech to Congress.

While most lawmakers had one prized ticket to give out, Rep. Nancy Pelosi, D-San Francisco, had at least eight.

Her guests included such heavyweights as:
•Salesforce chief and big-time charity and political donor Marc Benioff and his wife, Lynne. Benioff is active in San Francisco's Catholic community and a close friend of Archbishop Salvatore Cordileone, whose anti-same-sex marriage campaigning has raised hackles among liberal parishioners.

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•Megabucks environmentalist and possible gubernatorial contender Tom Steyer and his wife, Kat Taylor.

•Service Employees International Union president Mary Kay Henry, whose union represents 1.5 million public employees and health care workers nationwide.

•Matilda Cuomo, widow of New York Gov. Mario Cuomo.

•Plus Pelosi's brother, former Baltimore Mayor Thomas D'Alesandro III, and the congresswoman's husband, Paul Pelosi.

Sen. Dianne Feinstein gave her ticket to Democratic donor Elizabeth Bagley, who is active in children's issues.

Oakland Democratic Rep. Barbara Lee's ticket went to the Rev. Jay Matthews, rector at the Cathedral of Christ the Light in Oakland, while Rep. Mark DeSaulnier, D-Concord, gave his to St. Mary's College President James Donahue.

Rep. Jackie Speier, D-Hillsborough, brought her son's godmother, Katy Lawson, to the event and rounded up about 120 tickets for congressional janitors, police officers and other support staff.

Deja vu: The design hasn't change much, but George Lucas is scaling back the Chicago version of his Museum of Narrative Art.

Chicago Tribune architecture critic Blair Kamin is calling it "the Weight Watchers version of Jabba the Hutt."

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UCSF
University of California
San Francisco

September 22, 2015

The Honorable Edwin M. Lee
City Hall, Room 200
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102

Re: Golden State Warriors Arena and Events Center in Mission Bay

Dear Mayor Lee,

We write as faculty members at UCSF who are also members of the US National Academy of Sciences. Many of us either are, or have previously been, leaders on this Campus. We have seen this University rise to true excellence over the course of the past 40 years, and we look forward to an even greater future for UCSF and the exciting private biotech and medical organizations that it has attracted to Mission Bay. But we are seriously concerned that this future is threatened by the plan to construct a very large sports, entertainment, and event arena in our midst.

As you know, the plan for Mission Bay approved by the Board of Supervisors (October 1998) states, as one of the major objectives of this visionary project:

> Facilitating emerging commercial and industrial sectors including those expected to emerge or expand due to the proximity to the new UCSF site, such as research and development, bio-technical research, telecommunications, business service, multi-media services, and related light industrial…

And indeed, Mission Bay has rapidly become one of the most prominent academic-industry biotechnology/medical complexes in the world. But we cannot stop here: we face increasing competition from other rapidly growing complexes of this type, both in the US and abroad. It will be critical to keep moving aggressively forward, if we are to continue to attract the very best talent – both academic and private sector – to San Francisco.

It is absolutely clear to us that the planned new Golden State Warriors Arena and Events Center in Mission Bay would severely degrade the environment for the many thousands of researchers and private sector biomedical scientists who come to work at Mission Bay each day. It would also curtail the beehive-like, daily exchanges of personnel – from the South Bay and elsewhere – on which the success of the Mission Bay biomedical complex depends. Our major fear is that the Mission Bay site will lose its appeal – not only for the new biomedical enterprises that the city would like to attract here, but also for most of its current occupants. The result could critically harm not only UCSF, but also the enormously promising, larger set of biomedical enterprises that currently promises to make San Francisco the envy of the world.

Much attention has been properly focused on how traffic gridlock caused by the new stadium would affect access to the three new UCSF hospitals that are immediately adjacent to the site, one of which houses one of only two Children's Emergency

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rooms in San Francisco. It is unavoidable that terrible, and possibly even life-threatening, traffic congestion will be associated with the planned complex, given that it is intended to be the site of some 220 events per year, held both in the evening and during the day (*New York Times*, September 6, 2015; business section, pages 1, 4 and 5). Many of us have experienced the hours-long gridlock that paralyzes all Mission Bay streets before and after San Francisco Giants home games. The absolute paralysis that it creates is already a non-trivial problem, which the planned stadium promises to both greatly expand and intensify.

The presence of the 41,000-seat AT&T Park less than a mile (a 15-minute walk) from UCSF Mission Bay has not been sufficiently factored into the plans to build the Warriors' huge new sports/entertainment complex. The ballpark already significantly impacts life and work at Mission Bay, with nearly 50 San Francisco Giants home weekday games per season. Due to these events, it can take cars and UCSF shuttle buses over an hour to exit from the UCSF parking lot onto the streets, and a 20-minute trip may require two hours.

The widespread traffic impact of AT&T Park games is noted on the website for the San Francisco Municipal Transportation Agency (SFMTA):

> "Motorists are advised to avoid the increased congestion in downtown San Francisco related to these special events and advises commuters to use transit, taxis, bicycles or walk and to avoid using the Bay Bridge in the two hours before or after these games. … As a reminder to fans, in order to reduce congestion on city streets after all events at AT&T Park, the SFMTA will close eastbound King Street between 3rd and 2nd streets from the seventh inning until after the post-game traffic has died down. Additionally, the northbound portion of the 4th Street (Peter R. Maloney) Bridge will be closed to all traffic except streetcars, buses, taxis and bicycles during the post-game period. (https://www.sfmta.com/news/press-releases/sfmta-weekend-transit-and-traffic-advisory)

Adding an 18,500-seat Warriors complex on top of what is already a transportation mess is asking for disaster. We are highly skeptical of any plan that proposes to segment traffic by restricting 4th street and other routes for "UCSF business only," since those of us at Mission Bay have experienced the unruly behavior of frustrated drivers stuck for long times in traffic jams. In fact, there is no believable transportation solution for two very large complexes placed in such close proximity at Mission Bay.

Imagine dropping a 41,000-seat stadium anywhere within a 1-mile radius of San Francisco City Hall, and then tripling the capacity of Bill Graham Civic Auditorium. It would make no sense, for the same reason that it makes no sense to squeeze the planned Warriors facility into the Mission Bay neighborhood. The resulting perfect storm of traffic would make it miserable for both the existing neighborhood and for sports fans – in addition to threatening the entire future of UCSF as the center of a world-class academic/ biotech/medical complex.

In summary, we urge you and the city to reconsider the wisdom of proceeding with

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current construction plans.

Sincerely yours,

Bruce Alberts, Chancellor's Leadership Chair in Biochemistry and Biophysics for Science and Education
Elizabeth Blackburn, Professor of Biochemistry and Biophysics, and Nobel laureate
James Cleaver, Professor of Dermatology and Pharmaceutical Chemistry
John A. Clements, Professor of Pediatrics and Julius H. Comroe Professor of Pulmonary Biology, Emeritus
Robert Fletterick, Professor of Biochemistry, Pharmaceutical Chemistry, and Cellular and Molecular Pharmacology
Carol Gross, Professor of Microbiology
Christine Guthrie, Professor of Biochemistry and Biophysics
Lily Jan, Professor of Physiology, Biochemistry and Biophysics
Yuh-Nung Jan, Professor of Physiology
Alexander Johnson, Professor of Microbiology and Immunology, and Biochemistry and Biophysics
Cynthia Kenyon, Emeritus Professor, UCSF, and Vice President, Aging Research, Calico Life Sciences
Gail Martin, Professor Emerita, Department of Anatomy
Frank McCormick, Professor Emeritus, UCSF Helen Diller Family Comprehensive Cancer Center**,** David A. Wood Distinguished Professorship of Tumor Biology and Cancer Research
Ira Mellman, Professor (Adjunct) of Biochemistry and Biophysics
William J. Rutter, Chairman Emeritus, Department of Biochemistry, and Chairman, Synergenics LLC
John Sedat, Professor Emeritus, Department of Biochemistry & Biophysics
Michael Stryker, William Francis Ganong Professor of Physiology
Peter Walter, Professor of Biochemistry and Biophysics
Arthur Weiss, Professor of Medicine, and of Microbiology and Immunology
Zena Werb, Professor of Anatomy

Cc: Tiffany Bohee

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SOLURI MESERVE
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1010 F Street, Suite 100 · Sacramento, CA 95814

October 20, 2015

SENT BY U.S. MAIL AND EMAIL (warriors@sfgov.org**)**

Tiffany Bohee
c/o Brett Bollinger
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

RE: Supplemental Comments on Environmental Review for Warriors Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 – Updated Soil and Screening Levels

Dear Ms. Bohee:

This firm represents the Mission Bay Alliance ("MBA") with respect to the Warriors Event Center Project ("Project"). These comments supplement MBA's prior comments on the Draft Subsequent Environmental Impact Report for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("DSEIR") and associated environmental review for the Project.

As described in the July 26, 2015, comment letter submitted by this office regarding the DSEIR ("SM Law Comments"), hazards and hazardous materials associated with the Project site are inadequately analyzed in the 1998 Supplemental Environmental Impact Report prepared for the Mission Bay Redevelopment Plan ("1998 SEIR"). (See SM Law Comments, pp. 7-13 and BSK HazMat report, attached as Exhibit B to SM Law Comments.) In reliance on this flawed and outdated analysis, the DSEIR contains no analysis whatsoever of hazards. In addition, the 1999 Risk Management Plan, and the 2006 Revised Risk Management Plan for the site, referenced in the Initial Study prepared for the Project, also rely on outdated methodologies for identifying human health risks associated with exposure to hazards that could occur during construction and operation of the Project. 1 [LC-HAZ-1]

In order to demonstrate the inapplicability and ineffectiveness of the screening levels relied upon for the Project, the attached report prepared by Damian Applied Toxicology, LLC: (1) provides updated screening levels for the constituents at the site;

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(2) provides newly applicable screening levels that did not exist at the time of the 1998 EIR; (3) compares the new and old screening levels; and (4) compares the updated screening levels to the most recent site investigation data from the Project site. The Damian Report shows that the prior screening levels are completely outdated and do not protect public health. Using updated screening levels that address a wide range of relevant potential receptors and exposure pathways, the Damian Report concludes that 19 chemicals (18 in soil and 1 in groundwater) that were detected in the 2015 Phase II investigation at the site exceed at least one screening level. Indeed, in some instances, sampled soil exceeded screening levels by more than 10 times.

1 [LC-HAZ-1] cont.

As the DSEIR completely fails to address these potentially significant hazards and hazardous materials impacts, it must be revised and re-circulated for public review prior to any action being taken on the Project. Thank you for considering these supplemental comments. Please feel free to contact my office with any questions.

Very truly yours,

SOLURI MESERVE
A Law Corporation

By: Osha R. Meserve

ORM/mre

Attachment: Sept. 28, 2015 Report prepared by Damian Applied Toxicology, LLC

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DAMIAN APPLIED TOXICOLOGY, LLC
Advanced Assessment of Chemical Risks to Health and the Environment

www.appliedtox.com

Octoboer 20, 2015

Ms. Osha Meserve
Soluri Meserve
1010 F Street, Suite 100
Sacramento, California 95814

Subject: Updated Soil and Groundwater Screening Levels for the Golden State Warriors Arena Construction Project in the Mission Bay South Redevelopment Plan Area, San Francisco

Dear Ms. Meserve:

Your office requested that **Damian Applied Toxicology, LLC (DAT)** develop updated soil and groundwater screening levels for the Golden State Warriors Arena Construction Project and compare those values to both the previous screening levels and site investigation data presented in the *Phase II Environmental Site Assessment* (Phase II) (Langan Treadwell and Rollo [LTR], 2015).

Screening levels are levels of a chemical in environmental media, for example soil or groundwater, which are considered safe for long-term exposure. Screening levels are developed based on the environmental media of interest, the exposed population of interest (e.g. residents or commercial workers), and the relevant exposure pathway (e.g. drinking water for groundwater or dermal contact with soil). Screening levels may be developed to protect human health or ecological receptors (e.g. aquatic and terrestrial wildlife). In most cases, regulatory agencies have already developed screening levels for certain chemicals in soil or water. However, in some cases (e.g. construction workers) no such screening levels have been developed and a risk assessor must develop new screening levels using scientifically-defensible methods and assumptions. Typically, such methods and assumptions are obtained from the United States Environmental Protection Agency (USEPA), the state agency responsible for review of health risk assessments, or a combination of the two.

1 [LC-HAZ-1] cont.

The previous screening levels were originally presented in the *Risk Management Plan, Mission Bay Area, San Francisco, California* (RMP) (ENVIRON, 1999), and were referenced without revision in the *Revised Risk Management Plan* (BBL, 2006). Risk-based screening levels change fairly rapidly over time due to new developments in the toxicological science underlying such levels, as well as state and federal risk assessment policy changes. In addition, in most cases, screening levels become more stringent over time, not less so. Thus, in the 16 years since the 1999 RMP was prepared many of the originally proposed screening levels have become obsolete and are no longer adequately protective. Finally, the original screening levels did not address construction workers, exposure of indoor workers to volatile chemicals via vapor intrusion, or ecological risks. The purposes of this report therefore, are: 1) to update the 1999 screening levels, 2) provide new screening levels to address ecorisk, construction workers and vapor intrusion, 3) compare the new screening levels to the previous screening levels, and 4) compare the new screening levels to the most recent site investigation data as presented in the Phase II report (LTR, 2015). The following sets of screening levels were therefore developed for all of the chemicals originally listed in the 1999 RMP (as shown in Appendices B and E from that report):

- Soil screening levels for off-site (nearby) residents and on-site commercial workers
- Soil screening levels for on-site construction workers

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- Soil screening levels to protect ecological receptors (terrestrial wildlife)
- Groundwater screening levels for drinking water
- Groundwater screening levels to protect indoor workers from vapor intrusion
- Groundwater screening levels to protect aquatic life

Note that since no residential development is planned for the arena project site, screening levels were not developed for on-site residential use.

SCREENING LEVEL DEVELOPMENT

Details regarding the development of the screening levels are provided below.

Soil Screening Levels for Off-Site Residents and On-Site Commercial Workers

Off-site residents located close to the site were identified as a potential receptor population in the 1999 RMP. This receptor would not have direct contact with site soils by either inadvertent ingestion or dermal contact but may be exposed to chemicals released into the air either by resuspension of soil particulates (for non-volatile chemicals such as metals) or by volatilization (volatile chemicals such as benzene). On-site commercial workers, on the other hand, would be directly exposed to site soils by soil ingestion, dermal contact and inhalation.

Updated soil screening levels for these receptors were obtained primarily from the latest version of the United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) (USEPA, 2015). However, if a corresponding Department of Toxic Substance Control (DTSC) value was available for a particular chemical that value was used preferentially (DTSC, 2015). For the off-site resident, exposed only via inhalation, the Inhalation Screening Level was used. It is important to note that both children and adults are taken into consideration in the development of the residential screening levels and the most stringent value protective of both the adult and child was used. For the on-site commercial worker, the screening level reflecting all soil exposure pathways was used. For carcinogenic chemicals the lower of the cancer or non-cancer risk-based value was used. The resulting values for non-volatile chemicals are shown in Table 1. Table 1 shows that many of the updated screening levels (particularly for the on-site commercial worker) are well below (more stringent than) the older 1999 screening levels (as indicated in yellow highlight).

It should be noted that the screening level for arsenic (12 mg/kg) is not health risk-based. The value of 12 mg/kg is based on the upper bound of naturally occurring arsenic in California (Bradford et al., 1996). By convention in California, a background-based value for arsenic is normally used as the screening level for arsenic at contaminated sites instead of a health risk-based value (California Environmental Protection Agency [CalEPA], 2005). This is because a strictly health risk-based value would be well below naturally occurring background levels.

The screening level for lead for on-site commercial workers is the California Human Health Screening Level (CHHSL) of 320 mg/kg (Office of Environmental Health Hazard Assessment [OEHHA], 2009). The same value is also protective of off-site residents as the contribution of inhalation exposure to lead is negligible relative to soil ingestion (DTSC, 2011), and off-site residents would only be exposed via inhalation.

1 [LC-HAZ-1] cont.

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Updated screening levels for volatile chemicals in soil are shown in Table 2. Table 2 shows that virtually all of the updated screening levels for both off-site resident and on-site commercial worker are well below the older 1999 screening levels (as indicated in yellow highlight).

Soil Screening Levels for On-Site Construction Workers

The 1999 RMP did not address construction workers. However, construction workers have higher levels of exposure to soils than either residents or commercial workers. Therefore, screening levels for this receptor population are warranted.

Neither USEPA nor any California regulatory agency has developed risk-based screening levels for construction workers. However, USEPA has established calculation methods for developing such levels (USEPA, 2002 and 2015), and the California DTSC has established default exposure parameters for construction worker risk assessment that can be used in the USEPA equations. The soil construction worker equations presented in USEPA (2015) were used to calculate soil screening levels for the construction worker. Screening levels were calculated assuming worker exposure via soil ingestion, dermal contact with soil, and inhalation. The screening levels were calculated using the DTSC exposure parameters shown in Table 3. Toxicity criteria used in the calculations were obtained first from DTSC (2015), and if not available from DTSC (2015), from USEPA (2015). For carcinogenic chemicals the lower of the cancer or non-cancer risk-based value is shown as the final recommended screening value. The resulting screening levels for non-volatile chemicals are shown in Table 4. Note that the screening level for arsenic was assumed to be 12 mg/kg, as discussed previously. The screening level for lead for on-site construction workers was assumed to be the commercial/industrial worker CHHSL of 320 mg/kg (OEHHA, 2009). Screening levels for volatile chemicals are shown in Table 5.

1 [LC-HAZ-1] cont.

Soil Screening Levels for Protection of Ecological Receptors

The 1999 RMP did not include any ecorisk-based soil screening levels, therefore, ecorisk-based soil screening levels for the protection of terrestrial wildlife were obtained from key USEPA references. Available screening levels for non-volatile chemicals and volatile chemicals are shown in Tables 6 and 7, respectively.

Groundwater Screening Levels Based on Drinking Water Exposure

Groundwater screening levels based on human drinking water exposure were considered to be the State of California enforceable drinking water standard, that is, the Maximum Contaminant Level (MCL) (CalEPA, 2015). However, if an MCL was not available for a particular chemical the USEPA RSL for tapwater ingestion was used (USEPA, 2015). The updated groundwater screening levels are shown in Table 8.

Groundwater Screening Levels to Protect Indoor Workers from Vapor Intrusion

The 1999 RMP did not include screening levels to protect indoor workers from vapor intrusion due to volatile chemicals in groundwater. The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), as part of its Environmental Screening Level (ESL) program, has developed groundwater screening levels to protect workers from this type of chemical exposure (SFBRWQCB, 2013). These values are shown in Table 9.

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Groundwater Screening Levels for the Protection of Aquatic Life

The 1999 RMP also did not provide screening levels for the protection of aquatic life from contaminated groundwater. There is a potential for groundwater on the site to daylight or infiltrate into freshwater or estuarine wetlands. Therefore, groundwater screening levels protective of aquatic life were obtained for each of these aquatic habitat types from SFBRWQCB (2013). These values are shown in Table 10.

COMPARISON OF PHASE II DATA TO UPDATED SCREENING LEVELS

Table 11 compares the updated soil screening levels to the maximum soil concentration reported in the Phase II (LTR, 2015). In the Phase II, soils were analyzed in some cases to a maximum depth of 31 ft below ground surface (bgs), but in all cases to at least 10 ft. However, with the exception of barium, the maximum concentrations were all detected within 10 ft bgs. The maximum detected concentration of barium was found at 20 ft; however, this value did not exceed any screening level.

Only those chemicals exceeding at least one of the updated screening levels are shown. Table 11 shows that 18 chemicals exceed at least one of the new screening levels and many of these chemicals exceed more than one screening value. Chemicals exceeding at least two screening levels include arsenic, benzo(a)pyrene, cadmium, lead, and nickel. The greatest exceedances of a screening level were due to lead and nickel. Arsenic was only slightly exceeded (maximum of 13 mg/kg compared to a screening level of 12 mg/kg).

Table 12 shows those chemicals which exceed at least one of the updated groundwater screening levels. Based on the Phase II data, only benzene exceeded a groundwater screening level, and this was based on drinking water exposure.

In summary, using updated screening levels that address a wide range of relevant potential receptors and exposure pathways, 19 chemicals (18 in soil and 1 in groundwater) detected in the Phase II exceed at least one screening level. Of particular importance are lead and nickel due to the significant exceedances of these two chemicals.

1 [LC-HAZ-1] cont.

CLOSING

Thank you for this opportunity to provide you with our services. Please don't hesitate to call or email should you have any questions or comments regarding this report.

Sincerely,

Paul Damian PhD, MPH, DABT
Principal
Board Certified Toxicologist
DAMIAN APPLIED TOXICOLOGY, LLC
530-220-0454
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Table 1

Updated and Previous Health Risk-Based Soil Screening Levels for the Off-Site Resident and On-Site Commercial Worker Non-Volatile Chemicals

Chemical	Screening Level (mg/kg)			
	Off-Site (Nearby) Resident Updated[1]	Off-Site (Nearby) Resident Previous[2]	On-Site Commercial Worker Updated[1]	On-Site Commercial Worker Previous[2]
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	NA	1,880,000	45,000	69,000
Acenaphthylene	NA	1,250,000	NA	46,000
Anthracene	NA	9,390,000	230,000	347,000
Benz(a)anthracene	41	3,448	2.9	27
Benzo(g,h,i)perylene	NA	1,250,000	NA	46,000
Benzo(a)pyrene	1,300	345	0.29	2.7
Benzo(b)fluoranthene	13,000	3,448	2.9	27
Benzo(k)fluoranthene[3]	34,700	3,448	1.3	27
Chrysene[3]	1,680	34,000	13	272
Dibenz(a,h)anthracene	1,100	328	0.29	7.9
Fluoranthene	NA	1,250,000	30,000	46,000
Fluorene	NA	1,250,000	30,000	46,000
Indeno(1,2,3-cd)pyrene	13,000	3,448	2.9	27
2-Methylnaphthalene	NA	1,250,000	3,000	46,000
Naphthalene	3.8	1,250,000	17	46,000
Phenanthrene	NA	9,390,000	NA	347,000
Pyrene	NA	939,000	23,000	35,000
Polychlorinated Biphenyls				
(as Aroclor 1254)	4.1	NA	0.97	NA
Petroleum Hydrocarbons[4]				
TPH-Gasoline	NA	1,720,000	500	74,000
TPH-Diesel	NA	16,000,000	110	686,000
TPH-Motor Oil	NA	126,000,000	500	5,420,000
Metals				
Antimony (as trioxide)	280,000	12,514	1,200,000	764
Arsenic[5]	1,160	112	12	29
Barium	710,000	4,380	220,000	12,949
Beryllium[3]	1,590	160	21	12
Cadmium[3]	909	90	5.7	191
Chromium (as trivalent)[3]	NA	31,285,714	270,000	1,910,423
Chromium (as hexavalent)	16	2.6	6.3	5.4
Cobalt	420	9,073	350	23,640
Copper	NA	1,157,571	47,000	70,686
Lead[5]	320	10,748	320	4,203
Mercury[3] (as elemental)	0.96	2,691	3.9	164
Molybdenum	NA	156,429	5,800	9,552
Nickel (as soluble salts)	14,700	1,478	1,500	3,145
Selenium	28,000,000	156,429	5,800	9,552
Silver	NA	156,429	5,800	9,552
Thallium (as soluble salts)	NA	2,503	12	153
Vanadium[3]	142,000	219,000	1,500	13,373
Zinc	NA	9,385,714	350,000	573,127

Notes:
[1]All values obtained from the USEPA Regional Screening Levels (USEPA, 2015) unless otherwise noted. Values for off-site resident reflect inhalation exposure only. Values for on-site commercial worker reflect exposure from soil ingestion, inhalation and dermal contact.
[2]Values obtained from ENVIRON (1999).
[3]Values obtained from DTSC (2015).
[4]Values are Environmental Screening Levels (ESLs) obtained from SFBRWQCB (2013).
[5]See text.
NA = Not available.
Yellow highlight indicates that the updated screening level is lower (more stringent) than the corresponding ENVIRON (1999) screening level.

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Table 2

Updated and Previous Health Risk-Based Soil Screening Levels for the Off-Site Resident and On-Site Commercial Worker Volatile Chemicals

Chemical	Screening Level (mg/kg)			
	Off-Site (Nearby) Resident Updated[1]	Off-Site (Nearby) Resident Previous[2]	On-Site Commercial Worker Updated[1]	On-Site Commercial Worker Previous[2]
Acetone	440,000	71,000	670,000	330,000
Benzene[3]	0.35	63	1.4	77
2-Butanone (Methyl ethyl ketone)	64,000	180,000	190,000	800,000
Carbon disulfide	850	11,000	3,500	54,000
Chlorobenzene	340	1,100	1,300	5,600
Chloroform	0.32	340	1.4	410
1,1-Dichloroethane[3]	3.7	1,100	16	1,400
1,2-Dichloroethylene (cis)[3]	21	540	86	2,700
1,2-Dichloroethylene (trans)[3]	212	1,100	860	5,500
Ethylbenzene	6.4	16,000	25	78,000
2-Hexanone (Methyl butyl ketone)	420	370	1,300	1,800
Methylene chloride[3]	6.2	1,900	24	2,300
Styrene	9,700	19,000	35,000	81,000
Tetrachloroethene[3]	1.1	300	2.7	360
Toluene[3]	1,360	6,200	5,400	31,000
1,1,1-Trichloroethane[3]	1,740	15,000	7,300	77,000
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	1,600,000	NA	8,000,000
Trichloroethylene	1.1	630	6.0	760
Trichlorofluoromethane	760	16,000	3,100	80,000
Vinyl chloride[3]	0.03	23	0.15	28
Xylenes	570	110,000	2,400	550,000

Notes:
[1]All values obtained from the USEPA Regional Screening Levels (USEPA, 2015) unless otherwise indicated. Values for off-site resident reflect inhalation exposure only. Values for on-site commercial worker reflect exposure from soil ingestion, inhalation and dermal contact.
[2]Values obtained from ENVIRON (1999).
[3]Updated values obtained from DTSC (2015).
Yellow highlight indicates that the updated screening level is lower (more stringent) than the corresponding ENVIRON (1999) screening level.

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Table 3

Exposure Parameters Used to Calculate Soil Screening Levels for Construction Workers

Exposure Parameter	Value
Body weight (kg)	80
Exposure duration (years)	1
Averaging time (days)	
Non-carcinogenic chemicals	365
Carcinogenic chemicals	25,550
Exposure frequency (days/year)	250
Soil ingestion rate (mg/day)	330
Particulate emission factor (m^3/kg)	1.00E+06
Skin surface area (cm^2)	6,032
Soil adherence factor (mg/cm^2)	0.8

Source: DTSC (2014).

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Table 4

Soil Screening Levels for the On-Site Construction Worker
Non-Volatile Chemicals

Chemical	Non-Cancer Toxicity Criteria[1]		Cancer Toxicity Criteria[1]		ABS_{GI} (unitless)	ABS_D (unitless)	Non-Cancer Screening Level (mg/kg)	Cancer Screening Level (mg/kg)	Final (Lowest) Screening Level (mg/kg)
	RfD_o (mg/kg-day)	RfC (mg/m^3)	CSF_o $(mg/kg\text{-}day)^{-1}$	IUR $(\mu g/m^3)^{-1}$					
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	6.0E-02	NA	NA	NA	1	0.13	7.3E+03	NA	7.3E+03
Acenaphthylene	NA	NA	NA	NA	1	0.13	NA	NA	NA
Anthracene	3.0E-01	NA	NA	NA	1	0.13	3.7E+04	NA	3.7E+04
Benz(a)anthracene	NA	NA	7.3E-01	1.1E-04	1	0.13	NA	1.2E+01	1.2E+01
Benzo(g,h,i)perylene	NA	NA	NA	NA	1	0.13	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.3E+00	1.1E-03	1	0.13	NA	1.2E+00	1.2E+00
Benzo(b)fluoranthene	NA	NA	7.3E-01	1.1E-04	1	0.13	NA	1.2E+01	1.2E+01
Benzo(k)fluoranthene[2]	NA	NA	1.2E+00	1.1E-04	1	0.13	NA	7.1E+00	7.1E+00
Chrysene[2]	NA	NA	1.2E-01	1.1E-05	1	0.13	NA	7.1E+01	7.1E+01
Dibenz(a,h)anthracene	NA	NA	7.3E+00	1.2E-03	1	0.13	NA	1.2E+00	1.2E+00
Fluoranthene	4.0E-02	NA	NA	NA	1	0.13	4.9E+03	NA	4.9E+03
Fluorene	4.0E-02	NA	NA	NA	1	0.13	4.9E+03	NA	4.9E+03
Indeno(1,2,3-cd)pyrene	NA	NA	7.3E-01	1.1E-04	1	0.13	NA	1.2E+01	1.2E+01
2-Methylnaphthalene	4.0E-03	NA	NA	NA	1	0.13	4.9E+02	NA	4.9E+02
Naphthalene	2.0E-02	3.0E-03	NA	3.4E-05	1	0.13	2.1E+03	9.0E+06	2.1E+03
Phenanthrene	NA	NA	NA	NA	1	0.13	NA	NA	NA
Pyrene	3.0E-02	NA	NA	NA	1	0.13	3.7E+03	NA	3.7E+03
Polychlorinated Biphenyls									
(as Aroclor 1254)	2.0E-05	NA	2.00E+00	5.70E-04	1	0.14	2.3E+00	4.1E+00	2.3E+00
Metals									
Antimony (as trioxide)	4.0E-04	2.0E-04	NC	NC	0.15	0.01	6.6E+01	NC	6.6E+01
Arsenic[3]									1.2E+01
Barium	2.0E-01	5.0E-04	NC	NC	0.07	0.01	2.0E+03	NC	2.0E+03
Beryllium[2]	2.0E-04	7.0E-06	NC	2.4E-03	0.007	0.01	2.9E+00	1.3E+05	2.9E+00
Cadmium[2]	6.3E-06	1.0E-05	NC	4.2E-03	0.025	0.001	1.4E+00	7.3E+04	1.4E+00
Chromium (trivalent)[2]	1.5E+00	NA	NC	NC	0.013	0.01	4.3E+04	NC	4.3E+04
Chromium (hexavalent)[2]	3.0E-03	1.0E-04	5.0E-01	1.5E-01	0.025	0.01	1.1E+02	4.8E+01	4.8E+01
Cobalt	3.0E-04	6.0E-06	NC	9.0E-03	1.00	0.01	2.0E+01	3.4E+04	2.0E+01
Copper	4.0E-02	NA	NC	NC	1.00	0.01	1.2E+04	NC	1.2E+04
Lead[3]									3.2E+02
Mercury[2] (as elemental)	1.6E-04	3.0E-05	NC	NC	1.00	0.01	3.6E+01	NC	3.6E+01
Molybdenum	5.0E-03	NA	NC	NC	1.00	0.01	1.5E+03	NC	1.5E+03
Nickel (as soluble salts)[2]	1.1E-02	1.4E-05	NC	2.6E-04	0.04	0.01	5.7E+01	1.2E+06	5.7E+01
Selenium	5.0E-03	2.0E-02	NC	NC	1.00	0.01	1.5E+03	NC	1.5E+03
Silver	5.0E-03	NA	NC	NC	0.04	0.01	3.8E+02	NC	3.8E+02
Thallium (as soluble salts)	1.0E-05	NA	NC	NC	1.00	0.01	3.1E+00	NC	3.1E+00
Vanadium[2]	5.0E-03	1.0E-04	NC	NC	0.03	0.01	1.7E+02	NC	1.7E+02
Zinc	3.0E-01	NA	NC	NC	1.00	0.01	9.3E+04	NC	9.3E+04

Notes:
[1]Toxicity criteria obtained from DTSC (2015) first and USEPA (2015) if not available from DTSC (2015).
[2]Toxicity criteria obtained from DTSC (2015).
[3]See text.
RfD_o = Reference Dose for ingestion exposure, RfC = Reference Concentration for inhalation exposure, CSF_o = Cancer Slope Factor for ingestion exposure to carcinogens, IUR = Inhalation Unit Risk for inhalation exposure to carcinogens
ABS_{GI} = Gastrointestinal absorption efficiency. Obtained from USEPA (2015).
ABS_D = Dermal absorption efficiency. Obtained from USEPA (2015) (PAHs) and DTSC (2013) (metals).
NC = Not carcinogenic.
NA = Not available.

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Table 5

Soil Screening Levels for the On-Site Construction Worker
Volatile Chemicals

Chemical	Non-Cancer Toxicity Criteria[1]		Cancer Toxicity Criteria[1]		Volatilization Factor[3] (m^3/kg)	Non-Cancer Screening Level (mg/kg)	Cancer Screening Level (mg/kg)	Final (Lowest) Screening Level (mg/kg)
	RfD_o (mg/kg-day)	RfC (mg/m^3)	CSF_o $(mg/kg\text{-}day)^{-1}$	IUR $(\mu g/m^3)^{-1}$				
Acetone	9.0E-01	3.1E+01	NC	NC	1.4E+04	2.7E+05	NC	2.7E+05
Benzene[2]	4.0E-03	3.0E-03	1.0E-01	2.9E-05	3.5E+03	4.5E+01	2.5E+02	4.5E+01
2-Butanone (Methyl ethyl ketone)	6.0E-01	5.0E+00	NC	NC	1.2E+04	1.2E+05	NC	1.2E+05
Carbon disulfide	1.0E-01	7.0E-01	NC	NC	1.2E+03	3.3E+03	NC	3.3E+03
Chlorobenzene	2.0E-02	5.0E-02	NC	NC	6.5E+03	1.2E+03	NC	1.2E+03
Chloroform	1.0E-02	9.8E-02	3.1E-02	2.3E-05	2.6E+03	8.5E+02	7.8E+02	7.8E+02
1,1-Dichloroethane[2]	2.0E-01	8.0E-01	5.7E-03	1.6E-06	2.1E+03	6.7E+03	4.3E+03	4.3E+03
1,2-Dichloroethylene (cis)[2]	2.0E-03	8.0E-03	NC	NC	2.5E+03	7.8E+01	NC	7.8E+01
1,2-Dichloroethylene (trans)[2]	2.0E-02	8.0E-02	NC	NC	1.7E+03	5.5E+02	NC	5.5E+02
Ethylbenzene	1.0E-01	1.0E+00	1.1E-02	2.5E-06	5.7E+03	1.5E+04	2.2E+03	2.2E+03
2-Hexanone (Methyl butyl ketone)	5.0E-03	3.0E-02	NC	NC	NA	NA	NA	NA
Methylene chloride[2]	6.0E-03	4.0E-01	1.4E-02	1.0E-06	2.2E+03	1.4E+03	1.8E+03	1.4E+03
Styrene	2.0E-01	1.0E+00	NC	NC	9.4E+03	2.6E+04	NC	2.6E+04
Tetrachloroethene[2]	6.0E-03	3.5E-02	5.4E-01	5.9E-06	2.4E+03	3.1E+02	4.6E+01	4.6E+01
Toluene[2]	8.0E-02	3.0E-01	NC	NC	4.3E+03	4.7E+03	NC	4.7E+03
1,1,1-Trichloroethane[2]	2.0E+00	1.0E+00	NC	NC	1.7E+03	7.4E+03	NC	7.4E+03
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	5.0E-04	2.0E-03	4.6E-02	4.1E-06	2.2E+03	1.7E+01	5.4E+02	1.7E+01
Trichlorofluoromethane	3.0E-01	7.0E-01	NC	NC	1.0E+03	3.0E+03	NC	3.0E+03
Vinyl chloride[2]	3.0E-03	1.0E-01	2.7E-01	7.8E-05	9.6E+02	3.0E+02	9.0E+01	9.0E+01
Xylenes	2.0E-01	1.0E-01	NC	NC	6.5E+03	2.7E+03	NC	2.7E+03

Notes:
[1]Toxicity criteria obtained from DTSC (2015) first and USEPA (2015) if not available from DTSC (2015)
[2]Toxicity criteria obtained from DTSC (2015).
[3]Volatilization factors obtained from USEPA (2015).
RfD_o = Reference Dose for ingestion exposure, RfC = Reference Concentration for inhalation exposure, CSF_o = Cancer Slope Factor for ingestion exposure to carcinogens, IUR = Inhalation Unit Risk for inhalation exposure to carcinogens
NC = Not carcinogenic.
NA = Not available.

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Table 6

Ecorisk-Based Soil Screening Levels (Protection of Terrestrial Wildlife)
Non-Volatile Chemicals

Chemical	Soil Screening Level (mg/kg)	Reference
Polycyclic Aromatic Hydrocarbons		
Acenaphthene	20	USEPA (2001)
Acenaphthylene	NA	
Anthracene	0.1	USEPA (2001)
Benz(a)anthracene	NA	
Benzo(g,h,i)perylene	NA	
Benzo(a)pyrene	0.1	USEPA (2001)
Benzo(b)fluoranthene	NA	
Benzo(k)fluoranthene	NA	
Chrysene	NA	
Dibenz(a,h)anthracene	NA	
Fluoranthene	0.1	USEPA (2001)
Fluorene	NA	
Indeno(1,2,3-cd)pyrene	NA	
2-Methylnaphthalene	NA	
Naphthalene	0.1	USEPA (2001)
Phenanthrene	0.1	USEPA (2001)
Pyrene	0.1	USEPA (2001)
Metals		
Antimony	0.27	USEPA (2005a)
Arsenic	43	USEPA (2005b)
Barium	2000	USEPA (2005c)
Beryllium	21	USEPA (2005d)
Cadmium	0.36	USEPA (2005e)
Chromium (trivalent)	26	USEPA (2005f)
Chromium (hexavalent)	130	USEPA (2005f)
Cobalt	120	USEPA (2005g)
Copper	28	USEPA(2007a)
Lead	11	USEPA (2005h)
Mercury	NA	
Molybdenum	NA	
Nickel	130	USEPA (2007b)
Selenium	0.63	USEPA (2007c)
Silver	4.2	USEPA (2006)
Thallium	NA	
Vanadium	7.8	USEPA (2005i)
Zinc	46	USEPA (2007d)
Polychlorinated Biphenyls		
(as total)	0.02	USEPA (2001)
Petroleum Hydrocarbons		
TPH-Gasoline	20	USEPA (2001)
TPH-Diesel	NA	
TPH-Motor Oil	NA	

Notes:
NA = Not available.

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Table 7

Ecorisk-Based Soil Screening Levels (Protection of Terrestrial Wildlife)
Volatile Chemicals

Chemical	Soil Screening Level (mg/kg)	Reference
Acetone	NA	
Benzene	0.05	USEPA (2001)
2-Butanone (Methyl ethyl ketone)	NA	
Carbon disulfide	NA	
Chlorobenzene	0.05	USEPA (2001)
Chloroform	0.001	USEPA (2001)
1,1-Dichloroethane	NA	
1,2-Dichloroethylene (cis)	NA	
1,2-Dichloroethylene (trans)	NA	
Ethylbenzene	0.05	USEPA (2001)
2-Hexanone (Methyl butyl ketone)	NA	
Methylene chloride	2	USEPA (2001)
Styrene	0.1	USEPA (2001)
Tetrachloroethene	0.01	USEPA (2001)
Toluene	0.05	USEPA (2001)
1,1,1-Trichloroethane	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	
Trichloroethylene	0.001	USEPA (2001)
Trichlorofluoromethane	NA	
Vinyl chloride	0.01	USEPA (2001)
Xylenes	0.05	USEPA (2001)

Notes:
NA = Not available.

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Table 8

Human Health-Based Groundwater Screening Levels[1]

Chemical	Groundwater Screening Level (µg/L)	Basis	Reference
Acetone	14,000	USEPA RSL	USEPA (2015)
Benzene	1	CA MCL	CalEPA (2015)
2-Butanone (Methyl ethyl ketone)	5,600	USEPA RSL	USEPA (2015)
Carbon disulfide	810	USEPA RSL	USEPA (2015)
Chlorobenzene	70	CA MCL	CalEPA (2015)
Chloroform	0.22	USEPA RSL	USEPA (2015)
1,1-Dichloroethane	5	CA MCL	CalEPA (2015)
1,2-Dichloroethylene (cis)	6	CA MCL	CalEPA (2015)
1,2-Dichloroethylene (trans)	10	CA MCL	CalEPA (2015)
Ethylbenzene	300	CA MCL	CalEPA (2015)
2-Hexanone (Methyl butyl ketone)	38	USEPA RSL	USEPA (2015)
Methylene chloride	5	CA MCL	CalEPA (2015)
Styrene	100	CA MCL	CalEPA (2015)
Tetrachloroethene	5	CA MCL	CalEPA (2015)
Toluene	150	CA MCL	CalEPA (2015)
1,1,1-Trichloroethane	200	CA MCL	CalEPA (2015)
1,1,2-Trichloro-1,2,2-trifluoroethane	1,200	CA MCL	CalEPA (2015)
Trichloroethylene	5	CA MCL	CalEPA (2015)
Trichlorofluoromethane	150	CA MCL	CalEPA (2015)
Vinyl chloride	0.5	CA MCL	CalEPA (2015)
Xylenes	1,750	CA MCL	CalEPA (2015)

Notes:
[1]Based on drinking water ingestion.
USEPA RSL = USEPA Regional Screening Level for tapwater ingestion.
CA MCL = California Maximum Contaminant Level (drinking water standard).
NA = Not available.

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Table 9

Groundwater Screening Levels to Protect Indoor Workers from Vapor Intrusion

Chemical	Screening Level (µg/L)[1]
Acetone	NA
Benzene	270
2-Butanone (Methyl ethyl ketone)	200,000,000
Carbon disulfide	NA
Chlorobenzene	NA
Chloroform	1,700
1,1-Dichloroethane	NA
1,2-Dichloroethylene (cis)	26,000
1,2-Dichloroethylene (trans)	120,000
Ethylbenzene	3,100
2-Hexanone (Methyl butyl ketone)	NA
Methylene chloride	26,000
Styrene	NA
Tetrachloroethene	640
Toluene	NA
1,1,1-Trichloroethane	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA
Trichloroethylene	1,300
Trichlorofluoromethane	NA
Vinyl chloride	18
Xylenes	NA

[1]Values are Environmental Screening Levels (ESLs) from SFBRWQCB (2013) for fine-coarse mix soil types, commercial/industrial land use.
NA = Not available.

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Table 10

Ecorisk-Based Groundwater Screening Levels (Protection of Aquatic Life)[1]

Chemical	Groundwater Screening Level[2] (µg/L)	
	Freshwater Habitat	Estuary Habitat
Acetone	1,500	1,500
Benzene	46	46
2-Butanone (Methyl ethyl ketone)	14,000	14,000
Carbon disulfide	NA	NA
Chlorobenzene	25	25
Chloroform	620	620
1,1-Dichloroethane	47	47
1,2-Dichloroethylene (cis)	590	590
1,2-Dichloroethylene (trans)	590	590
Ethylbenzene	290	43
2-Hexanone (Methyl butyl ketone)	NA	NA
Methylene chloride	2,200	2,200
Styrene	100	100
Tetrachloroethene	120	120
Toluene	130	130
1,1,1-Trichloroethane	62	62
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA
Trichloroethylene	360	360
Trichlorofluoromethane	NA	NA
Vinyl chloride	780	780
Xylenes	100	100

Notes:
[1]Groundwater screening levels assume groundwater daylights in either freshwater or estuarine wetlands.
[2]Values shown are Environmental Screening Levels (ESLs) from SFRWQCB (2013).
NA = Not available.

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Table 11

Comparison of Updated Soil Screening Levels to Maximum Soil Concentrations Reported in the June 2015 Phase II Environmental Site Assessment

Chemical	Maximum Concentration at Any Soil Depth[2] (mg/kg)	Screening Level Exceeded[1]			
		Off-Site (Nearby) Resident	On-Site Commercial Worker	Construction Worker	Ecorisk (Terrestrial Wildlife)
Polycyclic Aromatic Hydrocarbons					
Anthracene	0.14				X (0.1)
Benzo(a)pyrene	2.1		X (0.29)	X (1.2)	X (0.1)
Fluoranthene	0.72				X (0.1)
Naphthalene	0.74				X (0.1)
Phenanthrene	0.39				X (0.1)
Pyrene	0.9				X (0.1)
Metals					
Antimony	4.1				X (0.27)
Arsenic	13		X (12)	X (12)	
Cadmium	1.7			X (1.4)	X (0.36)
Chromium (as trivalent)[3]	1,800				X (26)
Cobalt	93			X (20)	
Copper	110				X (28)
Lead	1,500		X (320)	X (320)	X (11)
Nickel	2,400		X (1,500)	X (57)	X (130)
Vanadium	50				X (7.8)
Zinc	420				X (46)
Petroleum Hydrocarbons					
TPH-Diesel	1,300		X (110)		
TPH- Motor oil	1,800		X (500)		

[1]Screening level shown in parenthesis.
[2]See text.
[3]Assumed to be trivalent chromium.

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Table 12

Comparison of Updated Groundwater Screening Levels to Maximum Groundwater Concentrations Reported in the June 2015 Phase II Environmental Site Assessment

Chemical	Maximum Groundwater Concentration (µg/L)	Screening Level Exceeded[1]		
		Drinking Water Groundwater Screening Level	Vapor Intrusion - Commercial Worker	Ecorisk Screening Level (Protection of Aquatic Life)
Benzene	4.4	X (1)		

[1]Screening level shown in parenthesis.

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November 2, 2015

SENT VIA EMAIL (warriors@sfgov.org**)**

Tiffany Bohee
c/o Brett Bollinger
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

RE: Comments on Environmental Review for Warriors Event Center and Mixed-Use Development at Mission Bay Blocks 29-32

Dear Ms. Bohee:

This firm represents the Mission Bay Alliance (the "Alliance") with respect to the Warriors Event Center Project ("Project"). These comments address the Final Subsequent Environmental Impact Report for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("FSEIR") as well as the Project itself.

1. Tiering

The FSEIR attempts to justify the City's decision not to provide any analysis of about half of the topics normally addressed in an EIR. The FSEIR initially reviews the conditions under which tiering under CEQA Guidelines section 15152 is permissible. Under section 15151, subdivision (g), impacts must "have been examined at a sufficient level of detail in the prior [EIR] to enable those effects to be mitigated or avoided . . . ."

The FSEIR also points out that the 1990 and 1998 EIRs were program EIRs under CEQA Guidelines section 15168, and that reliance on program EIRs is permissible in certain circumstances. Significantly, the FSEIR claims that the current project is within the scope of the Mission Bay Plan that was previously analyzed. Comments by the Alliance and others establish that the Notice of Preparation ("NOP")/Initial Study ("IS") inappropriately scoped out impacts for which there was inadequate analysis in the previous documents.

The FSEIR claims that the current project is consistent with the Mission Bay South Plan and/or within the scope of the program EIRs certified for the Mission Bay area. Yet comments from the public establish that, contrary to the City's assertions, the proposed arena and event center is inconsistent with the Mission Bay South Plan and

1
[LC-ERP-2]

inadequately analyzed in the prior EIRs. As such, this case is similar to *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307, 1320-1321, where a proposed gravel operation was found not to be within the scope of the long-term plan, and that a tiered EIR was required.

The FSEIR also attempts to refute the applicability of the fair argument standard. This discussion overlooks the major differences between the project described in the 1998 FSEIR (evaluating effects of developing Mission Bay plan area as described in 1998) and the Warriors Event Center and Mixed Use Development now being proposed, make this a new project, precluding reliance on the 1990 and 1998 environmental analyses. (See *Sierra Club v. County of Sonoma, supra*, 6 Cal.App.4th at 1320-1321.) Under separate cover, the Alliance has submitted additional analysis explaining: (1) why the project is inconsistent with the Mission Bay South Plan and would require an amendment; and (2) alternatively, why a variance would be necessary to locate the project within the Mission Bay South Plan area.

The case of *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1113 did not address a situation such as this where tiering is attempted for a new project that is inconsistent with the previously analyzed project. Thus it cannot stand for the proposition that the analysis in the NOP/IS of impacts that were not addressed would be subject to the substantial evidence standard. The simple inclusion of the NOP/IS in the DSEIR does not address this issue.

Even if the substantial evidence standard applies, public comments on the DSEIR demonstrate there are changes in circumstances since the 1998 SEIR involving, and significant new information showing, new significant effects not previously identified in the 1998 SEIR and substantial increases in the severity of significant effects that were previously identified in the 1998 SEIR. For example, biological resources exist on the site now that were not present in 1990 or 1998; thus, destruction of these resources creates a new, potentially significant impact. Similarly, contaminated soils are now present on the site due to backfilling that were not there previously. Construction and operation of the project would expose receptors to levels that exceed those levels that are considered safe. Similarly, seismic safety standards are completely different than in 1990 or 1998; moreover, the use proposed is a public assembly use, which was also not contemplated in 1990 or 1998.

Thus, the FSEIR improperly tiers from the 1990 and 1998 EIRs with respect to several resource areas, as described in Alliance and other public comments. This error defeats the public disclosure requirements of CEQA and misleads the public. In particular, if the 1990 and 1998 EIRs had actually analyzed the currently proposed

1 [LC-ERP-2] cont.

project, there would be no need for the reams of new analysis presented by the City on these topics, none of which are within the four corners of the FSEIR.

1 [LC-ERP-2] cont.

2. AB 900

Although the Project previously received certification from the Governor's office under AB 900, that law has very specific procedural requirements with which the City has failed to comply.

As previously noted, the City has failed to make the record of proceeding available online as required by Public Resources Code section 21186 ("Section 21186"). In response to clear evidence of the City's failure to post online all required documents as required by Section 21186, the City now takes the legal positon in the FSEIR that the City is somehow allowed to create two administrative records – one that is posted online as required by Section 21186, and a more expansive record that satisfies the requirements of Public Resources Code section 21167.6, subdivision (e)(10). This interpretation is contrary to the plain language of the Section 21186, which requires the City to timely post online all documents that will comprise the administrative record ultimately certified by the City. Any contrary interpretation would be absurd in light of the accelerated litigation briefing schedule provided by AB 900. Accordingly, the City's actions to flout its duties under AB 900 affirmatively prejudices any potential CEQA petitioner, and represents an intentional misuse of AB 900.

2 [LC-AB-1]

As the City knows full well, a motion to augment the record as provided by AB 900 will not adequately mitigate that prejudice where, as here, the lead agency knowingly and intentionally creates two separate administrative records – one for posting online and a second for ultimate certification – specifically in order to frustrate any future legal challenges. The only effective remedy in this instance is for the City to recirculate the DSEIR along with all documents comprising the administrative record in compliance with AB 900, which the Alliance calls upon the City to do.

3. Greenhouse Gas Emissions

The Alliance, among others, commented that the DSEIR's analysis of greenhouse gas ("GHG") emissions relied on the Project's defective AB 900 analysis to conclude that the Project had net zero GHG emissions. The FSEIR's response to these comments falls well below its duty of good faith.

3 [LC-GHG-1]

Rather than candidly acknowledge that the DSEIR relied upon the analytical methodology followed in the AB 900 certification, which was fatally flawed, the City

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now attempts to distance itself from that analysis with a misleading claim that public commenters were somehow "confuse[d]" about the relationship between the AB 900 analysis and the DSEIR's analysis. (FSEIR, p. 13.14-5.) This response is nonsense. The public was not confused. To the contrary, public commenters correctly noted that the DSEIR expressly relied upon the AB 900 analysis to repeatedly represent that the Project would result in no net additional GHG emissions. To wit:

> Construction activities would also result in temporary increases in GHG emissions. However, as described above under Regulatory Framework, the proposed project is a certified environmental leadership project under AB 900, and CARB has determined that the project would not result in any net additional GHG emissions due in part to the voluntary purchase of carbon credits by the project sponsor.
> . . .
> Thus, the Governor's certification of the proposed project as a leadership project further supports the determination that the proposed project would not have a significant impact on global climate change due to GHG emissions . . .
> [A]nd because the proposed project would not result in any net additional GHG emissions, the project would not contribute to cumulative GHG emissions impacts.

(FSEIR, p. 14-123-125.)

Thus, there is no "confusion" by the public. And the City's attempt to eliminate this clear analysis in the FSEIR is evidence of the City's attempt to deceive the public regarding the Project's true GHG emissions. The DSEIR unquestionably asserted that the Project's GHG emissions had been quantified, and were a net zero. The assumptions and analysis supporting the DSEIR's conclusion is demonstrably flawed. As a result, the City has a legal duty under CEQA to publicly acknowledge and correct that flawed analysis. The City has not yet done this, which renders the FSEIR misleading and therefore defective as an informational document.

Rather than correct the DSEIR's defective GHG analysis, the City disingenuously sidesteps the issue by claiming that the FSEIR is now engaging in a purely "qualitative" analysis of GHG emissions rather than a "quantitative" analysis, as allowed by the CEQA Guidelines. (FSEIR, 13.14-5.) While it is true that the referenced CEQA Guidelines permit an agency to use a qualitative analysis for GHG emissions in certain instances, this same guideline also advises, "A lead agency should make a good-faith effort, based on the extent possible on scientific and factual data." (CEQA Guidelines, § 15064.4,

3 [LC-GHG-1] cont.

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subd. (a).) Further a lead agency "shall have discretion to determine, in the context of a particular project, whether to" "use a model or methodology to quantify" GHG emissions or to "rely on a qualitative analysis." (CEQA Guidelines, § 15064.4, subd. (a)(1), (2).)

As explained in the attached letter by SCS Engineers ample information was available that allows the City to quantify the Project's GHG emissions, consistent with regulatory guidance. (See Exhibit 1, SCS Engineers Memorandum dated November 2, 2015.) Thus, while the City might ordinarily have discretion to utilize a qualitative analysis, that discretion is constrained because extensive quantitative data has already been prepared for the Project that was readily available to the City. (*Berkeley Keep Jets Over the Bay Committee v. Board of Board Commissioners of the City of Oakland* (2001) 91 Cal.App.4th 1344, 1371 (*Berkeley Keep Jets*) (agency abused discretion by not quantifying project's air emissions).) As in *Berkeley Keep Jets*, the City's failure to accurately disclose the Project's GHG emissions, and its evasive responses to comments asking for an adequate analysis, fail to satisfy its duty under CEQA.

One of the major defects in the DSEIR's GHG analysis was to exclude emissions associated with operation of the two office towers by claiming that this Project component is somehow "vested." Though, the DSEIR never acknowledges that fact. (FSEIR, p. 13.4-11-12.) The FSEIR openly "acknowledge[s]" this critical defect.

The City's response fails the good faith standard. First, it is telling that the City never even attempts to explain in the FSEIR how the office uses are "vested" in response to comment directly challenging that assumption. Second, even if the towers were somehow "vested," which they most surely are not, it is well established that a CEQA document must analyze the "whole of the action." (CEQA Guidelines, § 15378.) Unrealized hypothetical "permitted" or "vested" rights are not excluded from analysis of a project's impacts. (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 320.) Third, excluding the towers' GHG emissions establishes that the SEIR is premised on an inconsistent project description because the FSEIR analyzes the towers' impacts in other resources areas. (*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 197.) As just one example, the new CEQA Guidelines Appendix F analysis expressly includes energy requirements from the two towers. (FSEIR, 13.23-10.) If the towers were "vested" and therefore excluded from analysis, the DSEIR also would not analyze the tower's impacts in other resources areas either.

In conclusion, the FSEIR's analysis of GHG is fundamentally flawed and fails as an informational document. The responses to comments are evasive and misleading, and fail to satisfy the City's duty of good faith. Further, the information submitted by the

3 [LC-GHG-1] cont.

Alliance constitutes substantial evidence of a fair argument that the Project will have a significant adverse effect on GHG emissions.

3 [LC-GHG-1] cont.

4. Wind and Shadow

MBA previously commented that the DSEIR failed to analyze the Project's impact on on-site open space, which renders it defective as an informational document. (FSEIR, p. 13.15-1.) The FSEIR's response to this comment is not made in good faith, and instead is intended to conceal a significant impact (and thereby avoid recirculation) and improperly deferred mitigation.

The FSEIR first suggests that the open space provided on-site is somehow exempted from analysis because it consists of "publically [sic] accessible but private recreational areas." (FSEIR, p. 13.15-1.) This characterization, however, is inconsistent with the FSEIR's characterization of this open space as counting towards the Project's requirement to construct 0.46 acres of open space for each 1.0 acre of development area, which the FSEIR characterizes as "directly serv[ing] the project's demand for recreational facilities." (FSEIR, p. 13.16-3.) It is also inconsistent with the project applicant's own application materials, which provide:

4 [LC-WS-1]

> DESIGN NARRATIVE: OPEN SPACE
> The goals of the landscape design at Blocks 29-32 are to develop a unique place identity, ***to connect new public spaces to the larger neighborhood, and to serve as a local and regional amenity. In addition to maximizing the quality of public space amenities for visitors and community members***, the landscape design also incorporates a diverse array of sustainability strategies.
> . . .
> Third Street Gardens and Plazas
> . . .
> This space is intended to both facilitate a porous connection between the street and the main plaza ***and serve as an independent public space***.
> . . .
> Main Plaza
> The main plaza is designed to accommodate seasonal programming and large events for the Bay Area community, as well as ***function as a quality public space for the local neighborhood***. To accomplish this, the space is designed with maximum flexibility at its heart. Large-scale occupiable movable planters can be rearranged to accommodate various programs.

> Generous lawn panels and a few large specimen trees will create a neighborhood park atmosphere during non-event times.

(Golden State Warriors Even Center and Mixed-Use Development Combined Basic Concept/Schematic Design Submittal, Blocks 29-32: Open Space, Gatehouse & Parking and Loading, p. 5 (emphasis added).)

In other words, the FSEIR characterizes this open space as "private" to avoid a wind analysis, but "public" for purposes of dismissing impacts to recreational facilities. The FSEIR's characterization of this space as "private" is also inconsistent with the project applicant's repeated representations about this space. This type of shifting project description is misleading and thwarts informed decision-making. (*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 197.)

What is more, the FSEIR's attempt to narrow the scope of the required wind analysis by reference to Planning Code section 148 is misplaced. Indeed, if one were to simply apply the scope of that code section directly, it would not apply at all because the Project is being developed in a redevelopment area. Here, the 1998 Mitigation Monitoring and Reporting Program did not limit the application of a wind analysis to only those instances where Section 148 would apply on its own terms, but rather much more broadly:

4 [LC-WS-1] cont.

> Require a qualified wind consultant to review specific designs for buildings 100 feet or more in height for potential wind effects. The Redevelopment Agency would conduct wind review of high-rise structures above 100 ft. Wind tunnel testing would also be required unless, upon review by a qualified wind consultant, and with concurrence by the Agency, it is determined that the exposure, massing, and orientation of buildings are such that impacts, based on a 26-mile-per-hour hazard for a single hour of the year criterion, will not occur. The purpose of the wind tunnel studies is to determine design-specific impacts based on the above hazard criterion and to provide a basis for design modifications to mitigate these impacts. Projects within Mission Bay, including UCSF, would be required to meet this standard or to mitigate exceedances through building design.

(1998 EIR, p. VI.6., mitigation measure D.7.)

Thus, by its own terms this mitigation measure applies to "high-rise structures above 100 ft." within any land use designation, and the scope of the affected area to review is in no way limited to "public open space" rather than so-called "private open

space." Nor is there any explanation that the scope of affected area is to be limited by Section 148.

The FSEIR's misrepresentation on this issue is important because the FSEIR acknowledges that the Project would "exceed the wind hazard criterion" at no less than "three test points on the project site," but promptly dismisses the significance of those exceedances because "wind effects at these locations are not considered significant impacts on the environment." (FSEIR, p. 13.15-3.) The FSEIR reaches this strained legal conclusion, however, in order to avoid the factual issue that the de facto mitigation offered for that significant impact is impermissibly deferred under CEQA.

In short, the FSEIR undertakes a tortured legal analysis in order to conceal from the public the Project's significant wind impacts on public open spaces within the Project. The SEIR must be recirculated to disclose this significant impact.

4 [LC-WS-1] cont.

5. Recreation

The Alliance previously commented that the DSEIR's project description, including the routine influx of up to 18,000 people up to 225 times a year, refuted the DSEIR's conclusory assertion that the Project's demand for recreational facilities "would generally be consistent with that described in the Mission Bay FSEIR." The FSEIR fails to provide a good faith response to this comment. Rather than actually cite any report or analysis, the FSEIR merely restates its prior unsubstantiated claim. (DSEIR, p. 13.16-2.) Thus, there is no evidence whatsoever supporting this conclusion.

In the absence of any meaningful analysis regarding the Project's demand for recreational facilities, the FSEIR claims that the Project will not substantially degrade Bayfront Park in part because of "the inclusion of on-site publically accessible open space proposed by the project that would directly serve the project's demand for recreational facilities." (FSEIR, 13.16-3.) Yet this characterization of the Project's "open space" is inconsistent with the FSEIR's treatment of these areas in its wind analysis, which it characterizes as "publicly accessible but private recreational areas," (FSEIR, 13.15-1.) The FSEIR's inconsistent treatment of this important component of the Project thwarts informed decision-making and public participation.

The FSEIR also fails to respond in good faith to comments about hazardous materials exposure associated with construction and occupancy of Bayfront Park. The City first claims that Bayfront Park is somehow a separate CEQA project notwithstanding the fact that its existence is triggered by construction of the arena. (FSEIR, 13.16-4.) Setting aside the FSEIR's attempted legal obfuscation, the FSEIR then conclusively

5 [LC-REC-1]

asserts that all issues of hazardous materials are satisfied because a Risk Management Plan ("RMP") has been approved for the area. (FSEIR, 13.16-5.) This response, however, ignores that the RMP itself is not sufficiently protective of human health because it is: (i) premised on outdated screening levels that are significantly higher than now utilized; (ii) does not address contaminated soil that was subsequently imported onto the Project site; and (iii) does not even address several contaminants that have been recently identified onsite at levels well above current screening levels.

In summary, the information submitted by the Alliance constitutes substantial evidence of a fair argument that the Project will have a significant adverse effect on recreational facilities. In the alternative, per CEQA section 21166 and CEQA Guidelines section 15162, the facts described above constitute a change in circumstances since the 1998 SEIR involving, and significant new information showing, a new significant effect not previously analyzed in the 1998 SEIR. Under either standard, the City must prepare and circulate for public comment an environmental impact report to review the Project's impacts on recreational facilities.

5 [LC-REC-1] cont.

6. Geology and Soils

According to the FSEIR, all the concerns raised by the public can be addressed in the future by application of regulatory requirements. Furthermore, the FSEIR explains that design detail can be developed after certification of an EIR. Taking the theory advanced in the FSEIR to its logical conclusion, it would appear unnecessary to analyze impacts related to Geology and Soils at all.[1] This begs the question of what the purpose of an EIR, which is to:

> Identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided.

(Pub. Resources Code, § 21002.1, subd. (a).) The implementing CEQA Guidelines then describe how an EIR should consider and discuss significant impacts of a project. (CEQA Guidelines, § 15162.) To assist in that process, the Office of Planning and

6 [LC-GEO-1]

[1] Indeed, there have been efforts to alter CEQA so that there would be no need to analyze an impact at all if there was an applicable regulatory standard. This "standards-based" approach to CEQA "reform" was abandoned after one of its main champions, former Senator Michael Rubio, resigned from the Legislature to take a government-affairs job with Chevron in early 2013.

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Research has also provided a sample checklist in CEQA Guidelines Appendix G for Geology and Soils, among other impacts.

The 1998 SEIR did include a detailed analysis of then-existing conditions and then-existing standards as they applied to the land uses contemplated in the Mission Bay Plan area. As explained elsewhere, the 1998 SEIR did not analyze any development such as the Arena and Entertainment Center. Comments on the current DSEIR explain that the currently proposed use is completely different than the previously contemplated uses for the site. Additionally, standards regarding seismic safety and construction methodology have changed since 1998. Last, the actual conditions on the site have changed, as large quantities of contaminated soil were removed from the site, and 80,000 cubic yards of other (apparently also contaminated) materials were backfilled into the site from elsewhere in Mission Bay.

According to the City's interpretation of CEQA, all of these details can be addressed after certification of the EIR. This approach, however, skips over the analysis and mitigation process that is essential to the EIR process. In this case, that process occurred in 1990 and 1998, and as essentially accepted in the FSEIR, the applicable standards are very different now as compared to at that time. Relying on this outdated analysis, as updated by numerous documents prepared outside of the public review process and outside the current SFEIR fails to meet the informational purposes of CEQA. While tiering is permissible in certain circumstances, its use in these circumstances defeats the public information purposes of CEQA.

Though it did not specifically address the same tiering issues as are present here, the California Supreme Court's opinion in *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal. 4th 412, 443 is instructive:

> The audience to whom an EIR must communicate is not the reviewing court but the public and the government officials deciding on the project. That a party's briefs to the court may explain or supplement matters that are obscure or incomplete in the EIR, for example, is irrelevant, because the public and decision makers did not have the briefs available at the time the project was reviewed and approved. The question is therefore not whether the project's significant environmental effects can be clearly explained, but whether they were.

6 [LC-GEO-1] cont.

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Here, the analyses in the 1990 and 1998 are no longer pertinent. The City admits that none of the mitigation measures developed during that time even apply now. Subsequent brief descriptions in the IS/NOP also fail to characterize the full nature and extent of the seismic and other hazards that will result from construction of the Project. Now, the FSEIR includes yet additional analysis and information regarding how impacts related to Geology and Soils will be addressed later through regulatory processes alone. This review process does not clearly explain the effects of the Project to the public.[2]

In addition to this overarching flaw in the City's approach to analyzing impacts related to Geology and Soils, BSK Associates has also prepared a technical memorandum responding to several of the responses provided in the FSEIR concerning Geology and Soils and related Hydrological impacts from tsunami and sea level rise risks. (BSK Geology Report attached as Exhibit 2.) This additional information further demonstrates the need to prepare a stand-alone, publicly comprehensible analysis of these environmental impacts prior to making any decision about the Project.

In summary, the information submitted by the Alliance constitutes substantial evidence of a fair argument that the Project will have a significant adverse Geology and Soils impacts. In the alternative, per CEQA section 21166 and CEQA Guidelines section 15162, the facts described above constitute a change in circumstances since the 1998 SEIR involving, and significant new information showing, a new significant effect not previously analyzed in the 1998 SEIR. Under either standard, the City must prepare and circulate for public comment an environmental impact report to review the Project's impacts concerning geology and soils.

6 [LC-GEO-1] cont.

7. Hazards and Hazardous Materials

New information and/or changes in circumstances have occurred in the area of hazards and hazardous materials that require recirculation. Although the NOP/IS determined that no additional analysis was required of these issues in the DSEIR, changed circumstances and/or new information following the 1998 SEIR requires recirculation of the DEIR that includes adequate analysis and disclosure of the Project's potentially significant impacts with respect to hazards and hazardous materials.

7 [LC-HAZ-2]

[2] This same deficiency applies to all of the resource areas for which there was no new analysis in the DSEIR.

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First, the DSEIR did not previously acknowledge the presence of asbestos on-site. Following release of the DSEIR, the Bay Area Air Quality Management District staff sampled the existing stockpiles on-site, which identified the presence of asbestos above regulatory limits. In response to this newfound asbestos in onsite soils, the applicant was required to prepare an asbestos dust monitoring plan in order to mitigate the significant public health risk. The new asbestos dust monitoring plan, dated October 9, 2015, was released to the public very recently. The newly-discovered presence of asbestos in soils onsite, not previously disclosed in the DSEIR, represents a new significant impact of the Project that requires recirculation.

7 [LC-HAZ-2] cont.

Second, following release of the NOP/IS,[3] the applicant's consult prepared a Phase II report that identified significant additional contamination in soils onsite. The Phase II report shows that significant amounts of both previously existing and subsequently-imported hazardous waste remain on the site today. Backfill used in this area contained Class 1 and 2 hazardous materials that were not present before the excavation and partial removal of petroleum contaminated materials. These materials are not addressed in the 1998 RMP or 2006 Revised RMP. The FSEIR now acknowledges the existence of this contaminated backfill (FSEIR, 13.22-20), which was withheld from public disclosure in the NOP/IS and RDEIR.

The presence of newly-revealed contamination, viewed in isolation, represents new information and/or a changed circumstance requiring analysis and disclosure in a recirculated DSEIR. What is more, however, the Alliance retained an independent toxicologist to compare the results of the Phase II to the health screening levels in the 1998 RMP (and included in the 2006 RRMP) and current standards. The report prepared by Damian Applied Toxicology, LLC ("DAT"): (1) provides updated screening levels for the constituents at the site; (2) provides newly applicable screening levels that did not exist at the time of the 1998 EIR; (3) compares the new and old screening levels; and (4) compares the updated screening levels to the most recent site investigation data from the Project site. (See DAT Report, submitted to City on October 20, 2015.)

8 [LC-HAZ-1]

The DAT Report shows that the prior screening levels are completely outdated and do not protect public health. Using updated screening levels that address a wide range of relevant potential receptors and exposure pathways, the DAT Report concludes that 19 chemicals (18 in soil and 1 in groundwater) that were detected in the 2015 Phase II investigation at the site exceed at least one screening level. Thus, present contamination poses potentially significant hazards due to impacts to the shallow water table, risks to

[3] Hazards and Hazardous Materials is one of the subjects determined by the City to not warrant any analysis in the DSEIR.

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construction workers exposed to site soils, including backfill, risks to commercial workers at the planned development project, and risks from transport and disposal of this hazardous waste, to the extent it may be taken off site. These hazards are not addressed in the RMP/RRMP, and represent new significant impacts that require recirculation of the DSEIR.

The FSEIR mischaracterizes the record in an attempt to dismiss the significance of this newly-discovered contamination that is well above screening levels. First, the FSEIR suggests that it is contamination is not the result of subsequent activities at the Project site, stating, "The fill unit is . . . likely related to debris from the 1906 earthquake and resulting fire." (FSEIR, 13.22-21.) This statement is misleading because is conceals from the public the fact, recognized in both the applicant's Phase II report and the prior BSK report, that this material was deposited onto the Project site in approximately 2005 following excavation to remediate petroleum free-product found onsite. (Phase II report, p. 6; BSK Hazardous Materials Report dated July 22, 2015, p. 3.) Thus, available facts indicate that this contaminated soil was the result of activities that took place following the 1998 SEIR, not the 1906 earthquake.

The City also attempts to dismiss the significance of this contamination by asserting, "[T]he Phase II ESA determined that these concentrations are not considered a health concern to construction workers." (FSEIR, 13.22-21.) First, it is the function of a health risk assessment, and not a Phase II environmental site assessment, to make a determination of human health risk. Indeed, the completely inappropriate and inadequate nature of this conclusion in the Phase II is demonstrated with clarity in the DAT Report, discussed above, establishing that some of these contaminants are found in this fill material at up to ten times current screening levels. The City's misstatements on these critical human health issues fall well below its duty of good faith.

8 [LC-HAZ-1] cont.

Finally, it is noted that the FSEIR repeatedly relies on compliance with the existing 1999 RMP under the San Francisco Bay Regional Water Quality Control Board ("RWQCB") oversight to ensure that impacts are less than significant. (FSEIR, 13.22-8 – 12.) In addition to establishing that the RMP itself is outdated and no longer adequate to protect human health, the attached correspondence establishes that oversight by the RWQCB is no longer adequate to effectively manage the site for the protection of construction workers and the public. (See Exhibit 3, letter to Dept. of Toxic Substances Control dated October 23, 2015.)

In summary, the information submitted by the Alliance constitutes substantial evidence of a fair argument that the Project will have a significant adverse effect regarding hazardous materials. In the alternative, per CEQA section 21166 and CEQA

Guidelines section 15162, the facts described above constitute a change in circumstances since the 1998 SEIR involving, and significant new information showing, a new significant effect not previously analyzed in the 1998 SEIR. Under either standard, the City must prepare and circulate for public comment an environmental impact report to review the Project's impacts on hazardous materials.

8 [LC-HAZ-1] cont.

8. Urban Decay

The Alliance previously commented that the DSEIR ignored altogether the potentially significant urban decay impacts associated with eliminating NBA events at the existing Oracle Arena. Rather than prepare the required analysis in good faith and recirculate the RDEIR with this new information as required by CEQA, the City instead hired a consultant to prepare a *post hoc* rationalization for why no analysis was required in the first place. (See FSEIR, Appendix UD.) The Alliance has again retained its independent expert, Dr. Philip King, to review the FSEIR's analysis. Dr. King's report is attached hereto as Exhibit 4, and incorporated by reference. As explained by Dr. King, the FSEIR's analysis is riddled with methodological errors and does not actually respond to Dr. Kings' original analysis explaining why it is a potentially significant impact requiring analysis.

9 [LC-GEN-4]

9. Flawed and Misleading Approach to Analyzing and Mitigating the Project's Transportation Impacts

Buried within the "project description" are *de facto* mitigation measures for the Project's impacts on transportation. More specifically, these mitigation measures include both one-time capital improvements and ongoing expenditures as set forth in the Transportation Management Plan ("TMP") and Transit Service Plan ("TSP"). The City's strategy of conflating analysis of the Project's design features and mitigation measures violates CEQA. (See, e.g., *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645; see comments by Smith Engineering and Management dated November 2, 2015, pp. 2-3.) The prejudice associated with the City's strategy, other than simply obscuring the City's massive public subsidy for the Project, is that the EIR "fail[s] to consider whether other possible mitigation measures would be more effective." (*Id*. at 657.)

The City also appears to rely on the incorporation of these plans into the project description in order to conceal from the public the City's failure to require full mitigation of the Project's impacts from the applicant. It is a bedrock principle of environmental law that development projects should mitigate their environmental impacts to the extent feasible. With respect to the Project's transportation impacts, however, the City deviates

10 [LC-PD-1]

from this principle and instead adopts an odd, ad hoc "fair share" fee program to mitigate project-level impacts. (*Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173 ("*Anderson First*").) As a threshold matter, the SEIR never clearly discloses to the public that it essentially relies upon "fair share" payments from the Project in order to mitigate its project-level transportation impacts, which renders the SEIR defective as an informational document. Had the SEIR done so, it would have been apparent that the SEIR failed to disclose necessary information about this fair share program.

The payment of a "fair share" impact fees may constitute adequate mitigation if they "are part of a reasonable plan of actual mitigation that the relevant agency commits itself to implementing." (*Ibid*.) The *Anderson First* decision identified the information that is required in an EIR to establish the adequacy of a "fair share" mitigation measure, which includes the following:

(i) An identification of the required improvement;
(ii) An estimate of the cost of the required improvement;
(iii) Sufficient information to determine how much the project would pay towards the improvement; and
(iv) The fees must be part of a reasonable, enforceable plan or program sufficiently tied to the actual mitigation of the impacts at issue.

(*Anderson First, supra*, 130 Cal.App.4th at 1188-89.)

The SEIR fails to provide this necessary information. While the SEIR mentions the TMP and TSP as addressing the Project's transportation impacts, the SEIR fails to identify the total costs of the improvements, the Project's allocated contribution, and the enforceable plan or program to contribute the Project's "fair share."

The SFMTA spreadsheet entitled "Capital and Operating Cost Estimates for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 (The Project)," dated October 13, 2015, is instructive. (See Exhibit 5.) Considering only one-time "capital uses" and "capital uses allocation to project," (i.e., excluding ongoing costs to mitigate the Project's transportation impacts), it reveals that the total cost of these improvements is $64,663,474, and the Project's fair share allocation is $61,898,909. Of the amount "allocated" to the Project, however, only $27,390,335 will actually be paid by the project applicant. Thus, the Project is contributing less than 50% of its allocated fair share contribution that is necessary to mitigate the Project's transportation impacts. To make matters worse, only $19,434,536 is coming from an existing and enforceable

10 [LC-PD-1] cont.

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impact fee program. The balance of the project applicant's contribution, approximately $7,955,799, is the result of the City's voluntary redirection of General Fund revenues.

In other words, rather than simply require the project applicant to be responsible for the capital improvements needed to mitigate its project-level impacts, the City establishes some fair share fee program and then does not even require the applicant to pay the fair share fee – instead voluntarily giving up General Fund revenues that are intended to support other Citywide programs and services. By cloaking this deficient mitigation strategy as a design feature of the Project, the City never engages in a meaningful analysis of potentially feasible mitigation measures involving the project applicant actually mitigating these project-level impacts.

A similar deficiency applies to the Project's ongoing costs to mitigate its project-level transportation impacts. Total ongoing annual costs to mitigate the Project's transportation impacts are estimated at $8,209,318 in FY18-18. Of this amount, $2,773,110 in revenue is not paid from an enforceable impact fee program but rather re-directed from the General Fund. What more, significant additional City revenues, which are not even generated by the Project but rather "allocated" to the Project such as off-site parking and hotel tax, will be re-allocated to pay for the Project's ongoing mitigation for project-level transportation impacts. These reallocations of General Fund revenues cannot constitute an enforceable plan that is subject to future discretionary actions by the Board of Supervisors. Even the future adoption of the so-called Mission Bay Transportation Improvement Fund is inadequate to ensure future reallocations of General Fund revenues because the present Board of Supervisors cannot bind by mere ordinance the discretion of future Boards. (*McMahan v. City and County of San Francisco* (2005) 127 Cal.App.4th 1368.)

In short, the City is inexplicably failing to require the applicant to bear responsibility for fully mitigating its own project-level impacts. Rather, the City is setting up a flawed *de facto* fair share fee program to pay for these project-level mitigations, and redirecting revenues generated by the Project and elsewhere to cover the funding gap for these mitigation measures. This deficiency is nowhere disclosed to the public in the SEIR. The City may not rely on the preparation of various "plans" as a smokescreen to conceal from the public the Project's failure to mitigate its own project-level impacts and massive public subsidy needed to make up for that deficiency. The SEIR is misleading, and fails as an informational document with respect to mitigation for transportation impacts.

The City's action to mitigate the Project's transportation impacts is also an undisclosed public subsidy that triggers substantive and procedural mandates by the City

10 [LC-PD-1] cont.

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before committing to such subsidy. (See Exhibit 6, report by Marin Economic Consulting dated November 2, 2015.) More specifically, these subsidies include committing to direct General Fund revenues to pay for light rail cars, construction of transportation improvements, public safety and traffic officers, etc., and "allocating" parking/hotel tax revenues from other properties to pay these expenses. California law requires the City to notice and hold a public hearing before committing to such subsidies. The City is also required to provide detailed information about the purpose, nature, extent and effect of such subsidies prior to commitment. The City has failed to comply with these substantive and procedural mandates prior to approving this public subsidy.

10 [LC-PD-1] cont.

* * *

Please feel free to contact my office with any questions.

Very truly yours,

SOLURI MESERVE
A Law Corporation

By: Patrick M. Soluri

cc: Chris Kern (chris.kern@sfgov.org)
Brett Bollinger (Brett.Bollinger@sfgov.org)

Attachments:

Exhibit 1: Memorandum from SCS Engineers dated November 2, 2015
Exhibit 2: Geology Report from BSK Associates dated November 2, 2015
Exhibit 3: Letter from Soluri Meserve to DTSC dated October 23, 2015
Exhibit 4: Memorandum from Dr. Philip King dated November 2, 2015
Exhibit 5: SMFTA spreadsheet entitled, "Capital and Operating Cost Estimates for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 (The Project)," dated October 13, 2015
Exhibit 6: Report from Marin Economic Consulting dated November 2, 2015

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EXHIBIT 1

O-MBA16S6

Environmental Consultants
and Contractors

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SCS ENGINEERS

November 2, 2015
File No. 01215159.00

MEMORANDUM

TO: Osha Meserve, Soluri Meserve

FROM: Patrick S. Sullivan, SCS Engineers
John Henkelman, SCS Engineers

SUBJECT: Response to Comments on Greenhouse Gas Analysis for Golden State Warriors Event Center

SCS Engineers (SCS) has reviewed the greenhouse gas (GHG) analysis and Responses to Comments prepared for the proposed Golden State Warriors (GSW) Event Center (Project). The GHG analysis was performed and included in the Draft Subsequent Environmental Impact Report (SEIR) to demonstrate that the GHG emissions would not be significant for purposes of the California Environmental Quality Act (CEQA). The analysis also included references to the analysis performed for Assembly Bill 900 (AB900) certification, including that it would result in "no net increase" in GHG emissions. SCS has performed many GHG analyses for purposes of permitting, mandatory reporting, verification, CEQA and other requirements. The resumes of Patrick Sullivan and John Henkelman are provided as an attachment.

The documents reviewed include the following:

- *Application for CEQA Streamlining: GHG Emissions Methodology and Documentation*, Environ 2015
- *Application for Environmental Leadership Development Project, Golden State Warriors, Event Center and Mixed-Use Development at Mission Bay Blocks 29-32*, Golden State Warriors 2015
- *ARB Staff Evaluation for Golden State Warriors Event Center and Mixed-Use Development at Mission Bay Blocks 29-32*, ARB Staff 2015
- *Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 Draft Subsequent EIR*, Office of Community Investment and Infrastructure, October 23, 2015

SCS does not agree with the conclusion that Project GHG emissions have been adequately addressed in the SEIR. The Responses to Comments dismiss criticism of the analysis performed for AB900 and indicate that the SEIR concludes that GHG emissions are not significant based on a qualitative analysis. SCS believes this level of analysis is inconsistent with existing guidance, that it fails to provide an accurate representation of the emissions from the project, and the inclusion of the AB900 analysis is misleading.

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[LC-GHG-1]

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EXISTING GHG GUIDANCE

The SEIR is not consistent with guidance from regulatory agencies such as Bay Area Air Quality Management District (BAAQMD) or organizations such as the California Air Pollution Control Officers Association (CAPCOA).

The BAAQMD is the regulatory body for the San Francisco Air Basin (SFAB), which includes the Project location. The BAAQMD has issued CEQA guidelines in its *California Environmental Quality Act Air Quality Guidelines* (BAAQMD, May 2012) document (BAAQMD Guidance) that include guidance on the assessment of GHG. While the BAAQMD is no longer recommending the thresholds in that document, the BAAQMD has indicated that other elements of that guidance can be utilized by planning agencies. That 2012 BAAQMD Guidance recommends the quantification of GHG emissions from projects for purposes of CEQA and states that "Emissions should be estimated in terms of carbon dioxide equivalent."

CAPCOA is an organization of air pollution control officers from all local air districts in California. It is not a regulatory agency, but it has provided guidance for agencies throughout the state on air pollution, air toxics, and climate change. CAPCOA issued *CEQA and Climate Change* (CAPCOA, January 2008). That guidance states that:

"…the defensibility of a CEQA analysis rests on the following concerns:

- Whether the public agency has sufficiently analyzed the environmental consequences to enable decision makes to make an intelligent decision;
- Whether the conclusion of the public agency are supported by substantial evidence in the administrative record; and
- Whether the agency has made a good faith effort to disclose significant effects."

The SEIR fails to meet these criteria because it has not sufficiently analyzed the environmental consequences, provided evidence of the conclusion, or made a good faith effort to disclose significant effects. As SCS noted in a memorandum dated July 20, 2015, the AB900 analysis of the Project is fundamentally flawed and inconsistent with California GHG policies. The SEIR does not sufficiently analyze GHG impacts from the Project other than by referencing the flawed AB900 analysis. Without quantification or more robust analysis of the actual GHG emissions from the Project, the public agency does not have sufficient information to make a decision, and the agency has not made a good faith effort to disclose significant effects.

Both the BAAQMD and CAPCOA have proposed quantitative GHG emission thresholds for purposes of determining significance for purposes of CEQA. While neither threshold is binding, the SEIR should compare the GHG emissions from the Project to the BAAQMD and CAPCOA thresholds to enable the public and policy makers to gauge the significance of GHG emissions.

11 [LC-GHG-1] cont.

O-MBA16S6

GHG QUANTIFICATION

The SEIR has failed to quantify GHG emissions. If the Project is not relying on the AB900 analysis, as Response GHG-2 of the SEIR indicates, then no quantification of GHG emissions from the Project has been performed. Without quantification of the GHG emissions, the public agency cannot adequately determine whether how much GHG will be emitted by the Project relative to proposed significance thresholds, local GHG emissions, or other GHG sources.

As evidenced by the AB900 analysis, the tools to quantify GHG emissions exist. While the accounting methodology in the AB900 analysis is fundamentally flawed, the inventory methodology used in the analysis is generally appropriate for the quantification of GHG emissions from the Project. The BAAQMD Guidance lists several models that can be used by project proponents to quantify GHG emissions, including the Urban Emission Model (URBEMIS) and BAAQMD GHG Model (BGM). Voluntary registries such as The Climate Reserve (TCR) have also developed GHG quantification methodologies.

MISLEADING USE OF AB900 ANALYSIS

Response GHG-2 of the SEIR indicates that the SEIR is not relying on the AB900 analysis to demonstrate that GHG emissions are not significant, yet the SEIR makes repeated references to the AB900 analysis to support claims that GHG emissions are not significant. The AB900 analysis and the SEIR GHG analysis "have separate and distinct requirements and purposes," as stated on page 13.14-5. Thus, the AB900 analysis cannot and should not be relied upon by the SEIR as quantification of the GHG emissions from the Project. Nor should it be used to support conclusions for CEQA purposes unless it can be demonstrated that it is consistent with CEQA requirements for a GHG analysis. The SEIR has not provided evidence that the AB900 analysis can or should be used to support conclusions about the significance of GHG emissions from the Project. The AB900 analysis is fundamentally flawed for purposes of CEQA for reasons described in the July 20, 2015 Memorandum provided by SCS.

Impact C-GG-1 states that "As part of the AB900 application, the project sponsor has committed to purchase carbon credits from a qualified GHG emissions broker in an amount to offset all GHG emissions from project construction and operations." This statement is misleading because it implies that the AB900 analysis is a sufficient analysis of the Project for CEQA purposes and that the Improvement Measure I-C-GG-1 provided consistent with the AB900 analysis is sufficient for CEQA purposes. The AB900 analysis uses inappropriate boundaries to analyze the GHG emissions and cannot be used for CEQA purposes. The SEIR appears to recognize the flaws of the AB900 analysis in suggesting it was not relied upon, but then it does just that – relies upon the AB900 analysis.

11 [LC-GHG-1] cont.

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CONCLUSIONS

The Response to Comments in the SEIR indicate that the AB900 analysis is not being relied upon for CEQA purposes to demonstrate that GHG emissions from the Project are less than significant. If the AB900 analysis is not being relied upon, the SEIR has provided no quantification of GHG emissions for CEQA purposes and has misleadingly referred to the AB900 analysis to support the conclusion that GHG emissions are not significant. For reasons stated in the July 20, 2015 memorandum from SCS, the AB900 analysis of GHG emissions from the Project is fundamentally flawed and cannot be relied upon for CEQA purposes of determining significance.

GHG analysis used to support the determination that the Project met the requirements of CEQA or AB900 is insufficient to demonstrate that the GHG emissions from the Project will be net zero or less than significant under CEQA for the following reasons:

- The SEIR fails to provide an appropriate quantification of GHG emissions for CEQA purposes. In the response to comments regarding the use of the AB900 analysis, the SEIR indicates that the AB900 analysis is not being used as the basis for evaluating GHG emissions from the Project.
- The AB900 analysis omits planned office towers from the GHG emission calculation, as specifically noted on SEIR Vol. 4, p.13.4-11. Because it omits these towers, the GHG quantification is inappropriate for use as a CEQA baseline.
- The GHG analysis makes unsupported assumptions about Oracle Arena, trip linkage, and energy use which artificially lower the expected GHG emissions from the Project and do not provide an accurate evaluation of the GHG emissions that can be expected to result from the Project.
- The GHG analysis does not require project monitoring and periodic GHG reporting to assure the accuracy of the projected emissions.
- The GHG offsets proposed as a mitigation measure are not required to be consistent with California GHG reduction goals and policies, could be used for other projects, and may not ever be required for the operational emissions.
- Without the accurate quantification of GHG emissions from the Project, the amount of necessary offsets cannot be determined.

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[LC-GHG-1]
cont.

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EXHIBIT 2

O-MBA16S6

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Rancho Cordova, CA 95670
P 916.853.9293
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Via U.S. Mail and Email (Osha Meserve osha@semlawyers.com)

November 2, 2015 BSK Project Number E0906601S

Soluri Meserve
1822 21st Street, Suite 202
Sacramento, CA 95811

Subject: Review
Responses to Comments (October 23, 2015)
Event Center and Mixed-Use Development at Mission Bay Blocks 29-32
Mission Bay Project
San Francisco, California

Dear Ms. Meserve:

At the request of Soluri Meserve, BSK Associates (BSK) reviewed the following documents:

Responses to Comments, Event Center and Mixed-Use Development at Mission Bay Blocks 29-32, Volume 5, Section 13.20, Geology and Soils, dated October 23, 2015 and Volume 5. Section 13.21.9, Tsunami Risks

Our review was limited to Geology, Engineering Geology and Seismic related aspects of the subject documents. The following items #1 to #7 presents our comments based on a review of the Reponses to Comments pages 13.20-1 to 13.20-26; and items #8 to #10 present our comments based on our review of pages 13.21.35 to 13.21.42.

1. Response GEO-1, page 13.20-10 states "The 2014 Langan Treadwell Rollo (LTR) Geotechnical Evaluation provides recommendations regarding foundation and building design in order to comply with applicable codes. These recommendations will be incorporated into the design of the event center and other buildings, including the sub-surface facilities and the designs will be submitted to the DBI for its approval." On page 11 of the 2014 LTR report included the following "The conclusions and recommendations presented herein are preliminary and should not be relied upon for design." Therefore, the 2014 LTR cannot be used for design. Design features which may be required for Geotechnical Engineering purposes, that have not been confirmed may be highly variable and may result in significant environmental impacts. For illustration a design that calls for a deep foundation on drilled piers/piles has dramatically different impacts than a design that uses soil densification or in-situ treatments.

2. Response GEO-1, page 13.20-12 states "Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead and live loads. Therefore, structures designed in accordance with the

12 [LC-GEO-2]

San Francisco Building Code are designed to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage." This statement is not correct and does not apply to sites, such as Mission Bay Blocks 29-32, that are located on soft soils or liquefiable soils. Seismic response of structures located on soft or liquefiable soils is non-linear and requires a site specific seismic response analysis (See ASCE 7-10, Section 20.3.1).

3. Numerous responses throughout Section 13.20, presented local and state building code requirements as mitigation measures for various geologic hazards that are present at the site. This approach of utilizing design level mitigation that will be prepared at a later date, may be a valid method for a simple project located on stiff soils where changes in design have minor impact. The proposed structure is highly complex, with problematic subsurface conditions that will require significant ground modifications that could themselves have potentially significant impacts on the surrounding area. Based on the size and complexity of the structure, the impacts and cumulative impacts need to be determined during the CEQA process such that the impacts of the building methods can be fully evaluated. See #1 for a construction related example that may have variable environmental impacts.

4. GEO-2 page 13.20-18, states "Further, as discussed in more detail in Section 13.22, Hazards and Hazardous Materials, Response HAZ-3, San Francisco emergency response procedures and evacuation routes are addressed in Impact HZ-3 of the Initial Study (pp. 119 through 121). As summarized in that impact analysis, the City has a published Emergency Response Plan dated 2010 and prepared by the Department of Emergency Management subsequent to publication of the 1998 Mission Bay FSEIR as part of the City's Emergency Management Program." Our review of the reference provided, did not disclose any method or actions that the City or County could take or has taken to prevent geohazard impacts, such as liquefaction induced sand boils that may develop along the surface streets surrounding the project. Sand boils that may occur during an earthquake could result in significant settlements that would render the roads unusable for evacuation or emergency response. This issue has not been evaluated and considering that 18,000 people may be trying to evacuate from the area into unusable roads, this is a significant impact that has not been addressed. State and local building codes do not have provisions for evaluating and mitigating liquefaction hazards to may occur under roadways, therefore utilizing building codes during the design phase to address this issue would not be effective.

5. GEO-2 page 13.20-18, states "The required extent of removal and replacement with engineered fill would be determined on the basis of the site-specific geotechnical investigation discussed on p. 87 of the Initial Study and would be conducted in accordance with the Site Permit process described in Response GEO-1." See our response #3 above.

6. GEO-3 pages 13.20-20 to 13.20-21, See our response #3 above.

7. GEO-4 pages 13.20-21 to 13.20-23, See our response #3 above.

12 [LC-GEO-2] cont.

BSK

8. HYD-8 page 13.21-40, states "The Initial Study did not specifically identify the expected tsunami inundation elevation at the project site. However, subsequent to publication of the SEIR, a more detailed analysis of tsunami risks at the project site has been conducted to determine the maximum inundation elevation associated with a tsunami run-up of 5.9 feet (based on analysis of existing Bay Area tsunami studies). This detailed site-specific analysis indicates that the maximum inundation elevation for the tsunami hazard area in the project vicinity would be -0.3 feet SFD (11.2 feet NAVD88)". Our review of the referenced site-specific analysis[1] indicates that a site specific Tsunami Hazard Analysis was not performed for the project site. The run-up values presented in the ESA summary of Existing Tsunami Hazard Mapping data was based on a 2006 report that was performed for Marine Oil Terminals in San Francisco Bay. The 2006 report is appropriate for a regional analysis, but it is not a site-specific analysis for the project site. The Maximum Tsunami Inundation elevation of 11.2 feet presented in the August 18, 2015 ESA memorandum appears to over-reaching the intent and the accuracy of data obtained from an analysis performed for another site.

9. HYD-8 page 13.21-41 states "Regarding the consideration of sea level rise and extreme tides in estimates of tsunami risks, the detailed analysis described above determined the maximum inundation elevation by adding the maximum tsunami wave height of 5.9 feet to the mean high water (MHW) tidal datum of 5.29 feet NAVD88. The MHW is calculated as the average of all high water heights observed over the National Tidal Datum Epoch. This is consistent with the state mapping. To calculate tsunami inundation elevations associated with extreme high tides and sea level rise as suggested by the comments would be speculative". California Governor's Executive Order S-13-08, which was issued on November 14, 2008 set policy with respect to sea level rise such that sea level rise should be incorporated into inundation analysis for planning, and accounting for sea level rise is not only not speculative, but was used for the project's own 100-year storm analysis that incorporated sea level rise through 2100 (Impact HY-7 of the SEIR, pp. 5.9-41 through 5.9-44)

10. HYD-8 page 13.21-41 "The comment also suggests a different methodology should have been used to analyze tsunami risk. The commenter's disagreement over the methodology used in the SEIR is noted. Under the "substantial evidence" standard, such disagreement does not mean the methodology used in the SEIR is inadequate or that addition analysis is required." There does not appear to be disagreement that the use of the out-dated Tsunami Hazard analysis in the 1998 EIR is not appropriate for the current project. This is clearly evident with Lead Agency's submittal of the August 18, 2015 memorandum as a new "detailed site-specific analysis".

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[LC-HYD-2]

Our review was limited to the Geology, Engineering Geology and Seismic related aspects as they relate to the development as described in the reports made available for review.

[1] Environmental Science Associates. Summary of Existing Tsunami Hazard Mapping in the Vicinity of the Proposed Golden State Warriors Mission Bay Project and Refined Limits of Maximum Anticipated Hazard. August 18, 2015

We appreciate the opportunity to be of service to Soluri Meserve and trust that this correspondence provides you with the information necessary at this time. Please contact us with questions regarding the review comments presented this letter.

Respectfully submitted,
BSK Associates

Martin B. Cline, CEG
Senior Engineering Geologist

Kurt Balasek
Senior Hydrogeolgist

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EXHIBIT 3

O-MBA16S6

SOLURI MESERVE
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October 23, 2015

SENT BY U.S. MAIL & EMAIL (Karen.Toth@dtsc.ca.gov)

Karen Toth
Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, 94710-2721

RE: Mission Bay Development Contamination – Request for Immediate Oversight

Dear Ms. Toth:

This letter is submitted on behalf of the Mission Bay Alliance[1] ("MBA") regarding potential ongoing threat of exposure to Class I and Class II hazardous materials at the proposed Golden State Warriors Arena and Entertainment Center ("project") located in Mission Bay, San Francisco.[2] The Final Environmental Impact Report was released today[3] and the project is currently scheduled for approval on November 3, 2015 by the Office of Community Investment and Infrastructure; ground disturbing activities could occur soon after that. As explained below, the San Francisco Regional Water Quality Control Board ("Board") has failed to adequately manage the risks posed by the site. Thus, MBA respectfully requests that Department of Toxic Substances Control ("DTSC") immediately take over the hazardous materials management at this site to protect human health and the environment.

Jurisdictional Discussion

In 1997, the California EPA Site Designation Committee designated the Board as the administering agency for the site.[4] This site appears to be covered under the Board's

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[1] The Mission Bay Alliance is an organization dedicated to preserving the environment in the Mission Bay area of San Francisco with respect to the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 (a.k.a. Warriors Arena and Entertainment Center).

[2] The subject area bounded by 16th Street, 3rd Street, Illinois Street and Terry A. Francois Boulevard, which are blocks 29-32 located in San Francisco, California; approximate Latitude/Longitude: 37.76797 N-122.38753 E.

[3] See http://www.sf-planning.org/index.aspx?page=1828.

[4] Cal EPA Site Designation Committee Resolution No. 97-10, June 26, 1997.

open case number 38S0044, Mission Bay Development Area for threats of Diesel, Gasoline, Heating Oil/Fuel Oil and Lead, which appears to overlap with and include a portion of open case number 38S004, Pier 64 Metals/Heavy Metals, Petroleum/Fuels/Oils, Polycyclic Aromatic Hydrocarbons (PAHs). Order number R2-2005-0028 was later rescinded for separate phase petroleum hydrocarbon products. Those cases and Orders have been used to attempt by the project proponent to describe a site as fully suitable for immediate development and construction without any further environmental analysis.

Site Description

This site is currently a complex of pits, bare ground, parking lots, wetland features, and poorly covered soil stockpiles. Some of the stockpile covers have visible damage, with plants poking through them and large tears, exposing friable piles of materials, which appear to have been previously identified as contaminated by a variety of toxic and hazardous chemicals.

This site was previously used for "bulk fuel storage and distribution; railroad operations; a machine shop; boilerhouse; steel mill; well casing manufacturer; warehousing, shipping and receiving operations for a variety of products; fruit cannery, junk yards vehicle parking and maintenance facilities and a ready-mix concrete facility." (Notice of Preparation/Initial Study "NOP/IS," p. 115.)[5] Even the 1998 Supplemental Environmental Impact Report ("1998 SEIR") acknowledged that the Project site could contain other contaminants and that insufficient surveys at that time had been performed to characterize the contamination and resulting risk. (1998 SEIR, pp. V.J.1 – 110.)[6] With respect to metals, for example, the 1998 SEIR stated, "All 17 metals that were included in the list of analytes tested . . . were detected in varying concentrations in soil throughout Mission Bay South." (1998 SEIR, p. V.J.36.) The same was true for asbestos and creosote as well. (1998 SEIR, pp. V.J.15 – 16.)

Some limited new information has been developed by the site developer, including the Phase II Environmental Site Assessment prepared by Langan Treadwell Rollo, dated June 2015 ("2015 Phase II Report"), that identifies additional contamination following the 1998 SEIR. (Exhibit A, BSK HazMat Report, comments A3, A4, B3, B4.) The 2015

[5] Available at: http://gsweventcenter.com/Pre-Draft_SEIR_CEQA/2014_1119_NOP.pdf

[6] Available at: http://gsweventcenter.com/MissionBay_1998/1998_0917_MISSIONBAY_%20SEIR_VOL_IIA.pdf

Phase II Report analysis itself is suspect, given the inconsistency and variation in sampling intervals, incomplete and episodic list of analytes, and even more importantly, frequency of analyte application. Regardless, it demonstrates significant hazardous chemical impacts to site soils, which require the DTSC's review.

Based in part upon review of the 2015 Phase II Report, the BSK HazMat Report explains that additional hazardous waste materials were actually imported onto the Project site during petroleum hydrocarbon remediation activities in 2005. Specifically, contaminated construction debris and other hazardous waste were used as backfill in 2005 in apparent violation of the Mission Bay remedial management plan ("RMP" or the revised-remedial management plan "RRMP"). (BSK HazMat Report, comments A3, B5.) While the prior Mission Bay RMP/RRMP (as modified) may have allowed the movement and reuse of certain levels of contaminated soils, "DTSC's determination does not apply to building debris or waste soils or other waste materials for any necessary remediation activities." (BSK HazMat Report, comments A3.) In other words, while the occurrence of petroleum hydrocarbon contamination may have been reduced as a result of subsequent remediation activities, the occurrence and associated risk posed by other forms of contamination actually *increased* following the 1998 SEIR. While the 1998 SEIR could not have addressed this new contamination because it occurred in 2005, this does not excuse the omission of this critical information from the NOP/IS and DSEIR.

The Bay Area Air Quality Management District ("BAAQMD") recently collected a sample from one of the poorly managed stockpiles at the site and identified that it contained asbestos above the regulatory limits. This single site inspection by an independent regulator identified a new hazard that had never been identified or disclosed by the Board. Some of these materials appear to be present in the storm drains and on the street itself. The Best Management Practices ("BMPs") to reduce or eliminate these releases are in poor and unmaintained condition for months despite a formal request by our firm to the Board to meet the legal requirements.

Board's Failure to Provide Oversight

While reviewing publicly available documents about the site, we found that there have been citizen complaints, as well as complaints from the City of San Francisco and the Port, which eventually the Board issued a Notice to Comply in 2002. It appears that the last site visit by the Board staff was on July 16, 2013 for Site Visit/Inspection/Sampling, but that information is not on GeoTracker or in the files received through a Public Records Act request. Further, the Board issued on March 18, 2015, a courtesy notice to Catellus for failure to submit timely information to GeoTracker by April 20, 2015. These documents have not been posted. We are also aware of

additional soil and groundwater sampling by various consultants at the site since 2015, which are not posted on the Geotracker website. (See Exhibit A, BSK Technical Memorandum.) In addition, review of the Storm Water Multiple Application and Report Tracking System ("SMARTS") website, shows what appears to be a pattern of the Board's acceptance of incomplete and/or incorrect material for the site's Stormwater Management, and a failure to require annual reports.

Reviewing the minimal pattern of documentation (6 memos, including the citizen complaint) and site inspections (only 1) since 2005, it appears that there has been no site management by the Board for the *entire* Mission Bay Redevelopment Area. Even if the site's activities were consistent with the RMP/RMMP, that does not excuse the need for continued site control under the Clean Air Act and Clean Water Act, and the need to protect human health and the environment.

The overall development area has had multiple releases to the environment from historic activities, and it is entirely unclear how and whether risks would be managed during project construction. Though the Board has authority over the clean-up activities, it has consistently failed to exercise its due diligence in the protection of human health and the environment from both the original hazardous materials, as well as the remobilized material from its remedial operations. Indeed, it appears that the complex comingling of hazardous materials at the site has resulted from poor site investigation and characterization, within-site hazardous material tracking, backfilling, and site control. In addition, there is little to no control of its waste and site control process ranging from site inspections, reviews, and documentation. Either the Board never completed any of those activities, or it failed to document them. As such, the Board has proven that it is incapable as acting as an effective site lead. As the Board has failed to carry out its duties, action by DTSC is now necessary to protect public health and the environment.

Risks from Currently Proposed Project

The NOP/IS prepared for the currently proposed project[7] asserts that there is no remaining soil and groundwater contamination issue because, following the 1998 SEIR, remediation occurred in compliance with the Board Order R2-2005-028, which was ultimately rescinded in 2014. (NOP/IS, pp. 117-118.) What the NOP/IS fails to mention, however, is that Order R2-2005-028 and the subsequent remediation effort *solely*

[7] Though Hazards and Hazardous Materials are discussed briefly in the NOP/IS, the DSEIR prepared for the project does not address Hazards and Hazardous materials impacts and instead relies entirely on the analysis provided in the 1998 SEIR.

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addressed petroleum contamination, and no other contaminants onsite.[8] Nor did it address the use of backfill contaminated with other constituents. The site has not been cleaned up for heavy metals, PAH or PCBs.

The limited nature of the prior remediation effort is further demonstrated in the subsequently-prepared RRMP dated August 2006 ("2006 RRMP"). As the BSK HazMat Report explained:

> [T]here was no discussion of the semivolatile organic chemicals that were detected in soil and groundwater at the site. Summary tables presented in Appendix A of the RMP indicate that polycyclic aromatic hydrocarbons (PAHs) were detected in the soil at various locations and in groundwater collected from MW-11. A possible source and significance of the PAHs was not presented in the RMP.

(BSK HazMat Report, comment B2.)

The 2015 Phase II Report shows that significant amounts of both previously-existing and subsequently-imported hazardous waste remain on the site today. Backfill used in this area contained Class 1 and 2 hazardous materials that were not present before the excavation and partial removal of petroleum contaminated materials. These materials are not addressed in the RMP/RMMP. The Board allowed this material to be placed in direct contact with the groundwater and it was only identified after MBA independently researched this question with its own consultants. (Exhibit A, BSK HazMat Report, comments A3, B5.) Substantial further investigation is necessary to assess the extent and nature of the groundwater contamination created by the backfill materials. The Board still has not addressed this issue.

The presence of this existing hazardous waste raises many unaddressed issues. First, it appears that this hazardous waste will need to be excavated and removed in order to construct the proposed project: "Significant volumes of soil

[8] This RWQCB's subsequent Order R2-2014-0022 was limited in scope, and explained that the prior order only "address[ed] the existence of separate phase petroleum hydrocarbons products." Further, Order R2-2014-0022 also clearly focused on petroleum contamination explained that rescission of that prior order was appropriate because, "Post-remediation groundwater monitoring has shown that the residual petroleum products have very limited impact on the groundwater beneath the site." (Order R2-2014-0022.)

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classified as hazardous waste will need to be transported offsite and disposed at an appropriate facility causing significant additional impacts during the construction phase." (Exhibit A, BSK Hazmat Report, comment C1.) The maximum depth of excavation on-site would be approximately 30 feet below San Francisco City Datum; this would require approximately 350,000 cubic yards of soils onsite to be excavated and removed from the site. (2015 NOP/IS, p. 17.) It is not clear how the NOP/IS estimate was derived, or how it relates to the actual excavation needed for purposes of removing contaminated soils.

The large quantity of soil that is known to be contaminated with Class 1 and 2 hazardous waste has not been managed safely to this point, and is likely to be shuffled around the site and the surrounding area. Specifically, the soil may be used as backfill, and for berms both onsite and at the City's Bayfront Park (3.2 acres of open space). The Board has not identified how the material is tracked and segregated at the site, or why contaminated backfill was placed at the site during the petroleum cleanup activities.

Additionally, the health risk screening levels in the 1998 RMP (and included in the 2006 RRMP) are also extremely outdated and do not adequately protect the public. MBA retained an independent toxicologist to investigate the applicability and effectiveness of the screening levels in the RMP/RMMP that were relied upon for the proposed development project. The attached report prepared by Damian Applied Toxicology, LLC ("Damian"): (1) provides updated screening levels for the constituents at the site; (2) provides newly applicable screening levels that did not exist at the time of the 1998 EIR; (3) compares the new and old screening levels; and (4) compares the updated screening levels to the most recent site investigation data from the Project site. (See Exhibit B, Damian Report.) The Damian Report shows that the prior screening levels are completely outdated and do not protect public health. Using updated screening levels that address a wide range of relevant potential receptors and exposure pathways, the Damian Report concludes that 19 chemicals (18 in soil and 1 in groundwater) that were detected in the 2015 Phase II investigation at the site exceed at least one screening level.

Thus, present contamination poses potentially significant hazards due to impacts to the shallow water table, risks to construction workers exposed to site soils, including backfill, risks to commercial workers at the planned development project, and risks from transport and disposal of this hazardous waste, to the extent it may be taken off site. These hazards are not addressed in the RMP/RRMP.

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Request for Immediate Action

Because of the threat posed by ongoing releases of known Class 1 and 2 hazardous materials, and the immediate plans to conduct major earth moving activities at the site prior to having appropriate regulatory controls in place, MBA requests that DTSC re-engage as direct overseer of hazardous materials at the site. Such oversight could include independent sampling of the stockpile materials, requiring replacement and maintenance of the BMPs, and updating of the site BMP and waste management policies under the RMP/RRMP. We further request that DTSC use the attached Damian Applied Toxicology, LLC updated screening levels analysis as a part of its examination to ensure that human health and the environment are protected.

Please contact me with any questions regarding the information contained in this letter. I would also respectfully request a response within one week to this time-sensitive request for oversight.

Very truly yours,

SOLURI MESERVE
A Law Corporation

By:
Osha R. Meserve

ORM/mre

Attachments: Exhibit A, BSK HazMat Report
Exhibit B, Damian Applied Toxicology, LLC Report

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EXHIBIT A

O-MBA16S6

BSK Associates Engineers & Laboratories

3140 Gold Camp Drive, Suite 160
Rancho Cordova, CA 95670
P 916.853.9293
F 916.853.9297www.bskassociates.com

Via U.S. Mail and Email (Osha Meserve osha@semlawyers.com)

July 22, 2015 BSK Project Number E0906601S

Soluri Meserve
1010 F Street, Suite 100
Sacramento, CA 95814

Subject: Draft Review
Hazardous Materials
Mission Bay Project
San Francisco, California

Dear Ms. Meserve:

At the request of Soluri Meserve, BSK Associates (BSK) reviewed the following documents:

A. **Mission Bay Subsequent Environmental Impact Report, Dated September 17, 1998, Sections:**
   - Chapter V.J.1 to V.J.109, Environmental Setting and Impacts, Contaminated Soils and Groundwater
B. **Risk Management Plan (RMP), Mission Bay Area San Francisco, California, Dated May 11, 1999, Prepared by Environ Corporation and Revised Risk Management Plan, August 2006 Prepared by BBL Environmental Services, Inc.**
C. **Notice of Preparation of an Environmental Impact Report, Event Center and Mixed-Use Development at Mission Bay Blocks 29-32, Dated November 19, 2014**
   - Pages 106 to 122
D. **Draft Subsequent Environmental Impact Report, Blocks 29-32, June 5, 2015**
   - Pages 1-60 to 1-62, Summary of Impacts and Mitigation Measures, Hazards and Hazardous Materials
   - Page 5-1
   - Page 6-5

The following section (A1 to A4) presents our comments based on a review of the Mission Bay Subsequent Environmental Impact Report, Dated September 17, 1998

A1. Section V.J.42, Under Existing Human Health Risks, states " ENVIRON compared the maximum concentration of chemicals detected in the soil anywhere in the Project Area to the risk-based preliminary remediation goals (PRGs) developed by U.S. EPA Region IX for the protection of industrial land uses (Region IX Industrial PRGs)." EPA PRGs are currently not considered appropriate for use in the San Francisco Bay Area as site screening levels. PRGs have been replaced by Environmental Screening Levels (ESLs) developed by the San Francisco Bay Regional Water Quality Control Board in 2013 (SFBRWQCB, 2013). The ESL user guide (SFBRWQCB, 2013) identified significant differences between EPA PRGs and SFBRWQCB ESLs, listed below:

"The U.S. EPA Regional Screening Levels or RSLs (formerly PRGs; U.S. EPA, 2013d) address human health concerns associated with direct exposure to chemicals in soil, but do not address ecological concerns. Exposure routes and receptors not addressed by the RSLs, but included in the ESLs are listed below:

- direct-exposure screening levels for construction and trench workers' exposure to subsurface soils;
- groundwater screening levels for vapor intrusion;
- groundwater screening levels for the protection of aquatic habitats/surface water quality
- soil screening levels for urban area ecological concerns;
- soil and groundwater ceiling levels to address potential presence of Non-Aqueous Phase Liquids (NAPL) and nuisance odor concerns
- soil and groundwater screening levels for Total Petroleum Hydrocarbons (TPH)."

Using PRGs would lead to significant gaps in determining the risks from impacts with respect to vapor intrusion, of aquatic habitats/surface water quality and urban area ecological concerns.

A2. Section V.J.43 first paragraph states: "The upper numerical limit of a calculated statistical average of the concentration of each COPIC in the exposed soils was compared with Region IX Industrial PRGs to determine if any PRGs were exceeded." The appropriate use of an averaged concentration typically involves a robust statistical analysis based on a statistically sufficient number of samples with respect to the area size and requires normally distributed values. The number of samples utilized in the analysis appears to be insufficient considering the large area of the project.

A3. Section V.J.53 last paragraphs states: As discussed in more detail in "General Soil Movement and Transport During Construction," below, DTSC has determined that soils excavated during construction in the Mission Bay Project Area can be moved around and reused in the Project Area without triggering hazardous waste management requirements, provided the soils are managed in accordance with RMP measures. However, DTSC's determination does not apply to building demolition debris or waste soils or other waste materials from any necessary remediation activities. In the event these wastes contain levels of constituents that would result

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in their classification as hazardous waste, the hazardous waste regulations described above would apply to those materials."

Based on our review of the boring logs recent Phase II Environmental Site Assessment (Langan, 2015), it appears that soil with construction debris was used as fill during the 2005 remediation effort for the Pier 64 clean-up. Our review of the Langan 2015 report boring log soil descriptions indicates that near surface soils at boring locations LB-8, LB-12, LB-26 and LB-29 contain brick fragments. These borings were completed in the area of the Pier 64 clean-up that reportedly removed petroleum impacted soil to a depth of 9 feet and filled in the area (Langan 2015). Furthermore, as stated in B7 below, the area of fill from the Pier 64 clean-up may contain soil impacted with soluble lead that would classify it as a California Hazardous Waste.

The presence of brick, that is probably demotion debris, and soluble lead in the fill material placed during the Pier 64 clean-up effort, indicates that the Risk Management Plan (RMP) or implementation of the RMP, was ineffective and did not comply with the DTSC determination listed above.

A4. Section V.J.83 under Human Health Risk Assessment states: "The SSTLs were developed using methods consistent with the Risk-Based Corrective Action (RBCA) methodology, as developed by the American Society for Testing and Materials (ASTM) and described in ASTM E-1739, 'Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites, 1995'."

Use of the RBCA methodology may be valid for areas impacted with petroleum hydrocarbon related releases. In other non-petroleum release areas, chemicals-of-concern, such as metals and PAHs not related to petroleum hydrocarbons were detected in soil or groundwater. Use of SSTLs developed for petroleum site based RBCA for non-petroleum related constituents may not be a valid approach. Furthermore, 1995 ASTM E 1739-95 standard under Section 1.1 Scope states: "Ecological risk assessment, as discussed in this guide, is a qualitative evaluation of the actual or potential impacts to environmental (nonhuman) receptors."

Summary of Review 1998 - Mission Bay Subsequent Environmental Impact Report

The Mission Bay Subsequent Environmental Impact Report (SEIR), dated September 17, 1998 utilized screening level methods (EPA PRGs) that would not be adequate for current site clean-up standards and would not be appropriate for use on non-petroleum related constituents. The number of samples utilized in the analysis appears to be insufficient considering the large area of the project. Risk Management Plan (RMP) or implementation of the RMP, was ineffective and did not comply with the DTSC determination. Furthermore, the methodology used to develop site risk screening values did not properly incorporate ecological receptors. Given these changes and deficiencies, with consideration of current site conditions, a re-evaluation using current methods and standards of the environmental impacts and risks is required.

The following section (B1 to B7) presents our comments based on a review of the Risk Management Plan (RMP), Dated May 11, 1999 and Revised RMP dated August 2006.

B1. Page 2-1, there was no discussion of the semivolatile organic chemicals that were detected in soil and groundwater at the site. Summary tables presented in Appendix A of the RMP indicate that polycyclic aromatic hydrocarbons (PAHs) were detected in the soil at various locations and in groundwater collected from MW-11. A possible source and significance of the PAHs was not presented in the RMP.

B2. Page 2-2, the RMP states "No chemicals were detected at concentrations that would pose a threat to human health or the aquatic ecosystem following the completion of the planned development, with the potential exception of the Free Product Area." Based on our review of the receptors presented in Appendix E, Tables E-1, E-2. E-3 and E-4, it appears that ecologic receptors were not included in the risk assessment.

B3. Page 3-2, Section 3.2 states: "In addition, mean chemical concentrations in surface soil (estimated by calculating the 95 percent upper confidence limit (UCL) of the arithmetic mean) were below the ITLs developed under assumptions of long-term (i.e., 25 to 30 years) direct contact pathways (i.e., soil ingestion and dermal contact)." The use of mean concentrations typically involves a robust statistical analysis based on a statistically sufficient number of samples with respect to the area size. The number of samples utilized in the analysis appears to be insufficient considering the large area of the project. Furthermore, the depth of soil sampling was limited to samples collected at less than five feet below the ground surface (bgs). Proposed developments may require excavating soil to depths significantly deeper than 5 feet bgs. This may expose receptors to soils that have not been adequately characterized. The recent Phase II Environmental Site Assessment (Langan, 2015) performed additional soil sampling at Blocks 29 to 32 and found "The fill unit was characterized as either a State of California Class I hazardous material based on soluble chromium, lead, and nickel concentrations or a Class II non-hazardous material, likely related to debris from the 1906 earthquake and resulting fire." Designation of the site soils as California Class I hazardous waste is a significant change from what was presented in the 1998 RMP. Additional impacts that would result from excavating and transportation of a large volume of soil for off-site disposal at a Class I disposal site were not evaluated in the 1998 Subsequent Environmental Impact Report (SEIR).

B4. Page 4-1, Section 4.1 states: "As described below in Section 4.3.11, additional sampling may be required on individual development parcels in order to comply with the Ordinance Requirements for Analyzing the Soil for Hazardous Wastes in Appendix F. Depending on the results obtained during any additional sampling, supplemental management measures, in addition to the management measures identified below, may be required on a parcel-by-parcel basis." The RMP specified a deferred sample and analysis protocol to a later date and as stated in section A4 above, deferred analysis may produce dramatically different results. Significant volumes of soil classified as hazardous waste will need to be transported off-site and disposed at an appropriate facility causing significant additional impacts during the construction phase.

B5. Section 4.3.5.3 indicates that excavated soil may be re-used as fill on-site. There is no contingency for the handling of excavated wooden piles or railroad ties that may be treated with wood preservatives (creosote) that may be classified as a RCRA hazardous waste. Creosote

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often contains polycyclic aromatic hydrocarbons (PAHs), some of which are listed RCRA hazardous waste constituents.

B6. Section 4.3.5.3 allows for re-use of soils that may potentially be hazardous waste as fill inside the RMP. Based on our review of the recent Phase II Environmental Site Assessment (Langan, 2015), it appears that soil with elevated lead levels were used as fill during the 2005 remediation effort for the Pier 64 clean-up. Shallow soil samples collected from Langan Treadwell Rollo borings LB-12, LB-13, LB-26, LB-27, LB-28, LB-29 and LB-30 had results of soluble lead (California Waste Extraction Test) above the California Soluble Threshold Limit Concentration (STLC) that would classify the soil as hazardous waste. These soil samples were collected in the Pier 64 clean-up fill area (See Figure 2 of Langan 2015 report) at depths of less than 9 feet below the ground surface (bgs). The Pier 64 clean-up reportedly removed petroleum impacted soil to a depth of 9 feet and filled in the area (Langan 2015). The re-use of soil that is classified as hazard waste resulted in a significant volume of soil that, if excavated and removed from the RMP area will need to be transported off-site and disposed at an appropriate facility. These are new and additional impacts not previously incorporated into the impact analysis. These additional impacts must be incorporated into additional risks to receptors outside the RMP as well as additional traffic, noise, and air contaminants.

B7. Page 4-22 states "If the levels are below the relevant health-based Site Specific Target Levels (SSTLs), and the RWQCB concludes that the potential for ecological impacts is insignificant and does not require mitigation, then soil removal activities will not be required and the soil may be temporarily stored elsewhere pending reuse in the RMP Area." Based on our review of the receptors presented in Appendix E, Tables E-1, E-2. E-3 and E-4, it appears that ecologic receptors were not included in the risk assessment.

Summary of Review 1999 - Risk Management Plan

The Risk Management Plan (RMP), dated May 11, 1999 and Revised RMP dated August 2006 failed to properly identify possible sources and significance of the PAHs and did not have disposal protocols for PAH containing wastes. The site specific target levels developed for the site did not include ecological receptors. The RMP utilized an insufficient number of samples and questionable statistical analysis techniques considering the large area of the project. The RMP did not have developed protocols for addressing off-site disposal of large volumes of soil that is currently classified as California Class I Hazardous Waste.

The following section (C1 to C2) presents our comments based on a review of Notice of Preparation of an Environmental Impact Report/Initial Study (NOP/IS), Dated November 19, 2014.

C1. Page 106 under Topics: 16. Hazards and Hazardous Material – Would the project: a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? Is listed as "No New or More Severe Significant Effects." As stated in A4 above this is in direct conflict with the findings of the recent Phase II Environmental Site Assessment (Langan 2015). Significant volumes of soil classified as hazardous waste will

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need to be transported off-site and disposed at an appropriate facility causing significant additional impacts during the construction phase. The transportation of hazardous waste off-site will increase the potential for items b) and c) on page 106. Excavation and transportation of soil to a Class I hazardous waste disposal site would significantly increase the potential for release of hazardous materials during the loading, excavation and transportation process. The additional trucking will cause additional exposures to exhaust fumes, traffic and noise. The additional impacts related to off-site transportation of hazardous waste will require further evaluation.

C2. Page 114 introduces Mitigation Measure M-HZ-1b: "Geologic Investigation and Dust Mitigation Plan for Naturally Occurring Asbestos." M-HZ-1b is a new mitigation measure for an impact that was not addressed in the 1998 SEIR. The new hazards associated with Naturally Occurring Asbestos (NOA) conflicts with the designation of "No New or More Severe Significant Effects" on items 16 a), 16 b) and 16 c) listed on page 106 of the NOP.

Summary of Review 2014 Notice of Preparation of an Environmental Impact Report (NOP)

The Notice of Preparation (NOP), dated Novemeber 19, 2014 failed to identify new or more severe significant effects with respect to the large volume of soil classified as Class I hazardous waste that will require off-site disposal at a Class I Hazardous Waste Disposal Facility. New mitigation measures for naturally occurring asbestos were not properly identified as new or more severe significant effects.

The following section (D1 to C4) presents our comments based on a review of the Draft Subsequent Environmental Impact Report, Blocks 29-32, June 5, 2015.

D1. Page 1-61 under Hazards and Hazardous Materials, Initial Study Section E16, does not include the findings in the recent Phase II Environmental Site Assessment (Langan, 2015) with respect to significant volumes of soil classified as hazardous waste that will need to be transported off-site and disposed at an appropriate facility causing significant additional impacts during the construction phase. These additional impacts were not previously included in the impact analysis.

D2. Page 1-61 Impact HZ-2, under Mission Bay FSEIR Mitigation Measure J.2, the RWQCB is listed as the agency responsible for reviewing risk evaluations for a public school or child care facility. The Department of Toxics Substances Control (DTSC) School Property Evaluation and Cleanup Division is the responsible agency for assessing, investigating and cleaning up proposed school sites (DTSC, 2015).

D3. Page 5.1-1 under 5.1.1 Scope of Analysis, Issues Scoped Out in the Initial Study, states "The Initial Study determined that the following topics were adequately analyzed in the Mission Bay FSEIR such that the proposed project would have no new significant impacts or no substantially more severe significant impacts than those previously found significant on these resources:… Hazards and Hazardous Materials;…" As stated in C1 above significant volumes of soil classified as hazardous waste will need to be transported off-site and disposed at an appropriate facility

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Martin B. Cline, C.E.G. – Project Geologist

LiDAR to develop a Digital Elevation Model (DEM) for 21 linear miles of Putah Creek for USACE NWP-27 and for a Regional General Permit.

Cache Creek Plans, Yolo County, CA – Provided GIS support. LiDAR vegetation analysis for patch and trajectory modeling, as well as channel migration studies, to technical advisors for approximately 19.5 miles of restoration planning for the Cache Creek Yolo County Resource Management Planning Area.

Professional Organizations

American Society of Civil Engineers

Association of Environmental and Engineering Geologists

ASFE - Professional Firms Practicing in the Geosciences

URISA-Northern California Urban and Regional Information Systems Association

BSK

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Kurt Balasek, PG, CHG, QSD – Senior Hydrogeologist

Professional Background:

Mr. Balasek is the Sacramento Senior Hydrogeologist for BSK. He has more than 25 years experience providing geologic, hydrogeologic and environmental consulting to western U.S. businesses and government agencies. His experience includes managing teams of scientists and engineers on projects ranging from large-scale brownfield developments, CEQA compliance and groundwater studies. He has provided project management of water resource evaluations and conjunctive use studies, as well as numerous petroleum hydrocarbon-related groundwater contamination investigations and remedial designs. Mr. Balasek has completed geologic hazard studies for proposed school sites in accordance with the Office of State Architect requirements and has completed detailed geologic surface mapping assignments in the foothills of the Sierra Nevada.

Mr. Balasek has spent his career working to evaluate hundreds of properties for the purposes of development, redevelopment and preservation as conservation easements. Conducting or leading these evaluations has given Mr. Balasek vast experience preparing site investigation strategies with an emphasis toward negotiating with regulatory agencies regarding future land use. Mr. Balasek has worked with redevelopment teams in numerous northern California cities and extensively under EPA community-wide assessment grants in the Cities of West Sacramento, Esparto, and Rancho Cordova. He has worked with local, State, and Federal agencies in evaluating a wide range of environmental contaminated and lighted, assessing community needs, and using tools to develop site cleanup goals. His skills of using land use covenants and maintenance tools provides for blighted property that have led to showcases community revitalization efforts. Mr. Balasek has completed numerous landfill characterization studies and provided detailed analysis to assist in consolidation and clean closure decision making.

Representative Project Experience:

City of Rancho Cordova, California, Community Redevelopment Agency, Brownfield Assessments-Mr. Balasek provided senior management oversight on a community-wide assessment of over 460 properties in Rancho Cordova, California. Approximately 30 parcels warranting Phase I and/or Phase II Environmental Site Assessments (ESAs) were identified. To date, a Phase I and II ESA were conducted on two parcels of a planned community college campus.

Qualifications

Registrations:

Professional Geologist, California, No. 6162

Certified Hydrogeologist, California, No. 299

Education:

MS, Hydrogeology, California State University, Chico 1989

BA, Geology. University of California, Santa Barbara, 1985

Experience:

BSK Associates 2009

1991-2009, Wallace-Kuhl Director of Environmental Services

1989 – 1991 Terrestrial Tech. Senior Staff Hydrogeologist

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Kurt M. Balasek, PG, CHG, QSD– Senior Hydrogeologist

Putah Creek Park North Bank Improvement Project, California-The North Bank Improvement Project stemmed from a federal appropriation of 2 million dollars to enhance the Solano County Transportation Department's automobile bridge replacement at the City of Winters. The project funds are administered by **CalTrans** so extensive coordination with this agency regarding project description and permitting has been a substantial portion of this project. The project was developed by the City of Winters. Mr. Balasek and his team were initially tasked with obtaining the biological opinion for mitigation as it related to disturbance of Valley Elderberry shrubs. Instead of purchasing mitigation credits from a Service-approved mitigation bank, Mr. Balasek and his staff devises a unique plan to develop a small on-site mitigation area within the Winters Putah Creek Nature Park. If approved, the mitigation area will provide enough mitigation credits to offset the Solano County Bridge project, the north bank improvement project and a proposed pedestrian bridge. Money will be set aside for maintenance of the mitigation area in perpetuity but will enable the project proponents to mitigate habitat damage locally and keep local control of the money. To develop this plan, Mr. Balasek and his team developed the financial model to predict the amount of money required to establish a non-wasting endowment. This model was submitted to USFWS and is undergoing review. U.S. Representative Mike Thompson and his staff are involved in the project and are assisting with negotiations with USFWS.

Winters Putah Creek Park Revised Master Plan CEQA Support- Winters, California-Mr. Balasek and his team prepared the Initial Study/Mitigated Negative Declaration (IS/MND) based on the revised master plan for Winters Putah Creek Park. This document was compiled in advance of implementing several projects outlined in the park master plan. The document was reviewed by the Winters City Council and adopted by the Winters planning commission without comment by the trustee agencies and with only one comment from the public. The document framed the foundation for environmental permitting for all of the following restoration-related projects.

City of West Sacramento, Housing and Community Investment Division, West Sacramento, California-Mr. Balasek has managed several Environmental Projects for the City of West Sacramento, including: West Capitol Corridor Study, 427 "C" Street, Tower Court, Sacramento Generator, and Vlad's Toyota.

City of Winters PG&E Training Center, Winters California-During critical property negotiations, due diligence studies revealed the historic presence of an underground fuel storage tank. Me. Balasek we retained by the City on an emergency basis to advise City Council and staff. Mr. Balasek mobilized BSK resources and conducted a comprehensive, soil, groundwater and soil vapor investigation on the site. Mr. Balasek also advised the City throughout the project and represented the City in numerous negotiations with PG&E. As a result of a well planned and executed investigation, a $70 million state-of-the-art training facility project is moving through the CEQA process and is scheduled to break ground late in 2015. This project is a huge success for the small City of Winters and will act as a catalyst for a downtown hotel project. Mr. Balasek's work in the field and at the negotiating table were a key part of the success of this project.

Kurt M. Balasek, PG, CHG, QSD– Senior Hydrogeologist

Stockton Worknet Center, Stockton, California-Provided project management for a contaminated site. The site characterization and remediation was funded by a State of California Brownfield Grant. The source of contamination was determined to have come from a pipeline located under railroad tracks. Removal and backfill of soil from an excavation that was 35 feet wide by 400 feet long was completed prior to construction of the new center.

River City Baseball – River Cats Stadium, West Sacramento, California-The site was located adjacent to a chemical mixing plant and as part of the owner's due diligence an environmental assessment was conducted. Contamination of volatile organics was determined and remediation followed. Based on these findings the foundation design was also adjusted to accommodate shallow groundwater. Based on Mr. Balasek's recommendation, Gorsorb™, a passive form of soil vapor testing, was used to delineate the contamination. A Risk Assessment report was provided to determine if the level of contamination exposure based on the properties intended use. All this work was completed at an accelerated pace to facilitate construction.

Colusa County, Three UST Sites, Colusa, California-Underground storage tanks at the County Sheriff's Department, Central Services, and County Jail were removed soil and water samples were tested for contamination. As project manager, Mr. Balasek managed the team who provided soil excavation and shallow groundwater monitoring for petroleum hydrocarbons. The three projects took place concurrently resulting in a cost savings to the county.

Sacramento International Airport Terminal Construction, Sacramento, California-Mr. Balasek and his team installed monitoring wells and conducted aquifer performance tests in advance of massive dewatering efforts to facilitated construction at the new Sacramento International Airport Terminal project. Data developed from this study was used to quantify discharge volumes and evaluate water quality. The data was subsequently used as the basis for dewatering design related to a large basement structure extending approximately 17 feet below grade for the entire terminal building as well as subterranean tunnel structures. The new Sacramento Terminal opened in the fall of 2011.

Yolo Ranch Agricultural Landfill Remediation, Yolo County, California-Provided project management and oversight during landfill excavation and remediation. This project involved careful coordination with regulatory personnel from the Illegal Abandoned Landfill Group at the former California Integrated Waste Management Board to remove and/or encapsulate a wide range of ag-related waste in the Yolo ByPass. The work involved remediation and subsequent site closure of an agricultural landfill adjacent to sensitive natural habitats. This work was done as part of a property transaction and demonstrated creative problem solving that included an on-site solution which saved the client tens of thousands of dollars.

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Kurt M. Balasek, PG, CHG, QSD– Senior Hydrogeologist

Butte County, California-Mr. Balasek and his team conducted the base-line hydrogeologic analysis of the site vicinity in support of the gravel mining permit application submitted to Butte County. Mr. Balasek's team also conducted the slope stability evaluations for the propose mine. Both technical documents were used to support an EIR commissioned by Butte County on behalf of the project proponent. In addition, Mr. Balasek's team provided consultation on pit capture and anadromous fish entrapment if high water resulted in overtopping of the pit. The work also involved analyzing resource data to identify the bottom of economically recoverable resource.

Cold Spring Rancheria, Tollhouse, California-Mr. Balasek oversaw the preparation of a comprehensive long range water development program for the Cold Springs Rancheria. This program examined available surface and groundwater resources, outlined potential problems with existing infrastructure and water rights and prioritize projects for improvement. Mr. Balasek and his staff also prepared a revised Quality Assurance Assessment Plan (QAAP) for the Rancheria that outlined procedures for all field sampling activities. These plans were funded by the Bureau of Indian Affairs and are required planning documents in advance of project implementation funding.

Professional Organizations

American Society of Civil Engineers
Association of Environmental and Engineering Geologists
ASFE - Professional Firms Practicing in the Geosciences
Water Resource Association of Yolo County
Winters Education Foundation
City of Winters, Putah Creek Park Committee
Solano Resource Conservation District
Groundwater Resources Association of California

BSK

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EXHIBIT B

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DAMIAN APPLIED TOXICOLOGY, LLC
Advanced Assessment of Chemical Risks to Health and the Environment
www.appliedtox.com

Octoboer 20, 2015

Ms. Osha Meserve
Soluri Meserve
1010 F Street, Suite 100
Sacramento, California 95814

Subject: Updated Soil and Groundwater Screening Levels for the Golden State Warriors Arena Construction Project in the Mission Bay South Redevelopment Plan Area, San Francisco

Dear Ms. Meserve:

Your office requested that **Damian Applied Toxicology, LLC (DAT)** develop updated soil and groundwater screening levels for the Golden State Warriors Arena Construction Project and compare those values to both the previous screening levels and site investigation data presented in the *Phase II Environmental Site Assessment* (Phase II) (Langan Treadwell and Rollo [LTR], 2015).

Screening levels are levels of a chemical in environmental media, for example soil or groundwater, which are considered safe for long-term exposure. Screening levels are developed based on the environmental media of interest, the exposed population of interest (e.g. residents or commercial workers), and the relevant exposure pathway (e.g. drinking water for groundwater or dermal contact with soil). Screening levels may be developed to protect human health or ecological receptors (e.g. aquatic and terrestrial wildlife). In most cases, regulatory agencies have already developed screening levels for certain chemicals in soil or water. However, in some cases (e.g. construction workers) no such screening levels have been developed and a risk assessor must develop new screening levels using scientifically-defensible methods and assumptions. Typically, such methods and assumptions are obtained from the United States Environmental Protection Agency (USEPA), the state agency responsible for review of health risk assessments, or a combination of the two.

The previous screening levels were originally presented in the *Risk Management Plan, Mission Bay Area, San Francisco, California* (RMP) (ENVIRON, 1999), and were referenced without revision in the *Revised Risk Management Plan* (BBL, 2006). Risk-based screening levels change fairly rapidly over time due to new developments in the toxicological science underlying such levels, as well as state and federal risk assessment policy changes. In addition, in most cases, screening levels become more stringent over time, not less so. Thus, in the 16 years since the 1999 RMP was prepared many of the originally proposed screening levels have become obsolete and are no longer adequately protective. Finally, the original screening levels did not address construction workers, exposure of indoor workers to volatile chemicals via vapor intrusion, or ecological risks. The purposes of this report therefore, are: 1) to update the 1999 screening levels, 2) provide new screening levels to address ecorisk, construction workers and vapor intrusion, 3) compare the new screening levels to the previous screening levels, and 4) compare the new screening levels to the most recent site investigation data as presented in the Phase II report (LTR, 2015). The following sets of screening levels were therefore developed for all of the chemicals originally listed in the 1999 RMP (as shown in Appendices B and E from that report):

- Soil screening levels for off-site (nearby) residents and on-site commercial workers
- Soil screening levels for on-site construction workers

- Soil screening levels to protect ecological receptors (terrestrial wildlife)
- Groundwater screening levels for drinking water
- Groundwater screening levels to protect indoor workers from vapor intrusion
- Groundwater screening levels to protect aquatic life

Note that since no residential development is planned for the arena project site, screening levels were not developed for on-site residential use.

SCREENING LEVEL DEVELOPMENT

Details regarding the development of the screening levels are provided below.

Soil Screening Levels for Off-Site Residents and On-Site Commercial Workers

Off-site residents located close to the site were identified as a potential receptor population in the 1999 RMP. This receptor would not have direct contact with site soils by either inadvertent ingestion or dermal contact but may be exposed to chemicals released into the air either by resuspension of soil particulates (for non-volatile chemicals such as metals) or by volatilization (volatile chemicals such as benzene). On-site commercial workers, on the other hand, would be directly exposed to site soils by soil ingestion, dermal contact and inhalation.

Updated soil screening levels for these receptors were obtained primarily from the latest version of the United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) (USEPA, 2015). However, if a corresponding Department of Toxic Substance Control (DTSC) value was available for a particular chemical that value was used preferentially (DTSC, 2015). For the off-site resident, exposed only via inhalation, the Inhalation Screening Level was used. It is important to note that both children and adults are taken into consideration in the development of the residential screening levels and the most stringent value protective of both the adult and child was used. For the on-site commercial worker, the screening level reflecting all soil exposure pathways was used. For carcinogenic chemicals the lower of the cancer or non-cancer risk-based value was used. The resulting values for non-volatile chemicals are shown in Table 1. Table 1 shows that many of the updated screening levels (particularly for the on-site commercial worker) are well below (more stringent than) the older 1999 screening levels (as indicated in yellow highlight).

It should be noted that the screening level for arsenic (12 mg/kg) is not health risk-based. The value of 12 mg/kg is based on the upper bound of naturally occurring arsenic in California (Bradford et al., 1996). By convention in California, a background-based value for arsenic is normally used as the screening level for arsenic at contaminated sites instead of a health risk-based value (California Environmental Protection Agency [CalEPA], 2005). This is because a strictly health risk-based value would be well below naturally occurring background levels.

The screening level for lead for on-site commercial workers is the California Human Health Screening Level (CHHSL) of 320 mg/kg (Office of Environmental Health Hazard Assessment [OEHHA], 2009). The same value is also protective of off-site residents as the contribution of inhalation exposure to lead is negligible relative to soil ingestion (DTSC, 2011), and off-site residents would only be exposed via inhalation.

Updated screening levels for volatile chemicals in soil are shown in Table 2. Table 2 shows that virtually all of the updated screening levels for both off-site resident and on-site commercial worker are well below the older 1999 screening levels (as indicated in yellow highlight).

Soil Screening Levels for On-Site Construction Workers

The 1999 RMP did not address construction workers. However, construction workers have higher levels of exposure to soils than either residents or commercial workers. Therefore, screening levels for this receptor population are warranted.

Neither USEPA nor any California regulatory agency has developed risk-based screening levels for construction workers. However, USEPA has established calculation methods for developing such levels (USEPA, 2002 and 2015), and the California DTSC has established default exposure parameters for construction worker risk assessment that can be used in the USEPA equations. The soil construction worker equations presented in USEPA (2015) were used to calculate soil screening levels for the construction worker. Screening levels were calculated assuming worker exposure via soil ingestion, dermal contact with soil, and inhalation. The screening levels were calculated using the DTSC exposure parameters shown in Table 3. Toxicity criteria used in the calculations were obtained first from DTSC (2015), and if not available from DTSC (2015), from USEPA (2015). For carcinogenic chemicals the lower of the cancer or non-cancer risk-based value is shown as the final recommended screening value. The resulting screening levels for non-volatile chemicals are shown in Table 4. Note that the screening level for arsenic was assumed to be 12 mg/kg, as discussed previously. The screening level for lead for on-site construction workers was assumed to be the commercial/industrial worker CHHSL of 320 mg/kg (OEHHA, 2009). Screening levels for volatile chemicals are shown in Table 5.

Soil Screening Levels for Protection of Ecological Receptors

The 1999 RMP did not include any ecorisk-based soil screening levels, therefore, ecorisk-based soil screening levels for the protection of terrestrial wildlife were obtained from key USEPA references. Available screening levels for non-volatile chemicals and volatile chemicals are shown in Tables 6 and 7, respectively.

Groundwater Screening Levels Based on Drinking Water Exposure

Groundwater screening levels based on human drinking water exposure were considered to be the State of California enforceable drinking water standard, that is, the Maximum Contaminant Level (MCL) (CalEPA, 2015). However, if an MCL was not available for a particular chemical the USEPA RSL for tapwater ingestion was used (USEPA, 2015). The updated groundwater screening levels are shown in Table 8.

Groundwater Screening Levels to Protect Indoor Workers from Vapor Intrusion

The 1999 RMP did not include screening levels to protect indoor workers from vapor intrusion due to volatile chemicals in groundwater. The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), as part of its Environmental Screening Level (ESL) program, has developed groundwater screening levels to protect workers from this type of chemical exposure (SFBRWQCB, 2013). These values are shown in Table 9.

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Groundwater Screening Levels for the Protection of Aquatic Life

The 1999 RMP also did not provide screening levels for the protection of aquatic life from contaminated groundwater. There is a potential for groundwater on the site to daylight or infiltrate into freshwater or estuarine wetlands. Therefore, groundwater screening levels protective of aquatic life were obtained for each of these aquatic habitat types from SFBRWQCB (2013). These values are shown in Table 10.

COMPARISON OF PHASE II DATA TO UPDATED SCREENING LEVELS

Table 11 compares the updated soil screening levels to the maximum soil concentration reported in the Phase II (LTR, 2015). In the Phase II, soils were analyzed in some cases to a maximum depth of 31 ft below ground surface (bgs), but in all cases to at least 10 ft. However, with the exception of barium, the maximum concentrations were all detected within 10 ft bgs. The maximum detected concentration of barium was found at 20 ft; however, this value did not exceed any screening level.

Only those chemicals exceeding at least one of the updated screening levels are shown. Table 11 shows that 18 chemicals exceed at least one of the new screening levels and many of these chemicals exceed more than one screening value. Chemicals exceeding at least two screening levels include arsenic, benzo(a)pyrene, cadmium, lead, and nickel. The greatest exceedances of a screening level were due to lead and nickel. Arsenic was only slightly exceeded (maximum of 13 mg/kg compared to a screening level of 12 mg/kg).

Table 12 shows those chemicals which exceed at least one of the updated groundwater screening levels. Based on the Phase II data, only benzene exceeded a groundwater screening level, and this was based on drinking water exposure.

In summary, using updated screening levels that address a wide range of relevant potential receptors and exposure pathways, 19 chemicals (18 in soil and 1 in groundwater) detected in the Phase II exceed at least one screening level. Of particular importance are lead and nickel due to the significant exceedances of these two chemicals.

CLOSING

Thank you for this opportunity to provide you with our services. Please don't hesitate to call or email should you have any questions or comments regarding this report.

Sincerely,

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Table 1

Updated and Previous Health Risk-Based Soil Screening Levels for the Off-Site Resident and On-Site Commercial Worker Non-Volatile Chemicals

Chemical	Screening Level (mg/kg)			
	Off-Site (Nearby) Resident Updated[1]	Off-Site (Nearby) Resident Previous[2]	On-Site Commercial Worker Updated[1]	On-Site Commercial Worker Previous[2]
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	NA	1,880,000	45,000	69,000
Acenaphthylene	NA	1,250,000	NA	46,000
Anthracene	NA	9,390,000	230,000	347,000
Benz(a)anthracene	41	3,448	2.9	27
Benzo(g,h,i)perylene	NA	1,250,000	NA	46,000
Benzo(a)pyrene	1,300	345	0.29	2.7
Benzo(b)fluoranthene	13,000	3,448	2.9	27
Benzo(k)fluoranthene[3]	34,700	3,448	1.3	27
Chrysene[3]	1,680	34,000	13	272
Dibenz(a,h)anthracene	1,100	328	0.29	7.9
Fluoranthene	NA	1,250,000	30,000	46,000
Fluorene	NA	1,250,000	30,000	46,000
Indeno(1,2,3-cd)pyrene	13,000	3,448	2.9	27
2-Methylnaphthalene	NA	1,250,000	3,000	46,000
Naphthalene	3.8	1,250,000	17	46,000
Phenanthrene	NA	9,390,000	NA	347,000
Pyrene	NA	939,000	23,000	35,000
Polychlorinated Biphenyls				
(as Aroclor 1254)	4.1	NA	0.97	NA
Petroleum Hydrocarbons[4]				
TPH-Gasoline	NA	1,720,000	500	74,000
TPH-Diesel	NA	16,000,000	110	686,000
TPH-Motor Oil	NA	126,000,000	500	5,420,000
Metals				
Antimony (as trioxide)	280,000	12,514	1,200,000	764
Arsenic[5]	1,160	112	12	29
Barium	710,000	4,380	220,000	12,949
Beryllium[3]	1,590	160	21	12
Cadmium[3]	909	90	5.7	191
Chromium (as trivalent)[3]	NA	31,285,714	270,000	1,910,423
Chromium (as hexavalent)	16	2.6	6.3	5.4
Cobalt	420	9,073	350	23,640
Copper	NA	1,157,571	47,000	70,686
Lead[5]	320	10,748	320	4,203
Mercury[3] (as elemental)	0.96	2,691	3.9	164
Molybdenum	NA	156,429	5,800	9,552
Nickel (as soluble salts)	14,700	1,478	1,500	3,145
Selenium	28,000,000	156,429	5,800	9,552
Silver	NA	156,429	5,800	9,552
Thallium (as soluble salts)	NA	2,503	12	153
Vanadium[3]	142,000	219,000	1,500	13,373
Zinc	NA	9,385,714	350,000	573,127

Notes:
[1]All values obtained from the USEPA Regional Screening Levels (USEPA, 2015) unless otherwise noted. Values for off-site resident reflect inhalation exposure only. Values for on-site commercial worker reflect exposure from soil ingestion, inhalation and dermal contact.
[2]Values obtained from ENVIRON (1999).
[3]Values obtained from DTSC (2015).
[4]Values are Environmental Screening Levels (ESLs) obtained from SFBRWQCB (2013).
[5]See text.
NA = Not available.
Yellow highlight indicates that the updated screening level is lower (more stringent) than the corresponding ENVIRON (1999) screening level.

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Table 2

Updated and Previous Health Risk-Based Soil Screening Levels for the Off-Site Resident and On-Site Commercial Worker Volatile Chemicals

Chemical	Screening Level (mg/kg)			
	Off-Site (Nearby) Resident Updated[1]	Off-Site (Nearby) Resident Previous[2]	On-Site Commercial Worker Updated[1]	On-Site Commercial Worker Previous[2]
Acetone	440,000	71,000	670,000	330,000
Benzene[3]	0.35	63	1.4	77
2-Butanone (Methyl ethyl ketone)	64,000	180,000	190,000	800,000
Carbon disulfide	850	11,000	3,500	54,000
Chlorobenzene	340	1,100	1,300	5,600
Chloroform	0.32	340	1.4	410
1,1-Dichloroethane[3]	3.7	1,100	16	1,400
1,2-Dichloroethylene (cis)[3]	21	540	86	2,700
1,2-Dichloroethylene (trans)[3]	212	1,100	860	5,500
Ethylbenzene	6.4	16,000	25	78,000
2-Hexanone (Methyl butyl ketone)	420	370	1,300	1,800
Methylene chloride[3]	6.2	1,900	24	2,300
Styrene	9,700	19,000	35,000	81,000
Tetrachloroethene[3]	1.1	300	2.7	360
Toluene[3]	1,360	6,200	5,400	31,000
1,1,1-Trichloroethane[3]	1,740	15,000	7,300	77,000
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	1,600,000	NA	8,000,000
Trichloroethylene	1.1	630	6.0	760
Trichlorofluoromethane	760	16,000	3,100	80,000
Vinyl chloride[3]	0.03	23	0.15	28
Xylenes	570	110,000	2,400	550,000

Notes:
[1]All values obtained from the USEPA Regional Screening Levels (USEPA, 2015) unless otherwise indicated. Values for off-site resident reflect inhalation exposure only. Values for on-site commercial worker reflect exposure from soil ingestion, inhalation and dermal contact.
[2]Values obtained from ENVIRON (1999).
[3]Updated values obtained from DTSC (2015).
Yellow highlight indicates that the updated screening level is lower (more stringent) than the corresponding ENVIRON (1999) screening level.

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Table 3

Exposure Parameters Used to Calculate Soil Screening Levels for Construction Workers

Exposure Parameter	Value
Body weight (kg)	80
Exposure duration (years)	1
Averaging time (days)	
Non-carcinogenic chemicals	365
Carcinogenic chemicals	25,550
Exposure frequency (days/year)	250
Soil ingestion rate (mg/day)	330
Particulate emission factor (m^3/kg)	1.00E+06
Skin surface area (cm^2)	6,032
Soil adherence factor (mg/cm^2)	0.8

Source: DTSC (2014).

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Table 4

Soil Screening Levels for the On-Site Construction Worker
Non-Volatile Chemicals

Chemical	Non-Cancer Toxicity Criteria[1]		Cancer Toxicity Criteria[1]		ABS_{GI} (unitless)	ABS_D (unitless)	Non-Cancer Screening Level (mg/kg)	Cancer Screening Level (mg/kg)	Final (Lowest) Screening Level (mg/kg)
	RfD_o (mg/kg-day)	RfC (mg/m^3)	CSF_o $(mg/kg\text{-}day)^{-1}$	IUR $(\mu g/m^3)^{-1}$					
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	6.0E-02	NA	NA	NA	1	0.13	7.3E+03	NA	7.3E+03
Acenaphthylene	NA	NA	NA	NA	1	0.13	NA	NA	NA
Anthracene	3.0E-01	NA	NA	NA	1	0.13	3.7E+04	NA	3.7E+04
Benz(a)anthracene	NA	NA	7.3E-01	1.1E-04	1	0.13	NA	1.2E+01	1.2E+01
Benzo(g,h,i)perylene	NA	NA	NA	NA	1	0.13	NA	NA	NA
Benzo(a)pyrene	NA	NA	7.3E+00	1.1E-03	1	0.13	NA	1.2E+00	1.2E+00
Benzo(b)fluoranthene	NA	NA	7.3E-01	1.1E-04	1	0.13	NA	1.2E+01	1.2E+01
Benzo(k)fluoranthene[2]	NA	NA	1.2E+00	1.1E-04	1	0.13	NA	7.1E+00	7.1E+00
Chrysene[2]	NA	NA	1.2E-01	1.1E-05	1	0.13	NA	7.1E+01	7.1E+01
Dibenz(a,h)anthracene	NA	NA	7.3E+00	1.2E-03	1	0.13	NA	1.2E+00	1.2E+00
Fluoranthene	4.0E-02	NA	NA	NA	1	0.13	4.9E+03	NA	4.9E+03
Fluorene	4.0E-02	NA	NA	NA	1	0.13	4.9E+03	NA	4.9E+03
Indeno(1,2,3-cd)pyrene	NA	NA	7.3E-01	1.1E-04	1	0.13	NA	1.2E+01	1.2E+01
2-Methylnaphthalene	4.0E-03	NA	NA	NA	1	0.13	4.9E+02	NA	4.9E+02
Naphthalene	2.0E-02	3.0E-03	NA	3.4E-05	1	0.13	2.1E+03	9.0E+06	2.1E+03
Phenanthrene	NA	NA	NA	NA	1	0.13	NA	NA	NA
Pyrene	3.0E-02	NA	NA	NA	1	0.13	3.7E+03	NA	3.7E+03
Polychlorinated Biphenyls									
(as Aroclor 1254)	2.0E-05	NA	2.00E+00	5.70E-04	1	0.14	2.3E+00	4.1E+00	2.3E+00
Metals									
Antimony (as trioxide)	4.0E-04	2.0E-04	NC	NC	0.15	0.01	6.6E+01	NC	6.6E+01
Arsenic[3]									1.2E+01
Barium	2.0E-01	5.0E-04	NC	NC	0.07	0.01	2.0E+03	NC	2.0E+03
Beryllium[2]	2.0E-04	7.0E-06	NC	2.4E-03	0.007	0.01	2.9E+00	1.3E+05	2.9E+00
Cadmium[2]	6.3E-06	1.0E-05	NC	4.2E-03	0.025	0.001	1.4E+00	7.3E+04	1.4E+00
Chromium (trivalent)[2]	1.5E+00	NA	NC	NC	0.013	0.01	4.3E+04	NC	4.3E+04
Chromium (hexavalent)[2]	3.0E-03	1.0E-04	5.0E-01	1.5E-01	0.025	0.01	1.1E+02	4.8E+01	4.8E+01
Cobalt	3.0E-04	6.0E-06	NC	9.0E-03	1.00	0.01	2.0E+01	3.4E+04	2.0E+01
Copper	4.0E-02	NA	NC	NC	1.00	0.01	1.2E+04	NC	1.2E+04
Lead[3]									3.2E+02
Mercury[2] (as elemental)	1.6E-04	3.0E-05	NC	NC	1.00	0.01	3.6E+01	NC	3.6E+01
Molybdenum	5.0E-03	NA	NC	NC	1.00	0.01	1.5E+03	NC	1.5E+03
Nickel (as soluble salts)[2]	1.1E-02	1.4E-05	NC	2.6E-04	0.04	0.01	5.7E+01	1.2E+06	5.7E+01
Selenium	5.0E-03	2.0E-02	NC	NC	1.00	0.01	1.5E+03	NC	1.5E+03
Silver	5.0E-03	NA	NC	NC	0.04	0.01	3.8E+02	NC	3.8E+02
Thallium (as soluble salts)	1.0E-05	NA	NC	NC	1.00	0.01	3.1E+00	NC	3.1E+00
Vanadium[2]	5.0E-03	1.0E-04	NC	NC	0.03	0.01	1.7E+02	NC	1.7E+02
Zinc	3.0E-01	NA	NC	NC	1.00	0.01	9.3E+04	NC	9.3E+04

Notes:
[1]Toxicity criteria obtained from DTSC (2015) first and USEPA (2015) if not available from DTSC (2015).
[2]Toxicity criteria obtained from DTSC (2015).
[3]See text.
RfD_o = Reference Dose for ingestion exposure, RfC = Reference Concentration for inhalation exposure, CSF_o = Cancer Slope Factor for ingestion exposure to carcinogens, IUR = Inhalation Unit Risk for inhalation exposure to carcinogens
ABS_{GI} = Gastrointestinal absorption efficiency. Obtained from USEPA (2015).
ABS_D = Dermal absorption efficiency. Obtained from USEPA (2015) (PAHs) and DTSC (2013) (metals).
NC = Not carcinogenic.
NA = Not available.

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Table 5

Soil Screening Levels for the On-Site Construction Worker
Volatile Chemicals

Chemical	Non-Cancer Toxicity Criteria[1]		Cancer Toxicity Criteria[1]		Volatilization Factor[3] (m^3/kg)	Non-Cancer Screening Level (mg/kg)	Cancer Screening Level (mg/kg)	Final (Lowest) Screening Level (mg/kg)
	RfD_o (mg/kg-day)	RfC (mg/m^3)	CSF_o $(mg/kg\text{-}day)^{-1}$	IUR $(\mu g/m^3)^{-1}$				
Acetone	9.0E-01	3.1E+01	NC	NC	1.4E+04	2.7E+05	NC	2.7E+05
Benzene[2]	4.0E-03	3.0E-03	1.0E-01	2.9E-05	3.5E+03	4.5E+01	2.5E+02	4.5E+01
2-Butanone (Methyl ethyl ketone)	6.0E-01	5.0E+00	NC	NC	1.2E+04	1.2E+05	NC	1.2E+05
Carbon disulfide	1.0E-01	7.0E-01	NC	NC	1.2E+03	3.3E+03	NC	3.3E+03
Chlorobenzene	2.0E-02	5.0E-02	NC	NC	6.5E+03	1.2E+03	NC	1.2E+03
Chloroform	1.0E-02	9.8E-02	3.1E-02	2.3E-05	2.6E+03	8.5E+02	7.8E+02	7.8E+02
1,1-Dichloroethane[2]	2.0E-01	8.0E-01	5.7E-03	1.6E-06	2.1E+03	6.7E+03	4.3E+03	4.3E+03
1,2-Dichloroethylene (cis)[2]	2.0E-03	8.0E-03	NC	NC	2.5E+03	7.8E+01	NC	7.8E+01
1,2-Dichloroethylene (trans)[2]	2.0E-02	8.0E-02	NC	NC	1.7E+03	5.5E+02	NC	5.5E+02
Ethylbenzene	1.0E-01	1.0E+00	1.1E-02	2.5E-06	5.7E+03	1.5E+04	2.2E+03	2.2E+03
2-Hexanone (Methyl butyl ketone)	5.0E-03	3.0E-02	NC	NC	NA	NA	NA	NA
Methylene chloride[2]	6.0E-03	4.0E-01	1.4E-02	1.0E-06	2.2E+03	1.4E+03	1.8E+03	1.4E+03
Styrene	2.0E-01	1.0E+00	NC	NC	9.4E+03	2.6E+04	NC	2.6E+04
Tetrachloroethene[2]	6.0E-03	3.5E-02	5.4E-01	5.9E-06	2.4E+03	3.1E+02	4.6E+01	4.6E+01
Toluene[2]	8.0E-02	3.0E-01	NC	NC	4.3E+03	4.7E+03	NC	4.7E+03
1,1,1-Trichloroethane[2]	2.0E+00	1.0E+00	NC	NC	1.7E+03	7.4E+03	NC	7.4E+03
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	5.0E-04	2.0E-03	4.6E-02	4.1E-06	2.2E+03	1.7E+01	5.4E+02	1.7E+01
Trichlorofluoromethane	3.0E-01	7.0E-01	NC	NC	1.0E+03	3.0E+03	NC	3.0E+03
Vinyl chloride[2]	3.0E-03	1.0E-01	2.7E-01	7.8E-05	9.6E+02	3.0E+02	9.0E+01	9.0E+01
Xylenes	2.0E-01	1.0E-01	NC	NC	6.5E+03	2.7E+03	NC	2.7E+03

Notes:
[1]Toxicity criteria obtained from DTSC (2015) first and USEPA (2015) if not available from DTSC (2015)
[2]Toxicity criteria obtained from DTSC (2015).
[3]Volatilization factors obtained from USEPA (2015).
RfD_o = Reference Dose for ingestion exposure, RfC = Reference Concentration for inhalation exposure, CSF_o = Cancer Slope Factor for ingestion exposure to carcinogens, IUR = Inhalation Unit Risk for inhalation exposure to carcinogens
NC = Not carcinogenic.
NA = Not available.

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Table 6

Ecorisk-Based Soil Screening Levels (Protection of Terrestrial Wildlife)
Non-Volatile Chemicals

Chemical	Soil Screening Level (mg/kg)	Reference
Polycyclic Aromatic Hydrocarbons		
Acenaphthene	20	USEPA (2001)
Acenaphthylene	NA	
Anthracene	0.1	USEPA (2001)
Benz(a)anthracene	NA	
Benzo(g,h,i)perylene	NA	
Benzo(a)pyrene	0.1	USEPA (2001)
Benzo(b)fluoranthene	NA	
Benzo(k)fluoranthene	NA	
Chrysene	NA	
Dibenz(a,h)anthracene	NA	
Fluoranthene	0.1	USEPA (2001)
Fluorene	NA	
Indeno(1,2,3-cd)pyrene	NA	
2-Methylnaphthalene	NA	
Naphthalene	0.1	USEPA (2001)
Phenanthrene	0.1	USEPA (2001)
Pyrene	0.1	USEPA (2001)
Metals		
Antimony	0.27	USEPA (2005a)
Arsenic	43	USEPA (2005b)
Barium	2000	USEPA (2005c)
Beryllium	21	USEPA (2005d)
Cadmium	0.36	USEPA (2005e)
Chromium (trivalent)	26	USEPA (2005f)
Chromium (hexavalent)	130	USEPA (2005f)
Cobalt	120	USEPA (2005g)
Copper	28	USEPA(2007a)
Lead	11	USEPA (2005h)
Mercury	NA	
Molybdenum	NA	
Nickel	130	USEPA (2007b)
Selenium	0.63	USEPA (2007c)
Silver	4.2	USEPA (2006)
Thallium	NA	
Vanadium	7.8	USEPA (2005i)
Zinc	46	USEPA (2007d)
Polychlorinated Biphenyls		
(as total)	0.02	USEPA (2001)
Petroleum Hydrocarbons		
TPH-Gasoline	20	USEPA (2001)
TPH-Diesel	NA	
TPH-Motor Oil	NA	

Notes:
NA = Not available.

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Table 7

Ecorisk-Based Soil Screening Levels (Protection of Terrestrial Wildlife)
Volatile Chemicals

Chemical	Soil Screening Level (mg/kg)	Reference
Acetone	NA	
Benzene	0.05	USEPA (2001)
2-Butanone (Methyl ethyl ketone)	NA	
Carbon disulfide	NA	
Chlorobenzene	0.05	USEPA (2001)
Chloroform	0.001	USEPA (2001)
1,1-Dichloroethane	NA	
1,2-Dichloroethylene (cis)	NA	
1,2-Dichloroethylene (trans)	NA	
Ethylbenzene	0.05	USEPA (2001)
2-Hexanone (Methyl butyl ketone)	NA	
Methylene chloride	2	USEPA (2001)
Styrene	0.1	USEPA (2001)
Tetrachloroethene	0.01	USEPA (2001)
Toluene	0.05	USEPA (2001)
1,1,1-Trichloroethane	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	
Trichloroethylene	0.001	USEPA (2001)
Trichlorofluoromethane	NA	
Vinyl chloride	0.01	USEPA (2001)
Xylenes	0.05	USEPA (2001)

Notes:
NA = Not available.

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Table 8

Human Health-Based Groundwater Screening Levels[1]

Chemical	Groundwater Screening Level (µg/L)	Basis	Reference
Acetone	14,000	USEPA RSL	USEPA (2015)
Benzene	1	CA MCL	CalEPA (2015)
2-Butanone (Methyl ethyl ketone)	5,600	USEPA RSL	USEPA (2015)
Carbon disulfide	810	USEPA RSL	USEPA (2015)
Chlorobenzene	70	CA MCL	CalEPA (2015)
Chloroform	0.22	USEPA RSL	USEPA (2015)
1,1-Dichloroethane	5	CA MCL	CalEPA (2015)
1,2-Dichloroethylene (cis)	6	CA MCL	CalEPA (2015)
1,2-Dichloroethylene (trans)	10	CA MCL	CalEPA (2015)
Ethylbenzene	300	CA MCL	CalEPA (2015)
2-Hexanone (Methyl butyl ketone)	38	USEPA RSL	USEPA (2015)
Methylene chloride	5	CA MCL	CalEPA (2015)
Styrene	100	CA MCL	CalEPA (2015)
Tetrachloroethene	5	CA MCL	CalEPA (2015)
Toluene	150	CA MCL	CalEPA (2015)
1,1,1-Trichloroethane	200	CA MCL	CalEPA (2015)
1,1,2-Trichloro-1,2,2-trifluoroethane	1,200	CA MCL	CalEPA (2015)
Trichloroethylene	5	CA MCL	CalEPA (2015)
Trichlorofluoromethane	150	CA MCL	CalEPA (2015)
Vinyl chloride	0.5	CA MCL	CalEPA (2015)
Xylenes	1,750	CA MCL	CalEPA (2015)

Notes:
[1]Based on drinking water ingestion.
USEPA RSL = USEPA Regional Screening Level for tapwater ingestion.
CA MCL = California Maximum Contaminant Level (drinking water standard).
NA = Not available.

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Table 9

Groundwater Screening Levels to Protect Indoor Workers from Vapor Intrusion

Chemical	Screening Level (µg/L)[1]
Acetone	NA
Benzene	270
2-Butanone (Methyl ethyl ketone)	200,000,000
Carbon disulfide	NA
Chlorobenzene	NA
Chloroform	1,700
1,1-Dichloroethane	NA
1,2-Dichloroethylene (cis)	26,000
1,2-Dichloroethylene (trans)	120,000
Ethylbenzene	3,100
2-Hexanone (Methyl butyl ketone)	NA
Methylene chloride	26,000
Styrene	NA
Tetrachloroethene	640
Toluene	NA
1,1,1-Trichloroethane	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA
Trichloroethylene	1,300
Trichlorofluoromethane	NA
Vinyl chloride	18
Xylenes	NA

[1]Values are Environmental Screening Levels (ESLs) from SFBRWQCB (2013) for fine-coarse mix soil types, commercial/industrial land use.
NA = Not available.

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Table 10

Ecorisk-Based Groundwater Screening Levels (Protection of Aquatic Life)[1]

Chemical	Groundwater Screening Level[2] (µg/L)	
	Freshwater Habitat	Estuary Habitat
Acetone	1,500	1,500
Benzene	46	46
2-Butanone (Methyl ethyl ketone)	14,000	14,000
Carbon disulfide	NA	NA
Chlorobenzene	25	25
Chloroform	620	620
1,1-Dichloroethane	47	47
1,2-Dichloroethylene (cis)	590	590
1,2-Dichloroethylene (trans)	590	590
Ethylbenzene	290	43
2-Hexanone (Methyl butyl ketone)	NA	NA
Methylene chloride	2,200	2,200
Styrene	100	100
Tetrachloroethene	120	120
Toluene	130	130
1,1,1-Trichloroethane	62	62
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA
Trichloroethylene	360	360
Trichlorofluoromethane	NA	NA
Vinyl chloride	780	780
Xylenes	100	100

Notes:
[1]Groundwater screening levels assume groundwater daylights in either freshwater or estuarine wetlands.
[2]Values shown are Environmental Screening Levels (ESLs) from SFRWQCB (2013).
NA = Not available.

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Table 11

Comparison of Updated Soil Screening Levels to Maximum Soil Concentrations Reported in the June 2015 Phase II Environmental Site Assessment

Chemical	Maximum Concentration at Any Soil Depth[2] (mg/kg)	Screening Level Exceeded[1]			
		Off-Site (Nearby) Resident	On-Site Commercial Worker	Construction Worker	Ecorisk (Terrestrial Wildlife)
Polycyclic Aromatic Hydrocarbons					
Anthracene	0.14				X (0.1)
Benzo(a)pyrene	2.1		X (0.29)	X (1.2)	X (0.1)
Fluoranthene	0.72				X (0.1)
Naphthalene	0.74				X (0.1)
Phenanthrene	0.39				X (0.1)
Pyrene	0.9				X (0.1)
Metals					
Antimony	4.1				X (0.27)
Arsenic	13		X (12)	X (12)	
Cadmium	1.7			X (1.4)	X (0.36)
Chromium (as trivalent)[3]	1,800				X (26)
Cobalt	93			X (20)	
Copper	110				X (28)
Lead	1,500		X (320)	X (320)	X (11)
Nickel	2,400		X (1,500)	X (57)	X (130)
Vanadium	50				X (7.8)
Zinc	420				X (46)
Petroleum Hydrocarbons					
TPH-Diesel	1,300		X (110)		
TPH- Motor oil	1,800		X (500)		

[1]Screening level shown in parenthesis.
[2]See text.
[3]Assumed to be trivalent chromium.

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Table 12

Comparison of Updated Groundwater Screening Levels to Maximum Groundwater Concentrations Reported in the June 2015 Phase II Environmental Site Assessment

Chemical	Maximum Groundwater Concentration (µg/L)	Screening Level Exceeded[1]		
		Drinking Water Groundwater Screening Level	Vapor Intrusion - Commercial Worker	Ecorisk Screening Level (Protection of Aquatic Life)
Benzene	4.4	X (1)		

[1]Screening level shown in parenthesis.

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EXHIBIT 4

O-MBA16S6

November 2, 2015

Memo

To: Patrick Soluri, Attorney at Law

From: Philip King, Ph.D.

Re: Urban Decay Analysis of Proposed Movement of Golden State Warriors from Oakland to San Francisco

Upon your request, I examined the reply to my July 13, 2015 memo prepared to analyze potential for urban decay stemming from the move of the Golden State Warriors (GSW) from Oracle Stadium in Oakland to a new stadium in San Francisco. Unfortunately, the consultants mischaracterized many of the arguments that I presented. This memo will provide my responses to ALH's comments in detail. Here are the key points:

- ALH argues that I do not provide a definition of urban decay. My discussion of the definition of urban decay was limited because the legal definition of urban decay is well-understood by now. ALH provides a definition of urban decay which is consistent with my understanding. The differences between my expert opinion and ALH's have nothing to do with the definition of urban decay, but its significance in this case. It is my professional opinion that the loss of spending and jobs will exacerbate urban decay in this area, which the City itself designated as "blighted."
- ALH conflates revenues and spending and argues that my analysis left out key revenue sources, in particular TV revenues. While it is true that we did not specifically mention TV revenues, our data (from Forbes) on the GSW spending would include *all* revenue sources including TV revenues.
- ALH argues that the move of the GSW from Oakland will not lead to a transfer of jobs. They cite the lower cost of living in the East Bay. However, an analysis of commuter patterns provided below indicates that, in fact, the percentage of workers who commute from the East Bay to San Francisco is relatively small and consistent with our analysis.
- ALH argues that another team will be attracted to the area and cites the City of Oakland's Coliseum Redevelopment Area. However, numerous articles in Bay Area newspapers and the professional sports media indicate that this plan has struggled to gain support from developers who would be needed to finance the project or the two major professional sports teams who use the adjacent Oakland Coliseum, the Oakland A's and the Oakland Raiders. Indeed the Oakland Raiders are one of three candidates widely touted to move (back) to Los Angeles, which has no NFL team.

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[LC-GEN-3]

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In more detail, here are my responses to the ALH memo.

- In it's memo ALH states that:

  > "Dr. King's memo does not include a definition of urban decay. Generally speaking, urban decay is characterized by physical deterioration to properties or structures that is so prevalent, substantial, and lasting a significant period of time that it impairs the proper utilization of the properties and structures, and the health, safety, and welfare of the surrounding community. The focus of CEQA review is on whether a project will result in impacts on the physical environment. CEQA directs the lead agency to consider economic effects, to the extent those effects have the potential to culminate in physical environmental effects (CEQA Guidelines, § 15131). Characteristics of physical deterioration contributing to urban decay include abandoned buildings, boarded doors and windows, parked trucks and long-term unauthorized use of the properties and parking lots, extensive or offensive graffiti painted on buildings, dumping of refuse or overturned dumpsters on properties, dead trees and shrubbery, and uncontrolled weed growth. This is the context of urban decay that ALH Economics deems relevant to the response herein."

  I agree my memo did not spend a great deal of time defining urban decay since the legal literature here is reasonably clear. I accept ALH's definition.

- In their memo ALH states:

  > "Dr. King's analysis is based on the assumption that all Warrior's revenues derive from ticket sales to patrons living in the East Bay, San Francisco, and the Peninsula. However, there are numerous other revenue sources, such as merchandise sales and media revenues, and ALH Economics found that only 76% of ticket sales originate from the areas identified by Dr. King. Further, Dr. King's analysis of a generalized economic impact on Alameda County does not lead to the conclusion that urban decay will result in a specific location."

  My analysis was based on an estimate of spending derived from Forbes magazine, which ALH did not dispute. (Since ALH has better access to this data I assume they would have disputed this figure if it were too high.)

  The confusion that runs like a thread through the ALF report is as follows: they confuse the sources of spending at Warriors games with economic impact that this spending causes within Alameda County. They do this in two ways:

  - First, the place of residence of those who attend Warriors games (whether they come from the East or West Bay) is totally irrelevant. Whether these fans are from Oakland or New York City, what matters is that whereas before

14
[LC-GEN-3]
cont.

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their money was being spent in Alameda County, this money is now being spent in San Francisco.

- Second, my report took the sources of Warriors' revenue as irrelevant, and focused instead upon the ways in which this revenue was spent by the organization. Thus, for the purposes of our report, whether that money came from ticket sales, TV contracts, or concession stands of various kinds was totally beside the point. What mattered to us was whether the money was going to local employees, players' salaries or reinvested within the organization.

- Further, there are, however, numerous ways in which the ALH report misrepresents these figures and the nature of IMPLAN analyses in general.
  - First, IMPLAN uses the same methodology as all U.S. government calculations for GDP, etc. in that the employment numbers represent the location of the jobs themselves and not the residence of the person who perform those jobs. Even if many of these employees will not have to relocate or find a new job, their job still moves from one county to another.[1]
  - Second, the employment numbers provided by IMPLAN to not directly translate into the full-time job estimates (FTE) provided in other EIRs. Within IMPLAN, each job within the professional sports/spectator industry is roughly equivalent to 85% of 1 FTE.[2]
  - Third, the employment numbers do NOT represent the number of people directly employed by the Warriors organization, but also include those employed by other companies (concession stands, parking attendants, etc.)).[3]
  - Our original report generously assumed that 74% of the Warriors annual spending was non-local (or "leaked") in nature. While the ALH report criticized the arbitrary nature of these leakage estimates, a proper remedy of this point, again, works against the ALH's stated goal. The non-arbitrary approach which ALH seems to advocate would have us acknowledge that the leakage rates that are native to the professional sports/spectator industry are already built into the IMPLAN model. Such an analysis would estimate a much larger economic impact.[4]

14 [LC-GEN-3] cont.

[1] Contrary to what the ALH report suggests, only 3.14% of those employed within Alameda County reside within SF, while only 12.16% of those employed within SF commute from Alameda County. http://www.vitalsigns.mtc.ca.gov/commute-patterns#chart-0

[2] https://implan.com/index.php?view=document&alias=4-536-fte-a-employment-compensation-conversion-table&category_slug=536&layout=default&option=com_docman&Itemid=1764

[3] Compare to the estimated 771 jobs that are provided by the A's. https://salsa.wiredforchange.com/o/5782/images/FinalStadiumReport_04.21.10.pdf

[4] See http://www.santaclara.org/pdf/49er-Stadium-Impact-Study.pdf in which this same reasoning is applied to the 49er's new stadium.

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- ALH argues that the move of the GSW from Oakland will not lead to a transfer of jobs. They cite the lower cost of living in the East Bay. The statistics they provide, however, only distract from other, more directly relevant data. The US Census Bureau keeps statistics on commuting within the Bay Area. Only 12.16% of people working in San Francisco commute from Alameda County, which is consistent with our analysis.[5]
- ALH argues that the departure of the Golden State Warriors is not an issue since the City of Oakland's Coliseum Redevelopment Area will bring in other sports teams. However, the local news media, as well as the sports media, have covered this issue extensively and it's clear that the City of Oakland, while enthusiastic about bringing in another sports team, is having difficulty finding a private developer to fund the project. This project is estimated by one source (cited below) to cost $400 million.
  - Several new media articles within the last month indicate that developers are reluctant to invest money in the Oakland Coliseum Redevelopment Area. This RDA is particularly problematic since the Oakland Raiders have been widely mentioned in the media as possible candidates to move to their old home in Los Angeles, or elsewhere. The Raiders could also move to Levi's stadium in Santa Clara, where the 49ers play, though this idea is unpopular.
  - Here are two recent quotes:

    -"Oakland's most recent stadium proposal — Mayor Jean Quan's Coliseum City retail-office-housing scheme — sank without a trace when neither the Raiders nor A's would climb aboard.[6]"

    "The Raiders share a clearly substandard facility with Major League Baseball's Oakland Athletics and, simply, there is no plan. A potential financing partner, Floyd Kephart, dropped out, leaving a $400 million funding gap that neither Oakland city officials nor Alameda county officials can figure out how to fill. There still remains the remote possibility of the Raiders sharing Levi's Stadium with the 49ers, although both teams loathe that idea. The Raiders seem a certain candidate for relocation.[7]"

14 [LC-GEN-3] cont.

[5] See http://www.vitalsigns.mtc.ca.gov/commute-patterns#chart-0

[6] See San Francisco Chronicle: "Oakland mayor trying to put together new stadium deal for Raiders By Matier & Ross, October 30, 2015 Updated: November 1, 2015 12:35am, http://www.sfchronicle.com/bayarea/matier-ross/article/Oakland-mayor-trying-to-put-together-new-stadium-6602228.php.

[7] See The Race for L.A. Heats Up, http://mmqb.si.com/mmqb/2015/10/22/nfl-los-angeles-relocation-stadiums-chargers-rams-raiders.

- Contrary to ALH's rosy analysis, the City of Oakland has struggled to find support for this plan.[8] Thus any conclusion that the Orcale Arena can find another sports team is speculation.

Consequently, in my professional opinion, ALH's responses fail to deal directly with my analysis. On the issue of other sports teams entering the market, the evidence as it stands today indicates that it's unlikely in the foreseeable future that another NBA team will locate to Oakland (and ALH provides no evidence that any team is interested). Further, the possibility of the Oakland Raiders moving would exacerbate the situation. While the City of Oakland is clearly eager to get a new NBA franchise, the media reports indicate that the City's efforts have not been fruitful and any discussion of future teams occupying that space is speculative.

14 [LC-GEN-3] cont.

[8] See also San Francisco Chronicle: "Oakland dumping Coliseum development: What's next for Raiders?," By Matier & Ross, September 19, 2015

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EXHIBIT 5

SFMTA Municipal Transportation Agency

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Capital and Operating Cost Estimates for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 (the Project) (please see notes)

	ESTIMATED COST FY13-14 $	5-Year Plan FY14-15 1	FY15-16 2	FY16-17 3	FY17-18 4	FY18-19 5	Total 5-Year Plan	
PRELIMINARY CAPITAL USES								
Transit Investments								
(4) New Light Rail Vehicles	$18,300,287	-	-	-	21,000,000	-	$21,000,000	2
Installation of (3) single crossovers								
Conceptual Engineering Phase	$176,134	$182,299	$0	$0	$0	$0	$182,299	
Detail Design Phase	$469,691	$486,130	$0	$0	$0	$0	$486,130	
Construction Phase	$7,058,715	$0	$0	$7,826,123	$0	$0	$7,826,123	
Bus Substitution Cost	$650,000	$0	$0	$720,667	$0	$0	$720,667	
Total Installation of single crossovers	$8,354,540	$668,429	$0	$8,546,790	$0	$0	$9,215,219	
(Allocation to projects 70%)	$5,848,178	$467,900	$0	$5,982,753	$0	$0	$6,450,653	
Construct new Center Boarding platform 16.6 feet x 320 feet								
Conceptual Engineering Phase	$500,000	$0	$535,613	$0	$0	$0	$535,613	
Detail Design Phase	$1,500,000	$0	$1,606,838	$0	$0	$0	$1,606,838	
Construction Phase	$17,000,000	$0	$0	$18,848,204	$0	$0	$18,848,204	
Bus Substitution Cost	$3,500,000	$0	$0	$3,880,513	$0	$0	$3,880,513	
Total UCSF platform Center Platform	$22,500,000	$0	$2,142,450	$22,728,716	$0	$0	$24,871,166	
Power augments to idling "event" trains	$6,800,000			$7,539,282			$7,539,282	
Total Transit Investments	**$55,954,827**	**$668,429**	**$2,142,450**	**$38,814,788**	**$21,000,000**	**$0**	**$62,625,667**	
Total Transit Investments - Allocation to Project	$53,448,465	$467,900	$2,142,450	$36,250,751	$21,000,000	$0	$59,861,101	
Traffic/Signals Engineering Investments								
CCTV Cameras @ 5 locations	$175,000	-	$65,613	$126,117	-	-	$191,729	
Variable Message Signs (VMT)	$405,000	-	$151,846	$291,870	-	-	$443,716	
Traffic Signals (South Street and Terry Francois Boulevard, and 16th Street and Terry Francois Boulevard, and Illinois Street / Ma	$1,200,000	-	$449,915	$864,800	-	-	$1,314,714	
Transportation Management Center Network Upgrades	$80,000	-	$29,994	$57,653	-	-	$87,648	
Total Traffic/Signals Engineering Investments	**$1,860,000**	**$0**	**$697,367**	**$1,340,440**	**$0**	**$0**	**$2,037,807**	
Mariposa Street Restriping Study	$20,000		$20,000				$20,000	
Total Estimated Capital Uses	**$57,814,827**	**$ 668,429**	**$ 2,839,817**	**$ 40,155,228**	**$21,000,000**	**$ -**	**$64,663,474**	
Total Estimated Capital Uses Allocation to Project	**$55,308,465**	**$ 467,900**	**$ 2,839,817**	**$ 37,591,191**	**$ 21,000,000**	**$ -**	**$ 61,898,909**	
PRELIMINARY CAPITAL SOURCES								
In Lieu TIDF (SFMTA)	$17,436,000	-	-	-	$19,434,536	-	$19,434,536	
General Fund Capital Sources (see Financial Feasibility Study)	$7,955,799	$0	$3,390,000	$2,255,583	$2,310,216	$0	$7,955,799	
Total Estimated Capital Sources	**$25,391,799**	**$0**	**$3,390,000**	**$2,255,583**	**$21,744,752**	**$0**	**$27,390,335**	3,9
CAPITAL SOURCES LESS USES	($32,423,028)	($668,429)	$550,183	($37,899,645)	$744,752	$0	($37,273,139)	
CAPITAL SOURCES LESS USES ALLOCATION TO PROJECT	($29,916,666)	($467,900)	**$550,183**	($35,335,608)	**$744,752**	**$0**	($34,508,573)	

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Capital and Operating Cost Estimates for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 (the Project) (please see notes)

	ESTIMATED COST FY13-14 $	5-Year Plan FY14-15	FY15-16	FY16-17	FY17-18	FY18-19	Total 5-Year Plan	
PRELIMINARY OPERATING COSTS								
Transit Operating Costs by Event Type								
Annual Transit Costs: Playoff Basketball Games (16)	$536,670	-	-	-	$307,920	$637,395		
Annual Transit Costs: Basketball Games (43)	$1,442,300	-	-	-	$827,536	$1,713,000		
Annual Transit Costs: Concerts (30)	$654,000	-	-	-	$375,240	$776,747		
Annual Transit Costs: Convention, Theater, Shows & Other Sporting Events (131)	$916,300	-	-	-	$525,738	$1,088,277		
Total Transit Operating Costs (89 large events plus 131 other events/Year)	**$3,549,270**	**$0**	**$0**	**$0**	**$2,036,434**	**$4,215,419**		1, 4, 7
Enforcement Operating Costs by Event Type								
Annual Enforcement Operating Costs: Playoff Basketball Games (16)	334,941	-	-	-	$192,176	$397,805		
Annual Enforcement Operating Costs: Basketball Games (43)	$ 900,155	-	-	-	$516,474	$1,069,101		
Annual Enforcement Operating Costs: Concerts (30)	$ 628,015	-	-	-	$360,331	$745,885		
Annual Enforcement Operating Costs: Local Hospital Access Plan (52)	$ 110,933	-	-	-	$63,649	$131,754		
Annual Enforcement Operating Costs: Convention, Theater, Shows & Other Sporting Events (131)	$ 918,794	-	-	-	$527,168	$1,091,239		
Total Enforcement Operating Costs (89 large events, 52 LHAP and 131 other events/Year)	**$ 2,892,838**	**$0**	**$0**	**$0**	**$1,659,799**	**$3,435,784**		1,5,7
Mitigation Measure Cost								
Additional PCOs for events 12.500 and over (MM TR-2a)	$ 226,967	-	-	-	$130,225	$269,565		
Additional PCOs during overlapping events (MM TR-11a)	$ 11,476	-	-	-	$6,584	$13,630		
Additional Strategies to Reduce Transportation Impacts of Overlapping Events (M-TR-11c)	$ 11,476	-	-	-	$6,584	$13,630		
Transit Demand Accommodation (22 Fillmore)	$220,000	-	-	-	$126,228	$261,291		
Total Mitigation Measure Operating Costs	**$ 469,918**	**$0**	**$0**	**$0**	**$269,621**	**$558,115**		5,7,8
Total Operating Cost	**$6,912,026**	**$0**	**$0**	**$0**	**$3,965,854**	**$8,209,318**		
PRELIMINARY OPERATING SOURCES								
						$2,030,448		
Transit Sources Assumptions by Event Type								
Annual Transit Fares: Basketball Games (59)	$396,947	-	-	-	$221,223	$454,612		
Annual Transit Fares: Concerts (30)	$148,800	-	-	-	$82,928	$170,417		
Annual Transit Fares: Convention, Theater, Shows & Other Sporting Events (131)	$322,800	-	-	-	$179,900	$369,694		
Total Annual Transit Fares	**$868,547**	**-**	**$0**	**$0**	**$484,050**	**$994,723**		1, 4, 7
Special Event Parking Sources by Event Type								
Annual Parking Revenues: Basketball Games (59)	$411,037	-	-	-	$229,075	$470,750		
Annual Parking Revenues: Concerts (30)	$156,243	-	-	-	$87,076	$178,941		
Annual Parking Revenues: Convention, Theater, Shows & Other Sporting Events (131)	$337,067	-	-	-	$187,851	$386,034		
Total Annual Incremental Parking Revenues	**$904,347**	**-**	**$0**	**$0**	**$504,002**	**$1,035,724**		1, 4, 7
Other SFMTA Revenues								
Total Other SFMTA Revenue (See Financial Feasibility Study)	**$ 2,981,000**	**$0**	**$0**	**$0**	**$1,379,142**	**$3,405,761**		
General Fund Sources - Mission Bay Transportation Improvement Fund								
Total General Fund Sources (See Financial Feasibility Study)	**$2,158,132**	**$0**	**$0**	**$0**	**$1,598,660**	**$ 2,773,110**		7, 10
Total Operating Sources	**$6,912,026**	**$0**	**$0**	**$0**	**$3,965,854**	**$8,209,318**		
OPERATING SOURCES and LESS USES	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		

Notes:

[1] Total estimated 220 events/year for calculating the operating costs and revenue;
[2] Costs based on FY2014 $ and inflated to FY2019 $ with 3.5% increase annually;
[3] The proposed plan includes purchasing 4 additional trains and shifting 2 two cars from another route(s) at the end of the PM commute period. This could increase crowding in other parts of the system;
[4] Transit estimates based on 35% mode share;
[5] Enforcement time at overtime rates;
[6] Estimated transit revenue based on 57% of regular service revenues - equal to other special events. Estimated parking revenue assumes special event zone equivalent to half core, premium zone for AT&T park. 2.75% annual inflation;
[7] FY17-18 operating revenue and expense are calculated for half year instead of full year as the Warrior's Areana is projected to be open for events starting January 2017;
[8] Operating cost for mitigation measurer M-TR-2a: areawide wayfinding plan for parking facilities service the Event Center and M-TR-4a additional Muni service to accommodate transit demand;
[9] Capital Funding source: 1) TIDF is paid at Certificate of Occupancy in FY17-18; 2)Construction related taxes include sales taxes and gross receipts, projections from Controller
[10] General fund sources based on Controller's Estimates

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EXHIBIT 6

O-MBA16S6

Warriors Stadium Economics: Uncertainty and Alternatives

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Executive Summary

In order for the Golden State Warriors (GSW) to move to San Francisco, the City must make significant infrastructure investments in transit and commit to providing over $6 million in support each year that the new arena operates. Although estimates of the costs to the City and estimates of City revenues exist, a cash flow analysis of this project has not been produced. Nor has the project been subject to a comparison with plausible alternatives. With a project of this magnitude and with the significant external costs imposed on San Francisco, it is deserving of such an analysis.

This report provides both a cash flow analysis of the arena development and a comparison with a plausible alternative. It also provides a discussion of some of the assumed revenues associated with the project. In particular, the assumptions regarding hotel/motel tax revenues and parking taxes are optimistic. The reality could be millions of dollars less than expected.

Although the cash flow analysis suggests that the project will turn a surplus of revenue in the fourth year of arena operations, a comparison with an alternative development suggests that from a financial perspective the City could do much better. If a biotech facility were constructed in place of the arena, it is possible that City revenues over the course of 22 years (two years of construction and 20 years of operation) could be more than $39.9 million higher in net present discounted value terms, or $1.8 million per year over 22 years. This comparison is with a conservative investment. With a more aggressive development option, the net present discounted value of revenues could be as much as $150 million higher, or nearly $7 million per year.

It is worth noting that the effective subsidy provided by the City of San Francisco to provide transit infrastructure and traffic mediation amounts to roughly $150 million over the same 22 years, again in present discounted value terms. Were this subsidy not necessary, the Warriors development project would have a revenue impact to the City comparable to that of the more aggressive development option. Unfortunately, the Warriors development project requires the extensive subsidy while a biotechnology center would not. The biotechnology center, whether using conservative or aggressive assumptions, provides greater net revenues to the City of San Francisco than does the development including the Arena, by between $1.8 and $7 million per year.

These figures can be thought of as the amount that San Franciscans are paying to bring the Warriors to town. It is the amount of revenues that the City would forgo with the GSW project, relative to a plausible alternative. This is not to say that the project is a bad idea, but merely to point out what is being given up in order to accommodate the Warriors' move.

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Key Findings

1. A cash flow analysis of the arena through the first twenty years of operation suggests net revenues for San Francisco of $96 million. This is net of City expenses of approximately $150 million during this time for transit and traffic mitigation.
2. This $150 million of City spending in support of the Arena represents an implicit subsidy to the project. The City is funding transit infrastructure and the mitigation of traffic and transportation issues related to the functioning of the arena.
3. Although the Arena generates significant revenues for San Francisco, the City's costs will exceed its revenues from the development for at least the first three years of Arena operation, putting the taxpayers on the hook for the difference.
4. There are elements of the estimates of City revenues that are filled with uncertainty. In particular, the hotel/motel and parking revenues are highly speculative. This uncertainty may imply a broader burden for City taxpayers.
5. If hotel/motel revenues are overstated by half, which is possible, that would reduce City revenues by $13.2 million in the first 20 years of Arena operation.
6. If an alternative development, one suited to biotechnology, were pursued, the City's net revenues would be nearly $40 million higher and possibly as much as $150 million higher over 22 years, or $7 million per year.
7. An alternative development would have considerably larger economic impacts for the rest of the San Francisco Economy than would an arena, and would generate significantly more jobs, more than 2,000 on-site. Oracle Arena currently generates just 494 jobs.
8. An alternative development would generate as much as $1 billion in direct economic activity on-site and perhaps as much as an additional $1 billion in ancillary benefits to the broader San Francisco economy.
9. Forgoing the biotechnology development and pursuing the Arena reduces net revenues to the City of San Francisco by $2 to $7 million per year.

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cont.

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1: Introduction

In 2017, the Golden State Warriors are expected to begin playing in San Francisco. Although this is an exciting development for the City of San Francisco, the economics of the Warriors presence in the City are unclear. There are likely to be significant revenue benefits for the City, but welcoming the Warriors will also involve significant infrastructure investments and ongoing expenses for the City and County of San Francisco. The net effects of these revenues and costs have not been adequately addressed.[1]

It is not clear whether San Francisco is importing a lucrative asset or a financial burden; that is, it is not clear whether the revenues associated with the Warriors play in San Francisco exceed the considerable upfront investments that the City must make. It is also an open question as to what exactly the City might be giving up in order to host the Warriors. The 12-acre parcel on which the arena is to be built is a valuable piece of real estate. In 2010, Salesforce paid $278 million for a 14-acre site that includes the property in question. The property, located as it is across the street from UCSF and near a variety of biotech companies, seems a likely candidate for a biotech friendly building.[2] Were this to happen, it would yield significant benefits for the City. Whether or not these financial benefits exceed those associated with the Warriors is the subject of this report.

The report proceeds to review the costs and benefits associated with the Warriors, as they have been made public. This is followed by an estimate of the likely benefits of a biotech development occupying the same space. The benefits of the GSW plan are then examined from a perspective of robustness, whether or not they are likely to come to pass.

This report provides a cash flow analysis of the GSW project and compares that analysis with an alternative development that includes a biotechnology-oriented commercial structure in place of the arena. The GSW project is cash flow positive, but not until at least the fourth year of operations. Relative to the alternative development, even after 20 years of operating, the GSW project falls short in terms of net government revenues by approximately $39.9 million, or $1.8 million per year over 22 years. Alternative developments, with more aggressive assumptions, though still plausible, suggest that City revenues could increase by as much as $151.6 million after 22 years, or $6.9 million per year, without the need for heavy subsidization on the part of the City in the early years. From a purely financial perspective, the GSW project is a significant drain on City revenues relative to what alternative developments might yield.[3]

[1] Accepting the team also results in a significant revenue hole for the City of Oakland in that most events that currently take place at Oracle Arena are projected to move to the new arena.

[2] Its neighbors would include UCSF, Celgene Corporation, National Multiple Sclerosis Society, venBio, Nurix, Clovis Oncology, FibroGen, and Illumina, among others.

[3] The methodology used in this report is comparable to the methods and assumptions used by EPS in producing its fiscal impact analysis of the GSW arena. The Appendix provides a set of tables that indicate where common assumptions are used.

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[LC-GEN-1]
cont.

2: Benefits and Costs of Hosting the Warriors

– Benefits/Revenues

As with any economic activity, there are certainly financial benefits for the City of San Francisco associated with hosting the Warriors. A report has been produced for the City of San Francisco that provides a fiscal analysis of the GSW project.[4] These benefits are derived from one-time revenues from the purchase of the land and arena construction and ongoing benefits associated with the events that the stadium hosts. The ongoing benefits also include revenues from commercial and retail activity built into the project, as well as parking revenues both on-site and off-site and off-site hotel and motel taxes. Table 1 provides a summary of an estimate of those benefits. Annually, stadium, retail, and office operations associated with the development are estimated to provide just over $14.1 million in revenues to the City of San Francisco.

Table 1. Summary of San Francisco Revenues from Ongoing Stadium Operations (Thousands of 2014 dollars)

Annual Project-Generated Revenues	General Fund Revenues	Dedicated and Restricted Accounts	All Accounts
Revenues From on-Site Businesses	$9,626 (84%)	$1,883 (73%)	$11,509 (82%)
Revenues From off-Site Hotels and Parking	$1,887 (16%)	$714 (27%)	$2,601 (18%)
Total Annual Project-Generated Revenues	$11,513 (100%)	$2,597 (100%)	$14,110 (100%)

Source: EPS and Keyser Marston Associates

Of these $14.1 million in revenues, $11.5 million are associated with the arena and on-site businesses. Although the majority of these revenues accrue to the general fund ($9.6 million), nearly $2 million goes directly to dedicated and restricted accounts. At the same time, nearly $2.6 million are estimated to be from off-site sources, $714 thousand of which are destined for dedicated and restricted accounts.

Table 2 provides estimates of detailed categories of revenues associated with ongoing economic activity once the development is completed. The largest categories of revenue include the stadium admission tax ($4.3 million), gross receipts taxes ($2.5 million) property taxes ($2.5 million, including both general fund and MTA revenues), hotel/motel or transient occupancy taxes ($1.7 million), and parking taxes ($2.4 million). These five categories account for the vast majority of revenues associated with the development.

As mentioned, there will also be one-time revenues associated with the construction of the arena and the accompanying office and retail space (Table 3). These benefits amount to just over $27.6 million, the vast majority of which is associated with the TIDF, or Transportation Impact Development

[4]Economic Planning Systems, *San Francisco Multi-Purpose Venue Project - Fiscal Impact Analysis: Revenues*, 9/25/15. (EPS)

15 [LC-GEN-1] cont.

Table 2. Details of San Francisco Revenues from Ongoing Stadium Operations (2014 dollars)

Item	Amount
Annual General Revenue	
Property Tax (General Fund)	$912,000
Property Tax in Lieu of VLF	$868,000
Sales Tax	$521,000
Hotel/Motel Tax (General Fund)	$1,667,000
Parking Tax	$482,000
Stadium Admission Tax	$4,336,000
Gross Receipts Tax	
On-site	$2,431,000
Off-site	$42,000
Utility User Tax	$254,000
Subtotal	$11,513,000
Annual Other Dedicated and Restricted Revenue	
Special Fund Property Taxes (Children's, Library, and Open Space)	$148,000
Public Safety Sales Tax	$260,000
San Francisco County Transportation Authority Sales Tax	$260,000
MTA Parking Tax	$1,929,000
Subtotal	$2,597,000
Total Ongoing Revenues	$14,110,000

Source: EPS, 9/25/15, Table 1

Fee.[5] Another significant source of one-time revenue comes in the form of a Property Transfer Tax, $4.2 million. Sales taxes and gross receipts taxes collected during construction add another $5.4 million.

[5]http://www.sf-planning.org/ftp/files/legislative_changes/new_code_summaries/120523_TIDF_Transportation_Impact_Development_Fee_Update.pdf Medical and Health Services, and Retail/Entertainment economic activity categories was increased to $13.30 per square foot, except that the rate for museums, a subcategory of CIE, are $11.05 per square foot, a reduction from the current amount. The rate for the Management, Information and Professional Services (MIPS) and Visitor Services economic activity categories was increased to $12.64 per square foot, and the rate for the Production/Distribution/Repair (PDR) category was reduced to $6.80 per square foot.

15 [LC-GEN-1] cont.

Table 3. Summary of One-Time Revenues from Stadium Construction (2014 dollars)

Item	Difference
City Fees (per gross building sq. ft.)	
Child Care	$662,000
Transit Impact Development Fee	$17,436,000
Other One-Time Revenues	
Sales Taxes During Construction	$2,355,000
Gross Receipts Tax During Construction	$2,953,000
Property Transfer Tax from Initial Land Sale	$4,200,000
Total One-Time Revenues	$27,605,000

Source: EPS, 9/25/15, Table 2. Revised by Marin Economic Consulting to reflect changes in Table A-6 of the EPS report.

– Costs

As with the benefits, there are also one-time and ongoing costs. The one-time costs are primarily those associated with enhancing transportation infrastructure and amount to $55.3 million.[6] These costs include Transit Investments (the purchase of light rail vehicles), the installation of crossovers, the construction of a new center boarding platform, power augments to idling event trains, traffic/signals engineering investments, and a Mariposa Street restriping study.

These expenses are spread out over a four-year period, with the vast majority of expenses occurring in the 2016-17 MTA fiscal year. A major expenditure on light rail vehicles is slated to take place in the 2017-18 FY, when the Event Center begins operating. The costs to MTA are heavily loaded in the early years of the project, before ongoing revenues have begun. Estimated one-time revenues will be available during this time to cover expenses, but they will fall short of the total by approximately $30.2 million.[7] This difference will be covered by contributions from San Francisco's General Fund, whether all at once or through the financing of these expenditures that are net of revenues.

Table 4 provides the details of the City's estimates of ongoing expenses related to the operation of the Event Center. As of early October, estimated annual net ongoing costs associated with operations at the Event Center amount to $6.2 million.[8] The vast majority, $5.1 million, are associated transit costs. It is worth noting that this estimate has decreased by $0.4 million between May and

15 [LC-GEN-1] cont.

[6]One-time costs are from SFMTA, **Capital and Operating Cost Estimates for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32**, 10/6/2015. Estimates are in 2014 dollars.

[7]This figure is the difference between $57.8 million, the total estimated capital uses estimate (not just that allocated to the project), and the total one-time revenues from Table 3.

[8]Ibid. The word "net" is included because the City has estimated revenues from fares and parking from riders going to events at the arena. These revenues amount to approximately $1.8 million, split roughly evenly between the two sources.

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October of this year. Other expenses are reported as they were presented in May, including nearly $1 million in additional policing, and $200 thousand in expenses incurred by DPW.

Table 4. Ongoing Costs of the Arena (millions of 2014 dollars)

Agency	May 18 Estimates	October 6 Revisions
SFMTA	$5.5	$5.1
SFPD	$0.9	
DPW	$0.2	
Total	$6.6	$6.2

Source: Golden State Warriors Arena: Event Management OCII Commission Presentation, May 18, 2015, and MTA, October 6, 2015.

– Net Benefits

The project comes with considerable costs and benefits. Both upfront net costs and ongoing net revenues are considerable. It is our view that the original EPS report was incomplete in not considering the implications of the project over time. It failed to provide a comparison of overall costs and benefits associated with the GSW project. The reviewer, Keyser Marston Associates, appeared to agree with the EPS approach, saying that a "cash flow approach is appropriate to evaluate a multi-phase project, which does not apply to this project." We respectfully disagree. There are two stages to this project: first, the one-time infrastructure investments and revenue implications of construction and parcel purchase, and second, the ongoing costs and revenues. The project's benefits to the City come inherently in two stages. If both stages yielded a net benefit, the need for a cash flow approach would not be nearly as acute. As the first stage is significantly negative, the overall net benefits must be evaluated over time in order to properly evaluate the project.

15 [LC-GEN-1] cont.

This has not been publicly done. Here, we consider a 20-year period following the construction of the Event Center. Given that many of these revenues accrue many years in the future, it is necessary to discount them to today's dollars. The bottom line is the present discounted value of the net stream of revenues to the City of San Francisco.

Assumptions crucial to the present value discount calculation:

1. Discount Rate: 4.0%
2. Rate of inflation: 2.5% (2% for property taxes, as per Proposition 13)

Table 5 provides an estimate of the present discounted value of net revenues to the City of San Francisco, using estimates from the EPS report of September 25, 2015 and from documents from the City of San Francisco. Once the facility has been operating for 20 years, net revenues are ex-

pected to be on the order of $95.7 million, or approximately $4.3 million per year over a 22-year period including two years of construction and 20 years of operation. This estimate includes the upfront expenses incurred by the City as well as the ongoing expenses associated with event traffic mitigation.

Table 5. Net Benefits of GSW Event Center Project over 22 years (Millions of Present Discounted 2014 dollars)

	Benefits	Costs	Net Benefits
One-Time	$27.6	$55.3	−$27.7
Ongoing	$221.4	$98.0	$123.4
Total	$249.1	$153.3	$95.7

Source: Calculations by Marin Economic Consulting.

The project pencils out as estimated. This calculus, however, begs two important questions:

1. This is a 12-acre plot of land in the middle of a biotechnology hub. Are there better uses for this land from a revenue perspective?
2. Estimating the costs associated with event management is a more certain endeavor than estimating the benefits. How certain is it that the benefits will materialize?

For a project of this magnitude, it is vitally important to evaluate the potential for plausible alternatives to provide more benefits than the project in question. It is also important to consider robustness tests for the revenues in question. Neither of these issues has been publicly addressed. This report will present plausible revenues associated with an alternative development, a space designed with biotech in mind, and will discuss weak points in the revenue estimates presented above.

15 [LC-GEN-1] cont.

3: On the Economics of Biotech as an Alternative

When evaluating the benefits of an economic endeavor, an exploration of alternatives is vital to understanding the full implications of an investment. Suppose that instead of building a 750,000-square-foot arena, the amount of commercial space on the property were doubled. In this section, we consider such an investment. In this exercise, we follow as closely as possible the assumptions contained in the EPS estimate of revenues associated with the GSW project.

Important assumptions associated with this analysis include:

1. Instead of a 750,000-square-foot arena, a commercial facility is constructed that provides 522,000 square feet of space. This constitutes an exact doubling of the commercial space in the GSW plan. This alternative development is otherwise comparable to the Warriors plan, including the original commercial, retail, and parking structures.

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2. The space is designed with biotechnology in mind, which brings with it significant laboratory space. As such, it has a relatively high amount of space per worker associated with it: 250 square feet per employee.[9]
3. The transaction price for the land is unchanged at $172.5 million.[10]
4. It is assumed that just two-thirds of the biotech revenues generated onsite are subject to gross receipts taxation in San Francisco.[11]
5. It is also assumed that a commercial facility would have ancillary benefits in terms of indirect and induced economic activity in San Francisco. Consistent with the EPS report, it is assumed that 90% of the ancillary output generated is subject to the Gross Receipts Tax.[12]

With the addition of these assumptions, an exercise analogous to that undertaken by EPS is performed for the new development. The new development includes the same retail revenues and costs, the same parking revenues, and essentially double the revenues associated with commercial development. Doubling the office space and maintaining other assets leads to an assessed value of at least $605.5 million. This is considerably less than the project's assessed value with an arena.

Support for the notion that this construction is feasible comes not only from the 750,000-square-foot arena that the buildings will be replacing, but also from a similar planned development. UCSF was planning to build 500,000 square feet on four acres of blocks 33-34, right next to the site.[13] A new building of the size being considered is clearly feasible on the space currently to be occupied by the arena.

Table 5 presents a comparison of the one-time revenues and expenditures associated with the Event Center versus doubling the commercial space on the 12-acre property. While the Event Center brings with it a need for considerable infrastructure to accommodate the development, it is not clear that a doubling of the commercial space does. Accordingly, the Event Center brings with it a net upfront cost of $37.5 million, relative to a commercial facility in place of the Center.

15 [LC-GEN-1] cont.

[9] This is an extremely conservative assumption. Some estimates suggest that a ratio of 150 to 11 is possible. This would considerably increase employment and hence output at the site, increasing the resulting income to both City residents and City coffers.

[10] The actual transaction price has been announced as $150 million. San Francisco Times, **Warriors buy Mission Bay arena site from Salesforce**, 10/13/2015. In this analysis, the transaction price is kept at $172.5 million to maintain comparability with the original EPS study. The change in sales price does have an effect on revenue estimates, but the effect is the same for both the Warriors plan and for the alternative, so it does not affect comparisons between the two.

[11] There are several avenues through which revenues may be exempt from gross receipts taxes in San Francisco. This analysis is extremely conservative in assuming that this is more likely the case for biotechnology firms (perhaps because of significant revenues accruing through pass-through companies) than for firms in other industries.

[12] Estimates of these benefits are derived from the 2013 San Francisco County model of IMPLAN. It should be noted that the EPS report does not provide estimates of the ancillary effects of the commercial aspect of the current project. This report similarly omits those benefits for the existing commercial development, but does include them for the commercial property that could be built in place of the stadium. These ancillary benefits are also reduced by one-half to provide a conservative estimate of the development's contribution to net revenues.

[13] **UCSF, Salesforce in talks for S.F. Mission Bay land deal**, SFGate, March 15, 2014.

Table 5. Summary of One-Time Revenues from Development
(Thousands of 2014 Dollars)

Category	Biotech	GSW Arena	Difference
Property Transfer Tax	4,200	4,200	0
City Fees - TIDF	10,902	17,436	-6,534
- Child Care	1,263	662	601
Construction			
- Sales Taxes	1,617	2,354	-737
- Gross Receipts Taxes	2,028	2,953	-925
Total	20,010	27,605	-7,595
One-Time Expenses Associated with Development			
Infrastructure Improvements	10,901	55,308	-44,407
Net One-Time Revenues Associated with Development			
Immediate Net Revenue Impact	9,108	-28,410	37,518

Source: EPS Report (9/25/15) and calculations by Marin Economic Consulting.

Although capital expenditures related to the Event Center are significantly higher than the revenues brought in through the TIDF, such is not expected to be the case for additional commercial space. The TIDF was put in place with developments such as this alternative in mind. Therefore, the transit costs associated with the development are better approximated using the TIDF taxation formula. The TIDF collected from the hypothetical alternative development (including the commercial, retail and parking in the GSW project) will serve as our estimate of related transit costs, $10,901.

In the analysis above, the sales price for the property on which the event center and accompanying commercial and retail structures will be built is the same as in the EPS report: $172,546,000. Property transfer tax would result regardless of the purchaser and the end use, but conceivably at a higher price. Salesforce originally paid $278 million dollars for 14 acres (including the space in question) in 2010. The current sales price is $172.5 million for 12 acres (actual is $150 million). The plot of land in question represents the majority of the plot originally purchased by Salesforce, and is the largest single contiguous piece. Property values have also increased substantially since the original purchase by Salesforce.[14] It seems likely then that the value of the land would have increased significantly over the last five years as San Francisco is currently starved for commercial real estate. In the end, the price that the Warriors have paid for the land is surprisingly low. It represents the bulk of a property that was valued at $278 million in 2010 and market values have only increased in the intervening years. Therefore, the actual market value of the land may well be higher than the price the Warriors have been offered and have paid, with correspondingly higher transfer taxes resulting from some alternative development.

15 [LC-GEN-1] cont.

[14] **Salesforce.com Is Said to Plan Sale of San Francisco Land**, Bloomberg Business, March 11, 2014.

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Table 6 provides an analysis of the annual City revenues and expenses that can be attributed to each of the projects.[15] The first column is for the alternative development which targets the biotechnology industry. The second column reflects estimates regarding the current Golden State Warriors project, and the final column presents the difference in expected revenue between the two.

Table 6. Summary of Annual Revenues and Expenses (in Thousands of 2014 Dollars)

Category	Biotech	GSW Arena	Difference
Annual Direct General Revenue			
Property Tax (General Fund)	$603	$912	-$309
Property Tax in Lieu of VLF	$570	$868	-$298
Sales Tax	$253	$521	-$268
Hotel/Motel Tax (General Fund)	$0	$1,667	-$1,667
Parking Tax	$243	$482	-$239
Stadium Admission Tax	$0	$4,336	-$4,336
Gross Receipts Tax			
On-site	$4,078	$2,431	$1,647
Off-site	$0	$42	-$42
Utility User Tax	$249	$254	-$5
Subtotal	$5,996	$11,513	-$5,517
Annual Other Dedicated and Restricted Direct Revenue			
Special Fund Property Taxes (Children's, Library, and Open Space)	$98	$148	-$50
Public Safety Sales Tax	$127	$260	-$133
San Francisco County Transportation Authority Sales Tax	$127	$260	-$133
MTA Parking Tax	$971	$1,929	-$958
Subtotal	$1,322	$2,597	-$1,275
Total Revenues	$7,318	$14,110	-$6,792
Annual Development-Related Expenses			
SFMTA	$0	$5,100	-$5,100
SFPD	$0	$900	-$900
DPW	$0	$200	-$200
Total Expenses	$0	$6,200	-$6,200
Net Annual Revenues	$7,318	$7,910	−$592
Ancillary Benefits Associated with Each Project			
Gross Receipts Tax	$754	$0	$754
Total Annual Net Revenue Expectation	$8,071	$7,910	$162

Source: EPS Report and calculations by Marin Economic Consulting.

In most categories, the annual revenues are greater for the Event Center than for a development with additional commercial space. The exception is in the Gross Receipts Taxes, where a biotech firm occupies the additional commercial space. Taken as a whole, annual revenues from a purely

15 [LC-GEN-1] cont.

[15] This alternative is chosen because it will allow the use of most of the EPS parameters and assumptions in producing annual revenues for the alternative project. See the Appendix for a comparison of calculations between this project and the EPS report.

commercial development are $6.8 million less than for the project under consideration. Once the expenses related to the activities at the Event Center are taken into consideration, annual net revenues are nearly identical. However, expanding the commercial element of the development has considerable ancillary benefits. Most economic functions both make purchases from the broader economy and also compensate workers, who then in turn make purchases from the broader economy. The gross receipts taxes associated with output in the San Francisco economy that is related to activities in the additional commercial space are estimated to be $754,000 per year.[16] Once these benefits have been considered, the commercial development results in $162,000 more in revenues annually than would the arena (last line of Table 6). From a net revenue perspective, a commercial development dominates the Event Center.

As discussed above, merely calculating the one-time costs and an estimate of the ongoing revenue is insufficient. Were it sufficient, a commercial project focused on biotech would clearly dominate the current project. Table 7 provides an evaluation of the 22-year net benefits of an alternative development with space devoted to biotechnology comparable to the evaluation for the current project.

Table 7. Net Benefits of Alternative Developments after 22 Years
(Millions of Present Discounted 2014 Dollars)

	Biotechnology		Net Benefits		
	Benefits	Costs	Biotech	GSW	Difference
One-Time	$20.0	$10.9	$9.1	−$27.7	$36.8
Ongoing	$126.5	$0.0	$126.5	$123.4	$3.1
Total	$146.5	$10.9	$135.6	$95.7	**$39.9**

Source: Calculations by Marin Economic Consulting

According to these calculations, an alternative development would provide an extra $39.9 million in revenues for the City of San Francisco (as in Table 7). Net present discounted revenues for the project with an Event Center are $95.7 million, while a project with commercial space devoted to attracting biotechnology firms has a discounted value of net revenues expected to be $135.6 million, a difference of $39.9 million dollars, or an additional $1.8 million each year on average over the 22 years.

From a cash flow perspective, there is a deep hole early on with the Event Center. The first three columns of Table 8 present annual present discounted flows of revenues into San Francisco City coffers. The final three columns provide a cash flow, or cumulative contribution to City coffers. Several things are immediately apparent from the table:

1. The Event Center puts an enormous hole in the City's budget in the first year (row 1, column 4).

15 [LC-GEN-1] cont.

[16]This is half of what is implied by IMPLAN in order to maintain the conservative nature of these estimates.

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2. Substituting a commercial development is cash flow positive in the first year (row 3, column 5).
3. It will take four years of operation of the Event Center to dig the City out of the hole (column 6).
4. Although the gap in annual discounted net revenue closes over time, it remains significant even in year 20 (last row, column 4).
5. In year 20 of Event Center operations, there remains a surplus of revenue in the amount of $39.9 million for the biotechnology development (last row, last column), which continues to grow in subsequent years.

A final issue that differentiates a biotechnology-centric development over an arena is one of economic impact. It is clear from the economics literature that sports stadiums and arenas provide little economic boost to the local economy. At the same time, it is clear that these facilities are responsible for generating some local economic activity. The failure to add to a region's economy is because they tend to displace other entertainment purchases from the broader economy rather than to stimulate new spending. An individual may go to a basketball game instead of to a play, opera, symphony, or rock concert. These facilities are therefore not additive to the economy.

Nonetheless, it has been estimated that economic activity associated with Oracle Arena accounts for $44.9 million in economic Activity and 494 jobs in Alameda County.[17] It seems likely that the impact of the new arena will be of a similar magnitude.

By comparison, a 522,000 square foot biotechnology facility, with a ratio of space to employee of 250 to 1 can accommodate more than 2,000 employees. That represents four times more employment for biotechnology than for the Arena. It is also consistent with an estimate of economic output on the order of $1 billion, an order of magnitude higher than for the Arena. Accordingly, the biotechnology development can serve as a much more significant engine of economic growth for the region than can the new event center. Ancillary (indirect and induced) economic benefits for the City of San Francisco are estimated to similarly be in excess of $1 billion. The gross receipts tax implications for the City of San Francisco are conservatively estimated to be $754,000 per year.[18]

15 [LC-GEN-1] cont.

[17]Memo to Patrick Soluri, Attorney at Law, from Philip King, Ph.D., regarding Urban Decay Analysis of Proposed Relocation of Golden State Warriors from Oakland to San Francisco, page 9.

[18]These estimates are from the 2013 San Francisco County model of IMPLAN and have been scaled to 2014 dollars. The actual estimates of ancillary output generated were divided by two in order to keep the estimates conservative. The actual revenues could be significantly greater.

Table 8. Stream of Net Revenues over Time
(Thousands of 2014 Discounted Dollars)

	Annual			Cumulative		
Year	Biotech	GSW	Difference	Biotech	GSW	Difference
One-Time Net Revenues:						
2016	$9,108	-$27,704	$36,812	$9,108	-$27,704	$36,812
Start of Ongoing Revenues:						
2017	$7,600	$7,440	$160	$16,708	-$20,264	$36,972
2018	$7,450	$7,290	$160	$24,158	-$12,974	$37,132
2019	$7,302	$7,142	$160	$31,460	-$5,831	$37,292
2020	$7,157	$6,998	$159	$38,618	$1,167	$37,451
2021	$7,016	$6,857	$159	$45,633	$8,024	$37,609
2022	$6,877	$6,718	$158	$52,510	$14,742	$37,768
2023	$6,740	$6,583	$157	$59,250	$21,325	$37,925
2024	$6,607	$6,450	$157	$65,857	$27,775	$38,082
2025	$6,476	$6,320	$156	$72,333	$34,095	$38,238
2026	$6,348	$6,192	$155	$78,681	$40,288	$38,393
2027	$6,222	$6,068	$154	$84,903	$46,355	$38,547
2028	$6,099	$5,945	$154	$91,001	$52,300	$38,701
2029	$5,978	$5,825	$153	$96,979	$58,126	$38,854
2030	$5,860	$5,708	$152	$102,839	$63,834	$39,006
2031	$5,744	$5,593	$151	$108,583	$69,427	$39,157
2032	$5,630	$5,480	$150	$114,213	$74,907	$39,307
2033	$5,519	$5,370	$149	$119,732	$80,277	$39,456
2034	$5,410	$5,262	$148	$125,142	$85,538	$39,603
2035	$5,303	$5,156	$147	$130,444	$90,694	$39,750
Year 20 of Event Center operation:						
2036	$5,198	$5,052	$146	$135,642	$95,746	$39,896

Source: Marin Economic Consulting

4: Questioning the Benefits and Costs of the GSW Project

There are few guarantees with economic endeavors. Assuming that the conditions that exist today will exist tomorrow, the day after that, or 20 years from now is of dubious merit. Conditions change. The level of success of a basketball team ebbs and flows (though hopefully not for the Warriors), the economy grows and shrinks, modes of transportation change, and the availability of hotel rooms may decline as demand grows but supply does not.

This certainly holds true for the construction of an arena. While it is quite likely that the Warriors will play at the arena for the foreseeable future and experience a high level of success for some time, it is not certain that the estimated revenues will materialize. As a case in point, the EPS study assumes a sales price for the land of $172,546,000. It has just been announced that the sales price was $150,000,000. That represents a reduction in sales price of 13%, with a corresponding reduction in revenues that are tied to the sales price: transfer taxes and ongoing property taxes. Although the long-term implications of a decline in ongoing property taxes is likely small, the transfer tax is reduced from $4.2 million to $3.65 million, a reduction in one-time revenues of $549,000. Granted, this is just one percent of the one-time transit costs associated with the project, but it is more than half a million dollars no longer available for other city needs.

15 [LC-GEN-1] cont.

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Two categories of revenue are particularly suspect: hotels and parking. With regard to hotels, it is not immediately clear that moving the venue from Oakland to San Francisco will necessarily lead to a significant increase in demand for hotel rooms in San Francisco. With regard to parking, the demand for parking ebbs and flows with the economy. It is also likely that demand for parking will decline significantly in the coming years. Estimates included in the EPS report are therefore likely biased upward and those revenues will not fully materialize.

– Hotel/Motel Occupancy Tax

There are primarily two concerns related to forecasts of increased demand for hotel rooms in San Francisco resulting from the construction of the Event Center. First, San Francisco hotel occupancy rates for much of the year are very high, implying little excess capacity to be filled by basketball fans. During times of high demand for hotel rooms in San Francisco, many of those staying overnight for an event at the arena may choose to stay outside of the City. Alternatively, the demand resulting from arena events may well divert others to hotel rooms outside of the City. Second, it is also likely that many overnight visitors for the Warriors games currently stay in San Francisco, despite attending a game played in Oakland. Despite the change of venue to San Francisco, it is not clear that this shift will result in a significant net increase in demand for San Francisco hotel rooms.

The EPS estimates of revenues associated with the GSW project indicate an increase in hotel room occupancy. However, San Francisco is generally regarded as having a significant shortage of hotel rooms and to be operating near full capacity. Indeed, occupancy rates for San Francisco are high by any standard. San Francisco ranks third nationally in occupancy rates; New York is ranked #1.

The EPS report assumes that 10% of Event Center attendees are potential overnight visitors but that only half of them will constitute new demand for hotel rooms in San Francisco. This assumption represents an increase in demand for hotel rooms of approximately 50,000. However, it is likely that many current overnight visitors to Oracle Arena stay in San Francisco. It is entirely possible that a new arena will have a much smaller net impact on the demand for hotel rooms in San Francisco. This puts some $1.7 million in expected additional revenues in question. If half of this demand does not materialize, or is displacement of other demand for hotel rooms in the City, this could reduce overall revenues by half, or by $800,000 to $900,000 in each year of operation, amounting to more than $13 million in present discounted terms over 20 years of arena operation.

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– Parking

Going forward, the use of personal vehicles and hence the demand for parking, as well as transit services, is going to be subject to significant disruption. In particular, ride-sharing services continue to grow, especially in San Francisco. With the use of these vehicles, the demand for parking at an event site will likely decline. There is also growing evidence that autonomous vehicles will be available in the near future. Several automobile and tech companies have announced a target date of 2020 for making these cars, or cars with this capacity, available to the general public. The growth of ride-sharing and the development of autonomous vehicles will likely reduce the demand for parking, particularly the demand related to attending events. The advent of autonomous cars being used in car-sharing will significantly increase the rate at which parking demand declines. Current estimates are that the Event Center will result in the demand for parking spaces on the order of 422,000 per year. Some of this demand for parking is likely to evaporate over time.

There could also be a significant decline in the demand for public transportation resulting from increased car-sharing. This has several implications. First, planned investments in infrastructure designed to expand transit availability to serve events may be rendered to some extent obsolete as people move away from transit and toward the use of autonomous vehicles, whether shared or privately owned. This represents a move away from transit toward private vehicles. Despite the projected decline in parking demand, this represents increased need for traffic mitigation of some sort. There will likely be an increase in vehicular traffic to and from the Event Center that could have implications for the arena's neighbors.

With the advent of autonomous vehicles and greater use of ride-sharing services, it is possible that demand for parking could decline significantly over the coming years. If we assume that it declines at a rate of 1% each year, that would reduce revenues associated with parking by $3.8 million over the 20-year time horizon. It will also reduce parking demand for a biotechnology development, but by less, just $1.9 million over 20 years. Should parking demand decline more quickly (5%/year), revenues could decline by as much as $15 million

– Net Benefits

The point of this discussion is that estimated revenues are suspect, while estimated costs are much more likely accurate. Fixed investments, in particular, are known and not subject to market whims. However in this case, there are unknowns lurking in the cost estimates. It is likely that the revenue implications are biased high, resulting in uncertainty over their future stream with more downside risk than upside. It is already the case that actual one-time revenues have turned out to be less than anticipated (such as the transfer tax, which was lower by $549,000) and that the City has revised its

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estimates of one-time costs upward (by nearly $16 million) and its estimates of ongoing expenses upward (by $1.4 million in each year). Clearly, there is great uncertainty in almost all of these estimates.

5: Some Sensitivity Analysis

In each case, the revenue estimates relating to the GSW project and the revenue estimates relating to a biotechnology center are uncertain. It is therefore worthwhile to experiment with basic assumptions to better understand the implications for City revenues. Table 9 offers some evidence for the implications of particular assumptions. We provide four separate alternatives that relax in different ways the assumptions inherent in the baseline analysis. The top line of the table presents the baseline results of the analysis, the estimates of present discounted net revenues accruing to the City (corresponding to the last row in Table 7). In the case of the biotechnology development net present discounted revenues are $135.6 million whereas they are just $95.7 million for the GSW project, a difference of $39.9 million.

Table 9. Summary of Net Present Discounted Value Associated with Alternatives (22 Years, 2015-2036) Comparing the Multi-Purpose Venue with a Biotechnology Center (Millions)

			Difference	
Item	Biotech	GSW	Over 22 Years	Per Year
Baseline	$135.6	$95.7	$39.9	$1.8
Alternative 1	$135.6	$82.6	$53.1	$2.4
- Hotel/Motel Revenues are overstated by 50% in EPS report		$Over Baseline$:	$13.2	
Alternative 2	$147.0	$95.7	$51.2	$2.3
- Area to employee ratio for Biotech of 200/1		$Over Baseline$:	$11.3	
Alternative 3	$154.5	$95.7	$58.7	$2.7
- Add 200,000 sq ft to New Commercial Space (722,000 total)		$Over Baseline$:	$18.0	
Alternative 4 (Extreme)	$234.2	$82.6	$151.6	$6.9
- Area to employee ratio for Biotech of 150/1		$Over Baseline$:	$111.7	
- 100% of Biotech revenues are subject to GRT				
- Hotel/Motel Revenues are overstated by 50%				
- Add 200,000 sq ft to New Commercial Space (722,000 total)				

Source: Marin Economic Consulting

The first alternative scenario assumes that one-half of the demand for hotel rooms in San Francisco fails to materialize with the GSW project. This results in a reduction of approximately $13.2 million

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cont.

in net present discounted revenues. The revenues associated with the biotechnology development are unchanged because there are no transient occupancy tax revenues assumed to occur.

The second alternative assumes a greater density of employment in the new commercial facility, leaving the existing commercial plans constant. If there are 200 square feet per employee, rather than 250, revenues associated with the new facility increase by more than $11.3 million relative to the baseline. This increase in revenue stems largely from an increase in the output produced by the building's occupants, resulting in increased gross receipts tax revenues. It also increases the occupants interactions with the broader San Francisco economy, having a positive impact on ancillary benefits. Further reducing the space per employee will have correspondingly larger increases in revenues.

A third alternative assumes a larger facility is constructed, with 722,000 square feet of space rather than 522,000 square feet of space. This increases the number of employees working in the space by nearly 40%, holding the assumption that 250 square feet per employee is required. With greater space comes increased employment and increased output and increased demand for the output of the rest of the San Francisco economy. Accordingly, revenues are estimated to increase by nearly $18.0 million with an expanded space. Under this scenario, the net discounted value of City revenues increases by $58.7 million relative to the GSW project. Even larger spaces would have a correspondingly larger impact on City revenues.

Finally, an extreme alternative is offered. Alternative 4 allows for a 150 to 1 ratio of square feet to employees, assumes that all of the revenues accruing to the biotech occupants are subject to the GRT, reduces by one-half assumed hotel/motel TOT revenues associated with the Event Center, and involves a building with 722,000 square feet. Under this alternative, City revenues increase by $111.7 million relative to the baseline, with biotechnology revenues exceeding GSW revenues by nearly $151.6 million over 22 years and $6.9 million per year.

These alternatives are not put forward to suggest that there is $151.6 million being left on the table (though there may be), but rather to illustrate the range of differences that underlying assumptions can make. At the same time, even the extreme alternative is plausible.

15 [LC-GEN-1] cont.

6: Re-Evaluating the Net Benefits of Hosting the Warriors

There are two fundamental points made in this report:

1. Estimates of costs and revenues are highly speculative, and the evidence suggests that there is more downside risk to the GSW project than upside.
2. There is significant revenue that is forgone by the City in order to bring the Warriors to town.

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Both of these points raise significant questions about the Warriors arena project from a financial perspective. First, how comfortable are taxpayers in their understanding of the implications of this development? Second, is this the right development?

The respective answers are "not very" and "quite possibly no." There is uncertainty in the information available and replacing the Event Center in the project with additional commercial space has the potential to increase City revenues significantly.

Another way of thinking about the differences in revenues between the GSW project and a biotechnology development is that these differences reflect the price the City is paying in order to bring the Warriors to town. There are certainly other more tangible costs, but these costs are also real.

The above analysis indicates that even with relatively conservative assumptions, in particular those surrounding employment in the new development and the size of the new development, a biotechnology center would increase City revenues significantly relative to the Event Center. Under the baseline scenario, the difference is $39.9 million over 22 years. Under the most extreme, yet plausible, scenario presented, an additional $151.6 million could be raised over the 22-year period. This analysis presents a range of increases of between $1.8 and $6.9 million per year. It should be noted that the extreme alternative does not include the possibility of a larger facility. Were it to do so, the forgone annual revenues would be significantly higher. This suggests that the City of San Francisco is likely paying more than $1.8 million and possibly upwards of $7 million per year in forgone revenues in each of the next 22 years to accommodate the Warriors.

Every economic development represents a choice. That choice is between the proposed development and plausible alternatives. The City has chosen to pursue a basketball team without exploring or disclosing the relative merits of the project compared with plausible alternatives. This report is not designed to condemn the choice, but rather to better inform the debate on the implications of this choice.

15 [LC-GEN-1] cont.

APPENDIX: Details of Annual Revenue Calculations for Biotech in Comparison with the Warriors Project

This appendix provides tables illustrating key differences in the assumptions and results between the analysis presented in the EPS report of 9/25/15 and the biotechnology project discussed in the text. The tables very closely mirror those in the EPS report and reproduce assumptions and results from that report. Some tables are not applicable to the biotechnology project and are omitted. In particular, Tables A-9 through A-11 are omitted. It should also be noted that these tables have not been updated to reflect the actual purchase price paid by the Warriors. It does, however, include updates to the City's estimates of one-time and ongoing costs.

Table A-1. San Francisco Revenue Summary (Thousands of 2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	GSW	Biotech	Difference
Annual General Revenue			
Property Tax (General Fund)	$912	$603	-$309
Property Tax in Lieu of VLF	$868	$570	-$298
Sales Tax	$521	$253	-$268
Hotel/Motel Tax (General Fund)	$1,667	$0	-$1,667
Parking Tax	$482	$243	-$239
Stadium Admission Tax	$4,336	$0	-$4,336
Gross Receipts Tax			
On-site	$2,431	$4,078	$1,647
Off-site	$42	$0	-$42
Utility User Tax	$254	$249	-$5
Subtotal	$11,513	$5,996	-$5,517
Annual Other Dedicated and Restricted Revenue			
Special Fund Property Taxes (Children's, Library, and Open Space)	$148	$98	-$50
Public Safety Sales Tax	$260	$127	-$133
San Francisco County Transportation Authority Sales Tax	$260	$127	-$133
MTA Parking Tax	$1,929	$971	-$958
Subtotal	$2,597	$1,322	-$1,275
TOTAL REVENUES	$14,110	$7,318	-$6,792

Source: EPS and Marin Economic Consulting

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Table A-2. San Francisco City One-Time Fee Revenue Summary (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	GSW	Biotech	Difference
New Gross Building Area (sq.ft.)		1,156,500	
City Fees (per gross building sq.ft.)			
Child Care	$661,870	$1,263,240	$601,370
Transit Impact Development Fee	$17,435,765	$10,901,655	−$6,534,110
Total Development Impact Fee	$18,097,635	$12,164,895	−$5,932,740
Other In-Lieu Impact Fees			
Other One-Time Revenues			
Sales Taxes During Construction	$2,354,634	$1,617,159	−$737,475
Gross Receipts Tax During Construction	$2,953,050	$2,027,835	−$925,215
Property Transfer Tax from Initial Land Sale	$4,200,000	$4,200,000	$0

Source: EPS and Marin Economic Consulting

Note: The gross building area for the biotechnology development includes four commercial buildings with 1,044,000 square feet and retail of 112,500 square feet.

15 [LC-GEN-1] cont.

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Table A-3. San Francisco Property Tax Estimates (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Biotech	Difference
Secured Assessed Value				
Multi-Purpose Venue		$550,000,000	$0	$550,000,000
Other Development				
Event Management/Team Operations Space		$14,500,000	$0	$14,500,000
Retail		$41,343,750	$41,343,750	$0
Office		$302,760,000	$605,520,000	−$302,760,000
Parking		$33,250,000	$33,250,000	$0
Subtotal		$941,853,750	$680,113,750	$261,740,000
New Taxable Value				
Gross Secured Possessory Interest/Property Tax	1.0% of new AV	$9,418,538	$6,801,138	$2,617,400
Unsecured Tax from the Warriors		$183,333	$0	$183,333
Unsecured Tax from Other Uses		$391,854	$0	$391,854
Subtotal		$9,993,725	$6,801,138	$3,192,587
(less) Existing Taxes		−$1,795,169	−$1,795,169	$0
Total		$8,198,556	$5,005,969	$3,192,587
Property Tax				
Tier 1 Property Tax Pass Through	20.00%	$1,639,711	$1,001,194	$638,517
Tier 2 Property Tax Pass Through	16.8%	$1,377,357	$841,003	$536,355
Tier 1 and 2 Property Tax Pass Throughs	36.80%	$3,017,068	$1,842,196	$1,174,872
Net New General Fund Share (after ERAF)	55.59% property tax tier 1 pass through	$911,515	$556,564	$354,952
Special Funds	9.00% property tax tier 1 pass through	$147,574	$90,107	$57,467
SF Unified School District	7.70% property tax pass through	$232,314	$141,849	$90,465
Affordable Housing Set Aside		$1,639,711	$1,001,194	$638,517

Source: EPS and Marin Economic Consulting

15 [LC-GEN-1] cont.

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Table A-4. Property Tax in Lieu of VLF Estimates (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	GSW	Biotech	Difference
Citywide Total Assessed Value (millions $)	$172,489	$172,489	
Total Assessed Value of Project (millions of $)	$941.85	$680.11	$261.74
(less) Existing Value	−$179.52	−$179.52	
Net Increase in Project Assessed Value (millions $)	$762.34	$500.59	$261.75
Growth in Citywide AV due to Project	0.442%	0.290%	
Total Property Tax in Lieu of Vehicle License Fee (VLF) (FY2014-15)	$196,480,000	$196,480,000	
New Propety Tax in Lieu of VLF	$868,372	$570,220	$298,152

Source: EPS and Marin Economic Consulting

Table A-5. Property Transfer Tax (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Biotech
One-Time Transfer Tax			
Estimated Land Sale		$172,546,000	$172,546,000
One-Time Transfer Tax	$24.34 per $1,000 value	$4,199,770	$4,199,770

Source: EPS and Marin Economic Consulting
Note: The actual transaction price for the property is $150 million.

15 [LC-GEN-1] cont.

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Table A-6. Sales Tax Estimate (thousands of 2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Biotech	Difference
Taxable Sales from Multi-Purpose Venue				
Warriors Game Concessions and Merchandise	$21.60 per attendee	$15,768		
Other Event Concessions	$11.00 per attendee	$12,859		
Total		$28,627		
Sales Tax to General Fund	1.0% of taxable sales	$286		
(less) Existing Sales Shift		−$18		
Net New Sales Tax		$267		
Taxable Sales From Commercial Space				
Retail	$450 per sq ft	$50,625	$50,625	$0
Sales Tax to San Francisco	1.0% of taxable sales	$506	$506	$0
(less) Shift From Existing Sales		−$253	−$253	$0
Net New Sales Tax		$253	$253	$0
Annual Sales Tax after Shift of Existing Sales				
Sales Tax to the City General Fund	1.00%	$521	$253	−$268
Public Safety Sales Tax	0.50% of taxable sales	$260	$126	−$133
San Francisco County Transportation Authority	0.50% of taxable sales	$260	$127	−$134
SF Public Fnancing Authority (Schools)	0.25% of taxable sales	$130	$63	−$67
One-Time Sales Taxes on Construction Materials and Supplies				
New Taxable Value		$941,854	$680,114	−$261,740
Supply/Materials Portion of Development Value	50.00%	$470,927	$340,057	−$130,870
San Francisco Capture of Taxable Sales	50.00%	$235,463	$170,028	−$65,435
Sales Tax to San Francisco	1.0% of taxable sales	$2,355	$1,700	−$654

Source: EPS and Marin Economic Consulting

15 [LC-GEN-1] cont.

Table A-7. Transient Occupancy Tax Estimates Estimate (2014 dollars)
The implications of over-estimating hotel and motel occupancy.

Item	Assumptions	GSW	50% of GSW	Difference
Overnight Attendees in San Francisco for Multi-Purpose Venue Events				
Events per Year		205	205	0
Total Turnstile Attendance		1,899,000	1,899,000	0
Potential Overnight Visitors		189,900	189,900	0
Net New Overnight Visitors	50% (25%)	94,950	47,475	−47,475
Hotel Room Demand	1.90 people per room	49,974	24,987	−24,987
Off-Site Hotel/Motel Room Proceeds	$238 per-room night	$11,907,203	$5,946,868	−$5,960,335
Total Hotel/Motel Tax Revenue	14% of room revenue	$1,667,012	$832,562	−$834,450

Source: EPS and Marin Economic Consulting

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Table A-8. Parking Tax Estimates (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Assumptions	50% of GSW	Difference
Total Spaces On-Site		950		950	
Parking Revenues On-Site					
Total	$25 per day	$8,668,750	$20 per day	$6,935,000	
(less) Vacancy	30%	−$2,600,625	30%	−$2,080,500	
Total		$6,068,125		$4,854,500	
Spaces Off-Site					
Annual Demand (spaces)		$178,791			$0
Total Parking Revenue	$20 per day	$3,575,821			$0
San Francisco Parking Tax	25% of annual revenue	$2,410,987	25% of annual revenue	$1,213,625	−$1,197,362
Parking Tax Allocation to Gen'l Fund/Special Projects	20% of tax proceeds	$482,197	20% of tax proceeds	$242,725	−$239,472
Parking Tax Allocation to Municipal Transportation Fund	80% of tax proceeds	$1,928,789	80% of tax proceeds	$970,900	−$957,889

Source: EPS and Marin Economic Consulting

15 [LC-GEN-1] cont.

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Table A-12. Parking Tax Estimates (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Biotech	Difference
Arena Utility Cost		$1,490,000	$0	−$1,490,000
Other Uses				
Retail	$2.87 per sq.ft.	$322,875	$322,875	$0
Office (Including Event Management and Team Operations)	$2.87 per sq.ft.	$1,569,890	$2,996,280	$1,426,390
Total Annual Commercial Utility Cost		$3,382,765	$3,319,155	−$63,610
Utility User Tax	7.5% of commercial utility cost	$253,707	$248,937	−$4,771

Source: EPS and Marin Economic Consulting

15 [LC-GEN-1] cont.

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November 2, 2015

By personal delivery to:	By email to: *warriors@sfgov.org*:
Commission on Community Investment and Infrastructure Attn: Claudia Guerra, Commission Secretary Office of Community Investment and Infrastructure 1 South Van Ness Avenue, 5th Floor San Francisco, CA 94103 and email to: claudia.guerra@sfgov.org	Ms Tiffany Bohee OCII Executive Director c/o Mr. Brett Bollinger San Francisco Planning Department 1650 Mission Street, Suite 400 San Francisco, CA 94103

Re: Warriors Arena Project: Secondary Use Finding, Lack of Fair Trial, and Request for Documents under the California Public Records Act and the San Francisco Sunshine Ordinance.

Dear Ms Bohee and Mr. Bollinger:

This office represents the Mission Bay Alliance ("Alliance"), an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project"). The Mission Bay Alliance objects to approval of this Project and certification of the Proejct SEIR.

I write today regarding the discussion of secondary uses in Attachment C to the Memorandum to the CCII from Executive Director Tiffany Bohee for Items 5(a), 5(b), 5(c), 5(d) & 5(e) the November 3, 2015, CCII meeting agenda. The short time period between the October 29, 2015, publication of this memorandum and the November 3, 2015, OCII hearing to determine the "secondary use" question for the public to respond deprives my client of a fair trial under subdivision (b) of section 1094.5 of the Code of Civil Procedure.

1 [LC-GEN-5]

The November 17, 2014 Initial Study for the Project asserted the event center is an allowable secondary use under the Redevelopment Plan because "The proposed event center uses are

2 [LC-PP-1]

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considered 'nighttime entertainment uses.'"[1]

Then on July 26, 2015, Susan Brandt-Hawley, my co-counsel for the Alliance, submitted a letter to OCII arguing that "The Event Center is not 'Nighttime Entertainment' as Defined in the Mission Bay South Redevelopment Plan." (July 26, 2015, Brandt-Hawley Law Group letter, p. 3.)

Now, almost a year after the Initial Study and three months after Ms Brandt-Hawley's letter, the first suggestion that OCII might change its position on whether or how the event center is an allowable secondary use under the Redevelopment Plan is a short line in the Responses to Comments published on October 23, 2015, stating that "the Mission Bay Redevelopment Plan analyzed under the 1998 SEIR permits all of the project uses as either principally permitted uses (Office, Retail, Arts Activities, Open Recreation / Outdoor Activity Areas, Parking) or as secondary uses (Assembly and Entertainment Uses, including Nighttime Entertainment and Recreation building uses, as well as other uses such as Public Structures and Uses of a Nonindustrial Character)." (FSEIR/RTC, Volume 4, p. 13.3-27.)

Then, only three business days before the OCII hearing to determine this question, Ms. Bohee's memorandum for the first time publicly asserts a rationale for considering the event center an allowable secondary use as either a "recreation building" or a "public structure or use of a nonindustrial character." (See Attachment C, pp. 6-7.) Aside from the substantive inadequacy of the rationale, which will be the topic of separate correspondence, this short turnaround time on a question of this importance deprives the public, and my client, of a fair trial under subdivision (b) of section 1094.5 of the Code of Civil Procedure.

In addition, Attachment C states that the "determination" that the event center is a "public structure or use of a nonindustrial character" is "consistent with OCII precedent; for example, in approving the UCSF Medical Center the Executive Director found that it constituted a secondary use as a public structure notwithstanding those members of the public generally pay for medical services provided at the center." (Attachment C, p. 7.)

2 [LC-PP-1] cont.

My client hereby requests, under the fair trial requirement of Code of Civil Procedure section 1094.5(b), the California Public Records Act, and the San Francisco Sunshine Ordinance, that OCII produce to my office, immediately and before the November 3, 2015, OCII hearing, a copy of any

3 [LC-GEN-5]

[1]"The proposed project would result in the construction and operation of an event center, office and retail uses, parking facilities and open space areas within the project site. The retail and office uses would be generally consistent with the previously proposed uses for the site, such that no new or more severe conflicts with land use character would occur. The proposed event center uses are considered "nighttime entertainment uses...." (Initial Study, p. 33)

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documents that memorialize any previous determinations by the OCII, the Redevelopment Agency, or the Executive Director on whether a proposed building in the Mission Bay South Redevelopment Plan area is an allowable as a secondary use because it is either (1) a place for night time entertainment, (2) a recreation building, or (3) a public structure or use of a nonindustrial character; including any document memorializing the Executive Director's finding that the UCSF Medical Center "constituted a secondary use as a public structure."

3 [LC-GEN-5] cont.

Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

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November 2, 2015 [2 of 2]

By personal delivery at Nov. 3, 2015, hearing to: Commission on Community Investment and Infrastructure Attn: Claudia Guerra, Commission Secretary Office of Community Investment and Infrastructure 1 South Van Ness Avenue, 5th Floor San Francisco, CA 94103 and email to: claudia.guerra@sfgov.org	By email to: *warriors@sfgov.org*: Ms Tiffany Bohee OCII Executive Director c/o Mr. Brett Bollinger San Francisco Planning Department 1650 Mission Street, Suite 400 San Francisco, CA 94103

Re: Warriors Arena Project: Violation of Variance Requirement.

Dear Ms Bohee and Mr. Bollinger:

This office represents the Mission Bay Alliance ("Alliance"), an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project"). The Mission Bay Alliance objects to approval of this Project and certification of the Project SEIR.

I write today regarding the OCII's failure to require a variance or "variation" for this Project under section 305 of the Mission Bay South Redevelopment Plan ("Plan"). The November 2, 2015, letter from Susan Brandt-Hawley, my co-counsel for the Alliance, demonstrates this Project is not an allowable secondary use under the Plan. Thus, a variance is not available because, as shown by Brandt-Hawley, the Project "will change the land uses on this Plan." (Plan, § 305.) However, in the alternative, if the Project is an allowable secondary use under the Plan, then the OCII must process this Project application as a variance and make the findings required by Plan section 305 before Project approval. 1 [LC-PP-1]

Both California and San Francisco planning law provide a process for landowners to obtain a "variance" from the "uniformity" of zoning limits that, while appropriate for the zone district in general, would impose undue hardship due to unique characteristics of a specific parcel. Government Code section 65906 governs the grant of zoning variances by municipalities and prohibits local agencies from granting "special privileges" to individual landowners. Similarly, San

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Francisco Planning Code, section 305, subdivision (a), provides that a variance permit must be approved for any exception to the requirements of the Planning Code. Subdivision (c) thereof mirrors the requirements of state law, and requires a finding that "owing to such exceptional or extraordinary circumstances the literal enforcement of specified provisions of this Code would result in practical difficulty or unnecessary hardship ...."

Similarly, the Plan includes a variance provision that reflects the same substantive requirements as Government Code section 65906 and Planning Code section 305:

> The Agency may modify the land use controls in this Plan where, owing to unusual and special conditions, enforcement would result in undue hardships or would constitute an unreasonable limitation beyond the intent and purposes of these provisions. Upon written request for variation from the Plan's land use provisions from the owner of the property, which states fully the grounds of the application and the facts pertaining thereto, and upon its own further investigation, the Agency may, in its sole discretion, grant such variation from the requirements and limitations of this Plan. The Agency shall find and determine that the variation results in substantial compliance with the intent and purpose of this Plan, provided that in no instance will any variation be granted that will change the land uses on this Plan.

1 [LC-PP-1] cont.

(Plan, § 305.)

Because the Plan's variance provision imposes virtually identical requirements as Planning Code section 305, both apply. (Plan, §'s 101 ["Regardless of any future action by the City or the Agency, whether by ordinance, resolution, initiative or otherwise, the rules, regulations, and official policies applicable to and governing the overall design, construction, fees, use or other aspect of development of the Plan Area shall be (i) this Plan and the other applicable Plan Documents, (ii) to the extent not inconsistent therewith or not superseded by this Plan, the Existing City Regulations and (iii) any new or changed City Regulations permitted under this Plan"]; 304.9.C.(iv)).

Here, the Project creates at least sixteen inconsistencies with the Design for Development (D4D). The OCII now proposes to amend the D4D, the Owner's Participation Agreement (OPA), and other Plan documents to resolve these inconsistencies by, including but not limited to, raising maximum height limits from 90 to 135 feet, allowing a second 160+ foot tower, increasing bulk limits to accomodate the arena, and changing arena setbacks, street wall heights, view corridors, public rights of way, and parking standards. (See e.g., Draft SEIR, pp. 4-7 - 4-9, § 4.2.4; Proposed Resolution 2015, exhibit A; Memorandum to the OCII from Executive Director Tiffany Bohee for Items 5(a), 5(b), 5(c), 5(d) & 5(e) the November 3, 2015, CCII meeting agenda, pp. 4, 22.)

Even if the Project's land uses are allowable secondary uses, these amendments "modify the land use controls in this Plan" as provided in Plan section 305. But the Project Sponsor has made

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Commission on Community Investment and Infrastructure
Ms Tiffany Bohee
Mr. Brett Bollinger
Re: Warriors Arena Project DSEIR: Violation of Variance Requirement
November 2, 2015 [2 of 2]
Page 3

no showing that due to "unusual and special conditions, enforcement would result in undue hardships or would constitute an unreasonable limitation beyond the intent and purposes of these provisions." (Plan, § 305.)

"Variances are, in effect, constitutional safety valves to permit administrative adjustments when application of a general regulation would be confiscatory or produce unique injury." (Curtin's California Land Use and Planning Law, p. 55.) Variance requirements also implement the State Planning and Zoning Law's requirement of "uniformity" of zoning rules within zoning districts. (See Gov. Code, § 65852 ["All such [zoning] regulations shall be uniform for each class or kind of building or use of land throughout each zone, but the regulation in one type of zone may differ from those in other types of zones;" *Neighbors in Support of Appropriate Land Use v. Cnty. of Tuolumne* (2007) 157 Cal.App.4th 997, 1008 (*Neighbors*).) The State Planning and Zoning Law also requires vertical consistency between local agencies general plans, zoning ordinances, and land use permits. (Gov. Code, § 65860, subd. (c) ["County or city zoning ordinances shall be consistent with the general plan of the county or city... ."]; see *DeVita v. Cnty. of Napa* (1995) 9 Cal.4th 763, 772 ["A general plan is a 'constitution' for future development [citation omitted] located at the top of 'the hierarchy of local government law regulating land use'"].)

California courts have vigorously enforced the requirements for granting a variance, and have developed extensive jurisprudence to corral the many stratagems local agencies have used to avoid its requirements. (See e.g., *Topanga Association v. County of Los Angeles* (1974) 11 Cal.3d 506, 511-12 (*Topanga*); *Orinda Assn. v. Board of Supervisors* (1986) 182 Cal.App.3d 1145, 1166 (*Orinda Assn*) ["A zoning scheme, after all, is similar in some respects to a contract ... If the interest of these parties in preventing unjustified variance awards for neighboring land is not sufficiently protected, the consequence will be subversion of the critical reciprocity upon which zoning regulation rests..."].)

Variance findings must focus on a comparison of the subject property to other properties in the zone district with which the variance is intended to bring it into parity, and the benefits to the community or "public interest" associated with a zoning exception are irrelevant. (*Orinda Assn, supra*, at p. 1166.) By amending the Plan documents to accommodate this Project, the OCII would cast these requirements aside and grant a "special privilege" to this Project Sponsor.

In *Neighbors*, rather than adopt a rezone or grant a variance, the County created a special exception to the zoning ordinance for one landowner by including it in a development agreement adopted under the development agreement law. (*Neighbors, supra*, 157 Cal.App.4th at p. 1003.) In rejecting this stratagem, the Court in *Neighbors* noted that there are limits on the power to rezone: "'The foundations of zoning would be undermined, however, if local governments could grant favored treatment to some owners on a purely ad hoc basis ... [R]ezoning, even of the smallest parcels, still necessarily respects the principle of uniformity." (*Id.* at pp. 1009-10.)

1 [LC-PP-1] cont.

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A similar result occurred in *Trancas Prop. Owners Assn. v. City of Malibu* (2006) 138 Cal.App.4th 172 (*Trancas*). In *Trancas*, the court held an exemption from a city's zoning requirements accomplished by contract functionally resembled a variance, and held that "such departures from standard zoning by law require administrative proceedings, including public hearings ... followed by findings for which the instant [density] exemption might not qualify... Both the substantive qualifications and the procedural means for a variance discharge public interests. Circumvention of them by contract is impermissible." (Id. at p. 182.)

In sum, the OCII's proposed grant of zoning exceptions to this Project by way of amending the Plan documents rather than by variance violates the Plan, the variance requirements of the San Francisco Planning Code and state law, and the uniformity requirement of state law.

1 [LC-PP-1] cont.

Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

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November 2, 2015

Tiffany Bohee, OCII Executive Director
c/o Brett Bollinger, San Francisco Planning Department
via email warriors@sfgov.org

Subject: Warriors Event Center & Mixed Use Development
Inconsistency with Mission Bay South Redevelopment Plan
'Secondary Use' Classification

Dear Director Bohee and Mr. Bollinger:

The Mission Bay Alliance (the Alliance) contends that the Warriors' Event Center is unlawfully inconsistent with every use allowed by the Mission Bay South Redevelopment Plan (the Plan). Although the Alliance raised this issue in comments on the Draft Subsequent EIR (DSEIR), both the Responses to Comments in the Final SEIR and OCII's findings of project consistency remain materially inadequate.

The Plan designates uses allowed at a 'Commercial Industrial/Retail' site. The Alliance notes that while OCII now concedes that a sports arena is not within the scope of allowed 'principal uses' in that zoning, OCII contends that an arena is consistent with 'secondary uses.' As this letter will explain, all such secondary uses are similarly and demonstrably insufficient to permit the Warriors' sports arena.

1
[LC-PP-1]

Nighttime Entertainment. The Initial Study concluded, in error, that the DSEIR did not need to address land use issues — at all. It asserted that the entire Event Center, including the sports arena use, somehow met the secondary 'Nighttime Entertainment' use analyzed in the 1998 Plan EIR. Secondary uses were then generally referenced in the DSEIR (*e.g.*, pp. 3-8, 3-51, 4-5, 5.2-115), but there was no discussion of which category of secondary use would be allocated to the Event Center, inferring acceptance of the Nighttime Entertainment category.

The Plan describes Nighttime Entertainment in terms of small-scale local uses like dance halls, bars, nightclubs, discotheques, nightclubs, private clubs, and

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restaurants. (Plan, p. 50.) At the time of the 1998 EIR, several small neighborhood bars occasionally offered nighttime entertainment, consistent with the secondary use category. Such minor uses were compatible with the 3rd Street Corridor and the waterfront. Clearly, no mammoth regional entertainment venue was anticipated in Mission Bay South and no such use was considered in the 1998 Plan EIR.

And while professional basketball games are held at night, the Event Center also projects 31 annual events "related to conventions, conferences, civic events, corporate events and other gatherings," with an estimated attendance of between 9,000 and 18,500 patrons. "[T]he majority of events are expected to occur during day time hours." Such events are not 'Nighttime Entertainment.'

The Director's currently-proposed findings that the sports arena is 'Nighttime Entertainment' contemplated as a secondary use in the Plan are unsupported. The findings fail to match the scope and impacts of a professional sports venue with the analysis or description of uses in the Plan or in the 1998 EIR. The findings are fatally conclusory; that somehow a professional sports venue would be "similar" to a nightclub or bar use in the 'Nighttime Entertainment' category "because" it will serve alcohol, provide amplified live entertainment, and provide a venue for evening gatherings. The findings fail to address the core inconsistency of a regional sports arena with the intent of the adopted Plan and the Design for Development, which focus on commercial entertainment uses in Mission Bay North to complement the Giants' ballpark.

1
[LC-PP-1]
cont.

OCII's reliance on the negative; to wit, that the 'Nighttime Entertainment' secondary use has no specific size limitations, is not enough. The Plan provides for the continued development of Mission Bay South as a walkable urban community intended to facilitate world-class medical and biotechnology development. The Event Center project violates the Plan Area Map carefully designed in classic, walkable Vara Blocks. (Plan, Attachment 2, p. 40.) Neither the Plan nor the Design for Development contemplate any uses comparable in scope or impact to the Event Center as 'Nighttime Entertainment.'

That being said, in fact in the Final SEIR and as reflected in the proposed Plan consistency findings, OCII now implicitly agrees with the Alliance that the 'Nighttime Entertainment' secondary use standing alone does not encompass a sports arena. Now, OCII additionally relies on the Plan's alternate 'secondary uses.' No such uses are consistent with the Plan, as explained below.

Recreation Building. One of the Plan's secondary use categories is for an undefined 'Recreation building.' (Plan, p. 15.) The Plan describes 'Outdoor Recreation' as "an area, not within a building, which is provided *for the recreational uses of patrons* of a commercial establishment." (Plan, p. 50, italics added.)

OCII's proposed findings as to the 'Recreation building' category stretch the regional sports arena use not only beyond what was contemplated by the Plan or studied in the 1998 EIR, but beyond logic. To state the obvious: there is a difference between 'recreation' and 'entertainment.' Both involve enjoyment and leisure, and may involve ancillary eating and drinking, and the Alliance has no quarrel with the Director's reference to recreation as "something people do to relax or have fun; activities done for enjoyment." (OCII Proposed Secondary Use Determination, p. 6.) But myriad dictionary definitions confirm and it cannot readily be denied that 'recreation' is commonly understood to involve one's personal physical activities while 'entertainment' refers to events or performances designed to entertain others.

None of the Plan's various references to 'entertainment' include athletic activities normally considered 'recreation:' Adult Entertainment [bookstore or theater], Amusement Enterprise [video games], Bar [drinking and theater], Theater [movies and performance]. (Plan, Attachment 5, pp. 44-51.) Consistently, the 1998 EIR's discussion of 'recreational' land uses focused in turn on open space, bicycles, parks, and water-based activities. (Mission Bay EIR, Volume IIB, pp. V.M. 15-28.).

In context, the Plan's reference to 'Recreation building' as a secondary use contemplates participatory recreational uses like the 'recreation facilities' referenced in the 1998 Plan EIR for the existing golf driving range and in-line hockey rink, with the expressed expectation that the size of recreational 'facilities' would decrease as redevelopment of the Plan area progressed. (OCII Proposed Secondary Use Determination, p. 6.)

Reliance on the secondary use of 'Recreation building' is unsupported.

Public Structure or Use of a Nonindustrial Character. As presented in the Plan, the category of "other secondary uses" labeled 'Public structure or use of a nonindustrial character' references *one* secondary use, not *two*. (Plan, p. 13.) The use is required to be public, and either a structure *or* a use.

1 [LC-PP-1] cont.

O-MBA19B3

Warriors Event Center
Secondary Use Inconsistency
November 2, 2015

The interpretation urged by the Director is, again, strained beyond the plain words of the Plan. 'Public' is not defined in the Plan and so its common meaning is assumed. But as proposed in the consistency findings, OCII interprets a 'public' use as simply requiring that the public be somehow 'served.' That would encompass every kind of principal and secondary use listed in the Plan, from child care to animal care to hotel, *etc.*, and renders the category meaningless: *i.e.*, "Any use is ok."

Instead, a public structure or use is commonly understood to be under the control and management of a public agency for the benefit of its constituency — such as the University of California[1] or the City of San Francisco. The Plan provides a description of a range of anticipated public improvements in Attachment 4. This list includes both public buildings and public uses. None of the public improvements listed in Attachment 4 include anything like a private professional sports arena.

The Event Center is a private project and is not within the scope of the secondary use category for a public structure or use of a nonindustrial character.

Director's Findings. As explained, the sports arena uses that are the impetus for the Event Center project are not allowed by the Plan's allowed principal or secondary uses. An allowed use is prerequisite for a finding of Plan consistency. The Alliance will not belabor the myriad other inconsistencies with the Plan's objectives, design, incompatibility with UCSF, and creation of significant environmental impacts, as those have been described in the DSEIR comments and throughout the administrative record, but hereby objects to their insufficiencies and lack of supporting substantial evidence for the Plan consistency finding.

Consideration of the Event Center project must be preceded by amendment of the Plan to be consistent with the delineated principal and secondary uses and the adopted Plan Area Map of the Mission Bay South Redevelopment Plan.

1 [LC-PP-1] cont.

Thank you.

Sincerely yours,

Susan Brandt-Hawley
Attorney for Mission Bay Alliance

[1] See attached 2005 Resolution and Secondary Use finding regarding the "UCSF hospital" as a "public structure or use of a non-industrial character" for "a public body specifically created by the California Constitution."

RESOLUTION NO. 176-2005

Adopted November 1, 2005

APPROVING A MEMORANDUM OF UNDERSTANDING WITH THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, A CALIFORNIA PUBLIC CORPORATION, AND ACKNOWLEDGING THE EXECUTIVE DIRECTOR'S FINDINGS OF CONSISTENCY WITH THE MISSION BAY SOUTH REDEVELOPMENT PLAN, FOR THE EXPANSION OF UCSF FACILITIES IN THE MISSION BAY SOUTH REDEVELOPMENT PROJECT AREA; MISSION BAY SOUTH REDEVELOPMENT PROJECT AREA

BASIS FOR RESOLUTION

1. On September 17, 1998, by Resolution No. 193-98, the Redevelopment Agency of the City and County of San Francisco's (the "Agency") Commission (the "Agency Commission") conditionally approved the Mission Bay South Owner Participation Agreement (the "South OPA") and related documents between Catellus Development Corporation (the "Owner") and the Agency for development in the Mission Bay South Redevelopment Project Area (the "Project Area").

2. On November 2, 1998, the Board of Supervisors of the City and County of San Francisco (the "Board") by Ordinance No. 335-98 approved and adopted the Redevelopment Plan for the Mission Bay South Redevelopment Project Area (the "Plan"). The Board's adoption of the Plan satisfied the conditions to the effectiveness of Agency Resolution No. 193-98.

3. On November 16, 1998, the Agency entered into the South OPA with the Owner. The South OPA sets forth phasing principles that govern the development of property in the Project Area. Those principles include the Owner's obligations to deliver to the Agency affordable housing sites as market rate housing is built in the Project Area. They also include the Owner's commitments to construct public open space and other public infrastructure adjacent to – or otherwise triggered by – development on any of the private parcels governed by the South OPA.

4. Under the South OPA and the related Mission Bay South Tax Increment Allocation Pledge Agreement (the "Pledge Agreement"), dated as of November 16, 1998, between the Agency and the City and County of San Francisco (the "City"), approximately 20% of the total property tax increment (plus certain excess tax increment) generated by development in the Project Area is contractually dedicated to develop affordable housing units on parcels that the Owner will contribute to the Agency, to achieve the affordable housing program contemplated by the Plan.

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5. The South OPA requires the Owner to construct the public infrastructure directly related to each of the major phases in accordance with the incremental build-out of each project. Under the South OPA and the Pledge Agreement, the Agency is obligated to fund, repay or reimburse the Owner, subject to certain conditions, for the direct and indirect costs of constructing the infrastructure. The Agency has established a Community Facilities District ("CFD") for infrastructure in the Project Area. The Agency has also established a separate CFD to pay the costs of maintaining the public open space in the Project Area.

6. The South OPA provides that as a condition to any transfer of property in the Project Area, the Owner must obtain the agreement of the transferee to assume all of Owner's obligations under the South OPA with respect to the transferred parcels.

7. The Project Area includes an approximately 43-acre biomedical research and educational campus site (the "Campus Site") for the University of California, San Francisco ("UCSF"). UCSF has already invested about $675 million on projects completed or underway on the Campus Site within the Plan Area and has plans to invest another $225 million on projects in design.

8. The Regents of the University of California, a California public corporation ("The Regents") wishes to lease or acquire, and the Owner wishes to transfer Parcels 36, 37, 38 and 39 in the Project Area, comprising approximately 9.65 acres of land for the possible expansion of UCSF in Mission Bay (the "Expansion Parcels"). These parcels are not part of the 43 acres that the Plan originally designated as the Campus Site.

9. On November 30, 2004, The Regents released proposed amendments in draft form to its long range development plan, as LRDP Amendment #2. Those amendments contemplate an expansion of UCSF facilities onto the Expansion Parcels, including the possibility of developing by 2012 new integrated specialty Children's, Women's and Cancer hospitals containing about 210 beds, together with ambulatory and research facilities. In March 2005, The Regents approved LRDP Amendment #2 (the "Project") and certified a related final environmental impact report (the "LRDP #2 FEIR") which analyzed the environmental effects of the proposed UCSF development on the Expansion Parcels. Copies of the LRDP #2 FEIR are on file with the Agency Secretary.

10. The Owner and The Regents have entered into an Option Agreement and Grant of Option to Lease, dated as of January 1, 2005 (the "Option to Lease"), which provides that upon the satisfaction of certain conditions and the exercise by The Regents of its option (i) Catellus, as landlord, and The Regents, as tenant, will enter into a long-term ground lease of the Expansion Parcels (the "Lease") and (ii) the Owner and The Regents will at the same time enter into an Option Agreement and Grant of Option to Purchase (the

"Option to Purchase") under which The Regents will have an option to purchase the Expansion Parcels.

11. If The Regents exercises the Option to Lease within the option term, the Lease would allow for The Regents to develop up to 1,020,000 leasable square feet on the Expansion Parcels, provided that (a) any development of those parcels is the subject of further environmental review under the California Environmental Quality Act ("CEQA"), and (b) the Owner does not lose any of its entitled development potential for the balance of its land nor lose any of its other rights and privileges under the South OPA.

12. Pursuant to Section 302 of the Plan, the development of the contemplated UCSF facilities on the Expansion Parcels is permitted as a subset of "Other Uses" as a secondary use. Such secondary uses are permitted provided that such use generally conforms with redevelopment objectives and planning and design controls established pursuant to the Plan and based on certain findings of consistency by the Agency's Executive Director (the "Consistency Findings"). The Executive Director has made the Consistency Findings, and such findings are hereby incorporated herein by this reference as if fully set forth.

13. The City must make substantial improvements to San Francisco General Hospital ("SFGH") by 2013 and is evaluating a number of alternatives, including rebuilding on site and co-locating a new SFGH with new UCSF medical facilities in Mission Bay.

14. As a State agency, The Regents is exempt under the State Constitution from local land use regulation and property taxes to the extent it uses property exclusively in furtherance of its educational mission.

15. The Agency, City and The Regents negotiated a non-binding term sheet to guide the preparation of final transactional and related documents, such as a Disposition and Development Agreement ("DDA") for The Regents to acquire property for, and to construct and subsidize, affordable housing for low-income workers of UCSF, which DDA is being considered by the Agency Commission concurrently with this Resolution, pursuant to Resolution No. 160-2005, and provided terms for a Memorandum of Understanding regarding design standards and cooperation on the development of the Expansion Parcels (the "MOU"). The Agency Commission approved the non-binding term sheet on May 17, 2005 by Resolution No. 81-2005.

16. The proposed MOU addresses, among other things: the potential loss of tax increment from the transfer of the Expansion Parcels to a tax-exempt entity; the obligations to build infrastructure associated with development on the Expansion Parcels; the potential assistance of UCSF in the planning of the co-location, if any, of SFGH with the new UCSF facilities; the standards for design review for construction on the Expansion Parcels; local hiring and

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equal opportunity for jobs associated with the development on the Expansion Parcels; and other matters designed to provide the Agency and City with significant public benefits.

17. Agency staff is recommending that the Agency Commission approve the MOU, and the associated Consistency Findings.

18. The Agency Commission has reviewed and considered the information contained in the LRDP #2 FEIR.

19. The Agency Commission hereby finds that the MOU is an action in furtherance of the implementation of the Project for purposes of compliance with CEQA.

20. By Resolution 175-2005, the Agency Commission adopted environmental findings related to the LRDP #2 FEIR, pursuant to CEQA and the CEQA Guidelines (the "Findings"). Such Findings are made pursuant to the Agency's role as the responsible agency under CEQA for the Project. The Findings are hereby incorporated herein by this reference as if fully set forth.

RESOLUTION

ACCORDINGLY, IT IS RESOLVED by the Redevelopment Agency of the City and County of San Francisco that the findings of consistency with the Mission Bay South Redevelopment Plan are approved and the Executive Director is authorized to execute the "Expansion of UCSF Facilities in Mission Bay South Redevelopment Project Area (Blocks 36-39) Memorandum of Understanding", substantially in the form lodged with the Agency General Counsel; Mission Bay South Redevelopment Project Area.

APPROVED AS TO FORM:

James B. Morales
Agency General Counsel

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MEMORANDUM

126-03405-001
October 12, 2005

To: Marcia Rosen
Executive Director

From: Amy Neches
Senior Project Manager

Re: Secondary Use Finding Recommendation for UCSF Hospital in Mission Bay South Redevelopment Area

Pursuant to a Term Sheet dated as of August 1, 2005 between the City, the Agency and The Regents of the University of California, which was endorsed by the Commission on May 17, 2005 (Resolution No. 81-2005), the Agency is considering agreements, including a Memorandum of Understanding ("MOU"), under which the University of California at San Francisco ("UCSF") may develop a hospital in the Mission Bay South Redevelopment Area ("Redevelopment Area").

The UCSF hospital would be located on Blocks 36-39 within the Commercial Industrial land use district of the Redevelopment Area, as described in the Mission Bay South Redevelopment Plan (the "Plan"). The UCSF hospital development may also include all or portions of Block X3 within the Commercial Industrial/Retail land use district. In both of these land use districts "public structure or use of a non-industrial character" is permitted as a subset of "Other Uses" as a secondary use.

The University of California, of which UCSF is a component, is a public body specifically created by the California Constitution. A hospital or medical center is described in §790.44 of the San Francisco Planning Code as a "public or private institutional use which provides medical facilities for inpatient care, medical offices, clinics, and laboratories." The proposed UCSF hospital development will include these components. The hospital will not including manufacturing, warehousing, or distribution of goods, and can reasonably be considered a "non-industrial use." This interpretation is supported by the San Francisco Planning Code, under which hospitals are permitted as a conditional use in all C districts and NC-3 districts.

Section 302 of the Plan provides as follows:

> "Secondary uses shall be permitted in a particular land use district…provided that such use generally conforms with redevelopment objectives and planning and design controls established pursuant to this Plan and is determined by the Executive Director to make a positive contribution to the character of the Plan Area, based on

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> a finding of consistency with the following criteria: the secondary use, at the size and intensity contemplated and at the proposed location, will provide a development that is necessary or desirable for, and compatible with, the neighborhood or the community."

Staff believes that the UCSF hospital is appropriate as a secondary use, based on the following:

1) The proposed hospital will be located on approximately 10 to 14 acres of land adjacent to the Mission Bay UCSF research campus that have been determined to be blighted and are affected by environmental contamination. UCSF plans close integration of its basic academic research activities with the teaching, research and patient care activities within the planned hospital. The plan for development of the UCSF hospital generally conforms to the Redevelopment Project Objectives as described in §103 of the Plan, particularly with objective A of eliminating blight and correcting environmental deficiencies, and objective B of retaining and promoting UCSF's research and academic activities within the City and County of San Francisco.

2) Under the MOU, the UCSF hospital development will generally conform to the planning and design controls established pursuant to the Plan, including the street layout, setbacks, and streetscape plan. To accommodate the needs of the hospital, the MOU will include specific adjustments to the existing height and bulk standards of the Commercial Industrial and Commercial Industrial/Retail land use zones of the Mission Bay South Design for Development. These changes will lower the maximum height of a hospital to 105 feet, compared to the existing 160 foot limit, but would allow for somewhat greater bulk in the mid-rise area. These changes have been studied and presented to the public at two well-noticed public meetings. In staff's opinion, the proposed adjustments represent reasonable variation from the existing standards, which will have little if any negative effect on the surrounding community in the context of overall Mission Bay development.

3) The hospital will contain no more development, as calculated under the Plan in leasable square feet, than would have been permitted under the principal uses permitted in these land use districts, and there will be no net increase in the overall size of development within the Redevelopment Area. The hospital will be developed on parcels that would otherwise likely have been developed with commercial office or life science/biotechnology uses. These uses would have been constructed in buildings of reasonably similar size and appearance as the proposed hospital use.

4) The proposed hospital will allow UCSF to continue to provide needed tertiary health care to the residents of San Francisco in a modern seismically safe hospital, and will assist UCSF in furthering its research and academic mission.

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Based on these factors, staff believes that it is appropriate to make the finding of consistency cited above, and recommends that the Executive Director permit the development of the UCSF hospital as a secondary use in Mission Bay, subject to the approval of the MOU by the Commission.

Approved on October 12, 2005:

Marcia Rosen

Marcia Rosen
Executive Director

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November 2, 2015

Ms Tiffany Bohee
OCII Executive Director
c/o Mr. Brett Bollinger
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103
warriors@sfgov.org

Re: Comments on Final Subsequent Environmental Impact Report for the Warriors Arena Project Re Air Quality, Transportation, Hydrology, Water Quality, Biological, and Noise Impacts

Dear Ms Bohee and Mr. Bollinger:

This office represents the Mission Bay Alliance ("Alliance"), an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project"). The Mission Bay Alliance objects to approval of this Project and certification of the Final Subsequent Environmental Impact Report (FSEIR).

The Alliance incorporates by reference, as comments on the FSEIR and Responses to Comments (RTC), the contents of Exhibits A through S identified in the list of exhibits at the end of this letter.

General Comment 1. Many of the responses to comments reflect a basic misunderstanding of the relationship, under CEQA, between determination of significance, the feasibility and effectiveness of mitigation measures, and whether social or economic considerations outweigh environmental harm. For projects for which an EIR has been prepared, both the EIR and the mandatory findings required by CEQA section 21081, the analysis starts with whether an impact is significant. A finding of significance triggers the obligation to identify and adopt feasible mitigation measures that are effective in substantially reducing the significant impact. Once all feasible and effective mitigation measures have been identified and adopted, if the impact remains significant, the agency may approve the project if it finds that social or economic considerations outweigh environmental harm. 1 [LC-ERP-1]

Each of these steps in the analysis is distinct. Here, many of the RTC's responses to comments conflate and confuse these steps, and thereby undermine the integrity of the analysis. One

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example discussed below is Response NOI-2a regarding construction noise thresholds.

1 [LC-ERP-1] cont.

General Comment 2. The October 23, 2015, notice of publication of the Response to Comments informed the public they would have no further opportunity to comment on the FSEIR/RTC. But the OCII hearing agenda for November 3, 2015 published on October 29, 2015, suggests that public comment on the SFEIR/RTC will be heard at the hearing. The October 23, 2015, notice of publication is inconsistent with CEQA section 21177(a), which contemplates public comment on EIRs up to the end of the hearing at which the project is approved. Therefore, the October 23, 2015, notice of publication has frustrated the ability of the public to comment. The OCII should remedy this misstep by continuing its November 3, 2015, hearing on this Project and re-noticing the hearing with full disclosure that the public may comment on the FSEIR/RTC.

2 [LC-ERP-4]

I. Air Quality Impacts.

The Alliance's comments on the Responses to Comments related to Air Quality issues are set forth in the November 2, 2015, letter from John Farrow attached as Exhibits A and B, the November 2, 2015, letter from Greg Gilbert attached as Exhibit C, and in this letter.

A. The Response to Comment AQ-6a is Inadequate.

Mitigation Measure M-AQ-1 requires the use of Tier 2 or better engines for all off-road equipment. The "step-downs" from Tier 4 to Tier 3 to Tier 2, or from Tier 3 to Tier 2, are allowed when Tier 4 (or Tier 3) is not "commercially available." But step-downs from Tier 2 are not available under any scenario.

Mr. Gilbert's July 19, 2015, letter commented that this mitigation is not feasible because there is not enough Tier 2 or better equipment available for the Project Sponsor to use. The response to this comment states that "in 2014 approximately 59 percent of all off-road equipment in the state were operating with Tier 2 engines or better" and, therefore, it appears the measure is feasible. (RTC, p. 13.13-53.)

But the response does not specify whether the diesel off-road equipment sampled included equipment in private or government fleets that are not potentially available to the Project Sponsor to use, or alternatively, whether it consisted only of equipment that is potentially available to the Project Sponsor to use. If the former is true, then the 59% sampling result is meaningless, because the relevant population to sample is equipment that is potentially available to the Project Sponsor to use. A review of Figure 4 in the document cited in footnote 20 on RTC page 13.13-53 appears to indicate that the population of equipment sampled is all equipment, including equipment that is not potentially available to the Project Sponsor to use. Therefore, the 59% sampling result appears to be meaningless.

3 [LC-AQ-2]

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Moreover, even if the population of equipment sampled is equipment that is potentially available for the Project Sponsor to use, the idea that the Project Sponsor will be able to acquire 100% of its equipment at Tier 2 or better when only 59% of the potentially available equipment is Tier 2 or higher is illogical. It is more plausible that the Project Sponsor will be able to acquire only about 59% of its equipment at Tier 2 or better.

As stated in Mr. Gilbert's November 2, 2015, report attached as Exhibit C:

> Further, the statistic provided by the Lead Agency does not say that 59% of all construction equipment vehicles in CA will meet Tier 2 or better status – rather, it says that all **offroad** vehicles do (as of 2014). All offroad vehicles are not all construction vehicles; in fact, construction vehicles are a small subset of all offroad vehicles. Moreover, the rate of compliance for construction vehicles, particularly large, expensive, long-lived ones (scrapers, excavators, pile drivers, etc.) will be far lower than the average for all offroad vehicles that include such non-construction equipment as ground support vehicles at airports, agricultural forklifts, and myriad other offroad, nonconstruction equipment types. Because the statistic represents all offroad vehicles in CA and not construction vehicles, it cannot be used to even roughly determine the proportion of construction vehicles supposedly available to the project with Tier 2 engines, VDECs, and 40% NOx control; hence, the statistic is irrelevant to the Events Center project environmental review and does nothing to refute our concerns expressed clearly at the SDEIR review stage.

(Exhibit C, p. 11.)

3 [LC-AQ-2] cont.

B. The Response to Comment AQ-6e is Inadequate.

Mr Gilbert's July 19, 2015, letter commented that:

> Further, M-AQ-1 specifies numerous sub-part requirements (A 1 through 5) to be included in the Construction Emissions Mitigation Plan, and in each case compliance with those sub-parts is left to the "project sponsor". So, too, is compliance with the Measure's additional duties required under M-AQ-1 items B and C. This is not appropriate when considering the extent, complexity, and costs that will be incurred for effective mitigation measure compliance across the 26-month construction period; permitting the project sponsor to create, implement, report, and determine compliance with the Measure is akin to having the fox guard the henhouse and must not be allowed. As written, the measure is not enforceable due to the subjective, undefined nature of "Air Quality Specialist" who will approve the project sponsor's Construction Emissions Mitigation Plan. Further, it is unacceptable that the Measure will permit the project sponsor to determine compliance with each of the measure's

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> components, record and report information signifying compliance, and then, under part C certify their own compliance with the Plan and its various requirements. We have inspected construction project sites, under air district contract, to determine compliance with air district-imposed construction equipment mitigations and have found uniformly poor compliance; to exemplify, at one residential subdivision project in south Sacramento County we determined that only one offroad construction vehicle out of nearly twenty were actually compliant with the mitigation requirements that had been imposed on the project by the Lead Agency. This is because there has traditionally been very little, if any, post- EIR follow-through to verify mitigation compliance by Lead Agencies or by the local air district after the CEQA project has been approved for development and construction has started. Knowing this, construction and development firms commonly let air quality mitigations go unmet, although records purporting to show compliance can be easily formulated and submitted post hoc in order to fulfill a paper requirement. Without an independent, qualified 3rd party contractor onsite each day to track, verify, and record emissions- and activity-related information on construction vehicles used at the project site to ensure the EIR's mitigations are implemented effectively, the project is very unlikely to produce more than a token of the emission reductions claimed in the DSEIR.

3 [LC-AQ-2] cont.

The Responses to Comments (RTC) codes this comment as "AQ-6e." (Volume 5, p. 13.13-60.) The response to comment AQ-6e states:

> The City and OCII have successfully monitored implementation of emissions minimization requirements on numerous construction projects over the past several years. Examples of past and ongoing projects with CEMP emissions minimization requirements include Candlestick Point-Hunters Point Shipyard Phase II Development Project, which requires staged increases in the percentage of Tier 4 equipment; the Seismic Upgrade of BDPL Nos. 3 & 4 at Hayward Fault Project, which had one year of tiered engine requirements for on-road spoils hauling trucks and off-road construction equipment; and the Pacific Rod and Gun Club Upland Soil Remedial Action Project, which also had tiered engine requirements for off-road construction equipment.

(Volume 5, p. 13.13-60.)

The RTC's assertion is made without any evidentiary support. Well before the Response to Comments issued, the Alliance attempted to discover if the City or the OCII have any evidence to support the DSEIR's assumption that the Project's compliance with adopted air quality mitigation measures will be effectively monitored. In this regard, on August 13, 2015, I submitted a request to the City and OCII for:

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> All records relating to monitoring or enforcement of compliance with mitigation measures adopted to reduce potentially significant air quality impacts of development projects approved by the City, the Redevelopment Agency of the City and County of San Francisco, or the Successor Agency to the Redevelopment Agency of the City and County of San Francisco, including any records reflecting audits of such compliance.

(See Exhibit D attached to this letter). In my email to the OCII and City dated September 30, 2015, I provided further definition to this request, stating:

> With respect to all construction projects in these areas for which the EIR identified significant air quality impacts from construction activities that could not be entirely avoided, the City, Redevelopment Agency, or the Successor Agency would have adopted mitigation measures to reduce the projects' significant air quality impacts and would have adopted a Mitigation Monitoring and Reporting Plan ("MMRP"). These MMRPs should have resulted in the generation of reports documenting the project's compliance, or lack thereof, with these adopted air quality impact mitigation measures. I want to obtain these reports."

3 [LC-AQ-2] cont.

(See my email exchanges between the OCII and City dated September 11 through September 30 of 2015, attached as Exhibit E.)

Despite these requests, neither OCII nor the City have produced a single record showing they have either themselves conducted monitoring of CEQA required air quality mitigation measures or have taken steps to ensure that Project Sponsors tasked with self-monitoring their own compliance have faithfully done so. The agencies' failure to produce any such records leads inescapably to the conclusion that Mr. Gilbert's observation applies to the OCII and the City, and no such records exist because no such monitoring has been done.

Once again, I hereby request that the OCII and the City produce any such records, and if such records exist, continue the OCII's hearing regarding certification of the SEIR until a date after the records are produced. If such records exist, certification of the SEIR before producing the records would deny my client a fair trial under subdivision (b) of section 1094.5 of the Code of Civil Procedure.

C. The Response to Comment AQ-7 is Inadequate.

Comment AQ-7 is that the per ton charge for emission offsets is too low to achieve complete offset of the Project's emissions. The response is cagey on this point, but it appears the BAAQMD agreed with the comment, because the response states:

4 [LC-AQ-1]

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> SF Planning has been in communication with BAAQMD with regard to its suggestion that a higher fee may be warranted to offset project emissions to a less than significant level and found that BAAQMD could not establish that an increased rate beyond that of the Carl Moyer Program plus a five percent administrative fee could meet the "rough proportionality" standard required under CEQA.

4 [LC-AQ-1] cont.

(RTC, p. 13.13-67.) The RTC's rationale for contending that a higher offset fee would not meet the "rough proportionality" standard is that offsets fees in other areas of the state are not higher than the offset fee proposed in the DSEIR. This is an error of law. The "rough proportionality" requirement requires a comparison of the cost of the mitigation to the degree of severity of the impact. The fee charged in other areas of the state are irrelevant to "rough proportionality."

D. Changes to the Project Since Publication of the DSEIR Require Recirculation of a Revised DSEIR Due to New and More Severe Significant Impacts.

Under CEQA, if the project changes after publication of the Draft EIR, and these changes create a new significant impact not identified in the Draft EIR, or a substantial increase in severity of a significant impact that was identified in the Draft EIR, the lead agency must recirculate the draft EIR for public comment. (CEQA section 21092.1.)

Here, the RTC describes a number of "construction refinements", including using dewatering generators, using a soil treatment pug mill, and removing rapid impact compaction from the construction plan. With respect to the air quality impacts of these "construction refinements" the RTC states:

> The addition of the construction refinements would not substantially increase (approximately 2 percent for ROG and 4 percent for NOx) the average daily construction-related emissions disclosed in the Draft SEIR. This would not result in a substantial increase in the severity of the previously identified significant and unavoidable impact, and the same mitigation measures would apply requiring the project sponsor to minimize construction emissions.

5 [LC-AQ-8]

(RTC, p 12-22.)

The RTC also describes a new variant, the Muni UCSF/Mission Bay Station Variant, and discloses that:

> The Muni UCSF/Mission Bay Station Platform Variant would not substantially increase (approximately 2 percent for ROG and 5 percent for NOx) the average daily emissions disclosed in the Draft SEIR for the proposed project (see Table 5.4-7, page 5.4-31). Furthermore, Mitigation Measure M-AQ-1 (Construction Emissions

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> Minimization) would also apply to the variant. While the estimated construction emissions under the variant shown in Table 12-2 are slightly higher than those identified for the proposed project in the Draft SEIR, this impact is not substantially more severe than the previously identified significant and unavoidable impact.

(RTC, p 12-22.)

There are several problems with these assertions. First, the RTC does explain whether construction refinement caused increases of 2 and 4 percent for ROG and NOx, respectively, are included within or additive to the Platform Variant caused increases of 2 and 5 percent for ROG and NOx. Without this information, the public does not know what additional quantum of ozone pollution the RTC deems insubstantial.

Assuming for the moment that the construction refinement caused increases are included within or the Platform Variant caused increases, the RTC offers no rationale why the 2 and 5 percent increases are not considered a "substantial" increase in the severity of the previously identified significant effect that Project construction will have on ozone precursor pollution. The RTC authors apparently believe these number speak for themselves. They do not. In fact, reliance on these appears to reflect a silent assumption that these increases above the previously identified quantities of emissions for these pollutants is "de minimis." It must be remembered, however, that these increases are not above a previously identified less-than-significant quantity of emissions; the previously identified quantities were significant!

5 [LC-AQ-8] cont.

The RTC thus commits the exact errors of law rejected by the Court of Appeal in *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98 ("*CBE*"), i.e., using a "de minimis" rationale or any type of simple numerical ratio of the incremental impact compared to the pre-existing impact. "[T]he relevant question... is not how the effect of the project at issue compares to the preexisting cumulative effect, but whether 'any additional amount' of effect should be considered significant in the context of the existing cumulative effect. [footnote omitted] In the end, the greater the existing environmental problems are, the lower the threshold should be for treating a project's contribution to cumulative impacts as significant." (Id. At p. 120; see also *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 720-721.)

These increases should be considered substantial and the SEIR recirculated for public comment. Instead, the October 23, 2015, notice of publication of the Response to Comments informed the public they would have no opportunity to comment on the environmental effects of these changes in the Project.

II. Transportation Impacts.

The Alliance's comments on the Responses to Comments related to Transportation issues

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are set forth in the November 2, 2015, letter from Dan Smith attached as Exhibit F, and the November 2, 2015, letter from Larry Wymer attached as Exhibit G.

III. Water Quality Impacts, Water Quality Related Utility Impacts, and Biological Impacts.

The Alliance's comments on the Responses to Comments related to Air Quality issues are set forth in the November 2, 2015, letter from Matt Hageman attached as Exhibit H; the November 2, 2015, letter from Erik Ringelberg and Kurt Balasek attached as Exhibit I; the November 2, 2015, letter from Erik Ringelberg attached as Exhibit J; the July 16, 2015 Technical Memorandum Erik Ringelberg and Kevin Grove attached as Exhibit K; and the October 29, 2015, Draft Waters and Wetland Delineation Report Proposed Mission Bay Development, Blocks 29-32 San Francisco, California, by Erik Ringelberg and Kevin Grove of BSK Associates attached as Exhibit L.

A. The Response to Comment UTIL-3 is Inadequate.

The response to comment UTIL-3 states:

> Impact C-UT-2 explains that the project, in combination with past, present, and foreseeable future development in the drainage area of the Mariposa Pump Station, would require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. As the owner and operator of the combined sewer system, the SFPUC is responsible for design and construction of the needed improvements to the wastewater facilities in the Mariposa sub-basin. The SFPUC has not identified the specific improvements that would be required to accommodate wastewater flows from the reasonably foreseeable projects and site-specific analysis cannot be performed until they are identified by the SFPUC. (SEIR, p. 5.7-15.) For this reason, site-specific environmental review for the future improvements cannot be included in the SEIR.
>
> Although it is not possible to analyze the impacts of construction of the permanent pump station improvements in greater detail than provided in the SEIR because the SFPUC has not identified specific improvements required, Impact C-UT-2 discloses the type of environmental impacts that would be expected from construction of new wastewater treatment facilities or expansion of existing facilities and the likelihood that such impacts will occur. This discussion satisfies CEQA's requirements for cumulative impacts analyses. (CEQA Guidelines, § 15130, subd. (b); see also Association of Irritated Residents v. County of Madera, supra, 107 Cal.App.4th at p. 1403 [cumulative impacts analysis satisfies CEQA when it "sets forth the possible cumulative impacts . . . and then analyzes the likelihood of the actual occurrence of such impacts"].)

6
[LC-UTIL-1]

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> Any future permanent improvements to address cumulative wastewater impacts are not part of the project and are not a reasonably foreseeable consequence of the project itself. (SEIR, pp. 5.7-11 to 5.7-13 [the existing wastewater treatment facilities have sufficient capacity for the proposed project by itself].) Rather, as explained in Impact C-UT-2, the improvements would be necessary only as a result of the combined demand on the wastewater system from the project in combination with other future cumulative development projects in the drainage area of the Mariposa Pump Station. Future improvements in the SFPUC's wastewater system are beyond the project sponsor's control.

(FSEIR, Vol. 5, pp. 13.17-11.)

This response essentially says that the Project is "first come, first served" for purposes of using up remaining sewer system capacity in the Mariposa sub-basin. But the assertion that the cumulative future projects listed in the referenced report by Hydroconsult Engineers (i.e., Blocks 25b, 33-34, 40 and Hospital Phase 2),[1] will be operational further in the future than the Project is unsupported. In fact, these cumulative future projects are not even listed in the cumulative future projects list on page 5.1-8 - 10. As a result, the SEIR's assertions are unsupported and untestable.

The response's assertion that "Future improvements in the SFPUC's wastewater system are beyond the project sponsor's control" is also unsupported; in fact, it is contradicted by overwhelming evidence. Where it is advantageous to the project, the SEIR assumes the City will do things over which the project sponsor has no control to support the project, e.g., comply with its NPDES permit, provide transportation infrastructure to handle the crowds, etc. Indeed, the City is named as a responsible party or is directly involved in dozens of mitigation measures identified in the proposed Mitigation Monitoring and Reporting Program.[2] But here, the SEIR takes an inconsistent position, disclaiming any Project Sponsor control over a different matter within the City's control, i.e., expansion of the sewer system, apparently for no reason other than it is advantageous to the project

6
[LC-UTIL-1]
cont.

[1]Hydroconsult Engineers, Inc. 2015. Combined Sewer Impact Analysis, Golden State Warriors Arena EIR. February 25, referenced on RTC, p. 13.17-15, n 8.

[2]One example is Mitigation Measure M-TR-2b: Additional Strategies to Reduce Transportation Impacts: "The project sponsor shall work with the City to pursue and implement commercially reasonable, if feasible, additional strategies (i.e., in addition to those included in the project TMP) to reduce transportation impacts. In addition, the City shall pursue and implement, if feasible, additional strategies to that could be implemented by the City or other public agency (e.g., Caltrans)."

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to do so.[3]

6 [LC-UTIL-1] cont.

B. The Responses to Comments Hyd-3 - Hyd-6 are Inadequate.

My July 24, 2015 comment letter regarding hydrology, water quality and biological impacts observed that the DSEIR's heavy reliance on City compliance with its NPDES permit to ensure the Project's combined stormwater and sewage impacts are less than significant is an unsupported assumption. The RTC simply repeats this unsupported assumption many, many times. Some examples follow.

> Implementation of these actions in compliance with the requirements of the NPDES permit would ensure that water quality impacts would be less than significant.

(RTC at p. 13.21-17.)

> It is reasonable to conclude that compliance with the Bayside NPDES permit would not result in adverse water quality effects because the permit specifies discharge prohibitions, dry-weather effluent limitations, wet-weather effluent performance criteria, and receiving water limitations that are protective of the beneficial uses and associated water quality objectives for San Francisco Bay, the receiving water. Monitoring and reporting requirements to demonstrate compliance with water quality objectives are also specified in the permit.

(RTC at p. 13.18.)

> Compliance with these plans, policies, and water quality criteria and objectives as enforced through the Bayside NPDES permit ensures that discharges of treated effluent from the SEWPCP are protective of water quality in San Francisco Bay. Therefore, compliance with the Bayside NPDES permit effluent and receiving water limitations is protective of water quality and it is appropriate to use the requirements of the NPDES permit as a threshold of significance for effluent discharges from the SEWPCP. Using this threshold, the SEIR properly concluded that water quality impacts related to effluent discharges from the SEWPCP are less than significant as described in Impact HYD-6 (pp. 5.9-33 to 5.9-41).

(RTC at p. 13.21-19.)

7 [LC-HYD-1]

[3]The San Francisco Public Utilities Commission is a department of the City and County of San Francisco.

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My previous comment requested that the City support this assumption with evidence. The RTC fails to do so. Therefore, the Alliance has gathered that evidence, and it shows the City has a continuous, consistent, and pervasive pattern of violating its NPDES permits. Exhibit M, attached, details these violations. Therefore, the SEIR's assumed basis for finding water quality impacts less than significant is false.

My July 24, 2015 comment letter regarding hydrology, water quality and biological impacts observed that the DSEIR's threshold of significance for the effect of untreated wastewater discharges to the Bay, which consists of limiting such discharges to 10 per year, ignores the quantity and duration of such discharges. The response stresses the work the City must do to prevent municipal wastewater from degrading water quality in the Bay, stating:

> As described in the permit, and on p. 5.9-20 of the SEIR, the SFPUC must implement the following nine minimum controls in accordance with the Combined Sewer Overflow Policy to reduce the frequency of combined sewer discharges and their effect on receiving water quality:
> 1. Conduct proper operation and regular maintenance programs for the combined sewer system and combined sewer discharge outfalls;
> 2. Maximize the use of the collection system for storage;
> 3. Review and modify pretreatment programs to minimize the effect of non-domestic discharges to the collection system;
> 4. Maximize flow to the SEWPCP and North Point Facility for treatment;
> 5. Prohibit combined sewer discharges during dry weather;
> 6. Control solids and floatable materials in combined sewer discharges;
> 7. Develop and implement a pollution prevention program focused on reducing the effect of combined sewer discharges on receiving waters;
> 8. Notify the public of combined sewer discharges; and
> 9. Monitor to effectively characterize combined sewer discharge effects and the efficacy of combined sewer discharge controls.
> These controls represent the best conventional and best available technology economically achievable as required under the Clean Water Act. The City is currently implementing these controls as required by the Combined Sewer Overflow Control Policy.

(RTC at p. 13.21-26.) This is all good and important work, but it is non-responsive to the Alliance's comment. The fact that these measures are the best the City can, or is legally required to do, is not relevant to whether the impact is significant. It may be relevant to whether further mitigation of the impact is feasible or effective, but these considerations cannot affect whether the impact is deemed significant.

The top two paragraphs on page 13.21-27 of the RTC assert that all waste water is treated.

7 [LC-HYD-1] cont.

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This is beside the point that the City anticipates and is allowed by its NPDES permit up to 10 discharges per year of waste water subject to only primary, rather than secondary, treatment.

The RTC appears to reject the Alliance's comment that the SEIR ignores duration and quantity, not just frequency, of the 10 discharges per year on grounds the NPDES permit does not address the duration and quantity of these discharges. But the issue here is whether impacts on Bay water quality are significant. CEQA does not allow the use of the NPDES permit terms as an absolute proxy for that determination.

7 [LC-HYD-1] cont.

C. The Response to Comment Bio-5 is Inadequate.

1. Waters of the U.S. and Waters of the State are Present on the Site

The FSEIR argues that the wetland feature on the site is not a state or federal wetland. Yet Response BIO-5 provides no evidence of consultation with either the U.S. Army Corps of Engineers ("Corps") or the State Water Resources Control Board ("SWRCB") regarding the status of the feature. With respect to the jurisdiction of the Corps, the FSEIR claims that under draft regulations that are stayed, the feature would be exempted from jurisdiction. This interpretation is not supported by any specific language in the referenced Sixth Circuit Court of Appeals decision, and thus has no authority.

The FSEIR also argues that the site was never abandoned such that the feature would have been "recaptured" as a wetland under the Clean Water Act. Yet no explanation is provided for the lack of any activities at the site or changes to the wetland feature between 2007 and 2014, a period of seven years. This inactivity at the site is demonstrated in the plates included in the July 16, 2015, BSK Technical Memorandum Regarding the Proposed Warrior Arena Wetland Features. (Attached as Exhibit K, see Figures 2a-2e.)

The FSEIR also makes the circular argument that the existence of priority pollutants within the wetland feature is irrelevant because the City does not consider the wetland feature to be jurisdictional. Again, no credible evidence is provided to support the argument that the wetland is not subject to federal jurisdiction in the first place.

The FSEIR incorrectly relies exclusively on federal law and ignores the broader jurisdiction of the state over all of its waters, including wholly constructed features. As such the SEIR fails to adequately describe the site physical features, the relevant regulatory requirements, and the avoidance, minimization and mitigation requirements it would be subject to. State waters are more broadly defined than waters of the U.S.: "'Waters of the state' means any surface water or groundwater, including saline waters, within the boundaries of the state." (Wat. Code, 13050, subd. (e).) This has been interpreted by the SWRCB to literally "include all waters within the state's boundaries, whether private or public, including waters in both natural and artificial channels."

8 [LC-BIO-1]

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Contrary to RTC BIO-5, the fact that the remediation at the site was at one time overseen by the San Francisco Regional Water Quality Control Board ("RWQCB") has no bearing on whether the feature would be considered jurisdictional by the SWRCB. While the SWRCB may choose to follow jurisdictional determinations by the Corps, the SWRCB has much broader authorities and may also assert jurisdiction under the parameters of Water Code section 13050, subdivision (e). As the FSEIR cannot point to any jurisdictional determination by the Corps, there is nothing for the SWRCB to follow; therefore, it would follow its own regulations and orders. (Executive Order W-59-93 attached as Exhibit N; State Water Resources Control Board Memorandum, January 25, 2001, Effect of SWANCC v. United States on the 401 Certification Program attached as Exhibit O; State Water Resources Control Board Guidance, June 25, 2004, for Regulation of Discharges to "Isolated" Waters attached as Exhibit P; State Water Resources Control Board Order NO. 2004-0004-DWQ attached as Exhibit Q; State Water Resources Control Board Resolution NO. 2008-0026 attached as Exhibit P).

The FSEIR's attempted rebuttal of the need for a Coastal Zone Management Act ("CZMA") consistency determination is also incorrect. In addition to claiming that the requirement does not apply because the City (not the Corps or the SWRCB) has determined that the feature is not jurisdictional, the FSEIR argues that filling the wetland would have no effect on resources in the coastal zone. As explained below, however, the wetland complex has significant habitat value to biological resources and supports coastal resources.

To further substantiate the existence of the wetland features on the site, BSK Associates has prepared a desktop delineation for submittal to the Corps to finally resolve the issue of jurisdiction. (See Exhibit L.) The exact nature of the wetland feature is described in the attached report, which determines that there are 0.51 acres of permanent wetlands at the site. The delineation also explains that the wetland provides the following nexus functions with the San Francisco Bay: (i) Sediment trapping, (ii) Nutrient recycling,(iii) Pollutant trapping, transformation, filtering, and transport, (iv) Retention and attenuation of flood waters, (v) Runoff storage, (vii) Export of organic matter, (viii) Export of food resources, and (ix) Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species.

The purpose of environmental review is to inform the public of the likely effects of carrying out a project. Here, the IS/NOP failed to accurately describe the wetland on the site, or to even provide a process by which the feature would be further investigated and the appropriate mitigation required. The information submitted by the Alliance constitutes substantial evidence of a fair argument that the Project will have a significant adverse effect on biological resources. In the alternative, per CEQA section 21166 and CEQA Guidelines section 15162, the facts described above constitute a change in circumstances since the 1998 SEIR involving, and significant new information showing, a new significant effect not previously analyzed in the 1998 SEIR. Under either standard, the OCII and the City must prepare and circulate for public comment an environmental impact report to review the Project's impacts on this wetland resource.

8 [LC-BIO-1] cont.

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IV. Noise Impacts.

The Alliance's comments on the Responses to Comments related to Air Quality issues are set forth in the November 2, 2015, letter from Frank Hubach attached as Exhibit S and in this letter.

A. The Construction Refinements and New Project Require Recirculation.

As noted above, the RTC describes a number of "construction refinements," including using dewatering generators, using a soil treatment pug mill, and removing rapid impact compaction from the construction plan and a new Project Variant. With respect to the air quality impacts of these construction refinements and new Project Variant, the RTC finds these changes do not create a new significant noise impact, or a substantial increase in severity of a previously identified significant noise impact, and therefore, recirculation is not required.

As described in the letter from Frank Hubach (Exhibit S), the construction refinements and new Project Variant will create new significant impacts. The RTC's findings to the contrary reflect the same flawed "existing ambient plus project increment" thresholds of significance discussed in my previous comment letter (dated July 25, 2015) regarding noise impacts.

B. The Response to the Alliance's Comments Regarding Construction and Operational Noise Are Inadequate.

Response NOI-2a regarding construction noise thresholds states:

> For this project, as discussed on pages 5.3-17 and 5.3-18, the SEIR applies a threshold of a 10 dBA increase over the existing noise levels, which represents a perceived doubling of loudness as the threshold representing a substantial temporary increase in noise levels warranting implementation of construction noise control measures. A more liberal threshold was developed to be applied to construction impacts given that construction is an inherently noisy activity and application of a lesser threshold, such as the 5 dBA increase applied to operational impacts which denotes a readily perceptible increase, would be exceeded by the most routine construction activity and is therefore not considered to be a realistically applicable criterion for construction. Additionally, a 10 dBA increase threshold is codified in Section 2909 (c) of the Police Code as a noise limit for noise affecting public property. This increase is an appropriate threshold for construction activity as it reflects OCII's understanding that *allowable* increases in noise levels can be dependent on a number of factors, including source and the duration of the noise and the receiver of the noise.

(RTC, p. 13.12-7 (italics added).) The response regarding operational noise thresholds is similar.

9 [LC-NOI-1]

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(RTC, p. 13.12-15.)

This is an example of the General Comment described above. This response has injected the question of what is "allowed" into the determination of "significance." The question of what is allowed is the final step in the CEQA process, and involves weighing considerations relating to the social and economic benefits of the Project. Injecting it into the first step subverts the integrity of the entire analysis.

This conflation of the distinct steps in the analysis also explains why the RTC's insistence on using the San Francisco Police Code's regulatory requirements (i.e., the City's final resolution of what is allowed and what is not allowed) as thresholds of significance is inconsistent with CEQA. The Police Code's regulatory requirements reflect the City's effort to balance the protection of people from harmful noise against the need for social and economic activity. That balance does not necessarily reflect the point at which impacts become significant. Under CEQA, such balancing is also required, but not at the point where significance is determined. In short, even where the lead agency believes an activity should be "allowed" because the social or economic considerations outweigh the environmental harm, the EIR must still disclose whether the impact is significant.

The RTC's reliance on Appendix G to the CEQA Guidelines as support for its use of Police Code's regulatory requirements (RTC, p. 13.12-15) is misplaced because the Guidelines cannot authorize a violation of CEQA.

9 [LC-NOI-1] cont.

Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

List of Exhibits

A. November 2, 2015, letter from John Farrow with exhibits 1- 4 thereto.

B. Exhibits 4-8 to November 2, 2015, letter from John Farrow described in Exhibit 1A above.

C. November 2, 2015, report by Greg Gilbert, Autumn Wind Associates.

D. August 13, 2015, Public Records Act Request from Thomas N. Lippe to OCII and City of San Francisco.

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Ms Tiffany Bohee
c/o Mr. Brett Bollinger
Re: Mission Bay Alliance comments on the Warriors Arena Project DSEIR: Hydrology, Water Quality and Biological Impacts
November 3, 2015
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E. Email exchanges between Thomas N. Lippe and the OCII and City of San Francisco dated September 11, 2015, through September 30, 2015.

F. November 2, 2015, letter from Dan Smith.

G. November 2, 2015, letter from Larry Wymer.

H. November 2, 2015, letter from report from Matt Hageman.

I. November 2, 2015, letter from Erik Ringelberg and Kurt Balasek.

J. November 2, 2015, letter from Erik Ringelberg.

K. July 16, 2015, BSK Technical Memorandum Regarding the Proposed Warrior Arena Wetland Features by Erik Ringelberg and Kevin Grove.

L. October 29, 2015, Draft Waters and Wetland Delineation Report Proposed Mission Bay Development, Blocks 29-32 San Francisco, California, by Erik Ringelberg and Kevin Grove of BSK Associates.

M. Summary of NPDES permit violations by the City of San Francisco since 2004 with supporting documents.

N. Executive Order W-59-93

O. State Water Resources Control Board Memorandum, January 25, 2001, Effect of SWANCC v. United States on the 401 Certification Program

P. State Water Resources Control Board Guidance, June 25, 2004, for Regulation of Discharges to "Isolated" Waters

Q. State Water Resources Control Board Order NO. 2004-0004-DWQ.

R. State Water Resources Control Board Resolution NO. 2008-0026.

S. November 2, 2015, letter from Frank Hubach.

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EXHIBIT A

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m|r|wolfe
& associates, p.c
attorneys-at-law

November 2, 2015

Thomas N. Lippe
Law Offices of Thomas N. Lippe, APC
201 Mission Street, 12th Floor
San Francisco, CA 94105
lippelaw@sonic.net

Re: **Air Quality Impacts** - Comments on Final Subsequent Environmental Impact Report for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 (Warriors Arena Project); San Francisco Planning Department Case No. 2014.1441E; State Clearinghouse No. 2014112045

Dear Mr. Lippe:

Acting as consulting counsel to you, we have reviewed the analysis of Toxic Air Contaminants (TACs) in the Draft and Final Subsequent Environmental Impact Report for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 (the "Project"). For the reasons set forth below, we concur with your determination that the assessment TACs in the DSEIR and FSEIR (collectively, SEIR) is inconsistent, confusing, and legally erroneous and that it fails adequately to disclose the Project's impacts. This letter incorporates by reference the November 2, 2015 letter report authored by Paul Rosenfeld and Jessie Jaeger (attached as Exhibit 1).

10 [LC-AQ-3]

I. The SEIR fails to provide a project-specific assessment of TAC health risks.

The DSEIR fails to provide a project-specific assessment of TAC health risks because it does not adopt or apply a threshold of significance for the project-specific impact. The SEIR's only threshold of significance for TACs is a threshold for cumulative impacts. The SEIR's threshold would find a considerable contribution to a significant cumulative impact only if (1) there were 100 excess cancers from all sources and (2) the project itself contributed 10 excess cancers. The SEIR's approach is wrong as a matter of law because it conflates project-specific and cumulative analysis and because it assumes without justification that the only relevant threshold is the threshold for whether the project makes a considerable contribution to a significant cumulative impact.

CEQA requires that an EIR assess both project-specific and cumulative impacts. (CEQA Guideline, §§ 15126.2, 15130.) Because assessment of project-specific and assessment of cumulative impacts are a distinct obligations, they require a distinct set of

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thresholds of significance. Whereas a project-specific analysis requires only that an EIR compare a project's effects to a single threshold, cumulative analysis requires two thresholds because cumulative impact analysis is a two-step process. In cumulative analysis an agency must separately (1) determine whether the impacts of the project in combination with those from other projects with related impacts are cumulatively significant by comparing that total impact to a "step-one" threshold, and (2) if so, determine whether the project's own effect is a considerable contribution by comparing the project's own effect to a "step-two" threshold. (CEQA Guideline, § 15130(a); *see* Kostka and Zischke, *Practice Under the California Environmental Quality Act* (2nd Ed., 2011 Update), §§ 13.39. 15.52; Remy, Thomas, et al, *Guide to CEQA* (11th Ed., 2007), pp. 474-475.)

CEQA recognizes that the thresholds used for project-specific analysis and for the second step of cumulative analysis differ. The step-two threshold of significance in cumulative analysis is used to determine whether the project's contribution to a significant cumulative impact is "considerable," i.e., "whether 'any additional amount' of effect should be considered significant in the context of the existing cumulative effect." (*Communities for a Better Environment v. California Resources Agency* ("*CBE*") (2002) 103 Cal.App.4th 98,119.) Even if a project's impact is "individually minor" and, thus, not found significant in a project-specific analysis, it may make a considerable contribution because it is "collectively significant." (*Id. at* 119-120; *Los Angeles Unified School Dist. v. City of Los Angeles* ("*LAUSD*")(1997) 58 Cal.App.4th 1019, 1025-1026.) Indeed, the step-two threshold may need to be a sliding scale because "the greater the existing environmental problems are, the lower the threshold should be for treating a project's contribution to cumulative impacts as significant." *CBE*, supra, 103 Cal.App.4th at 120. In sum, because CEQA specifically recognizes that the step-two threshold in cumulative analysis may be lower than the threshold to determine whether an impact is individually significant, there can be no routine assumption that the project-specific threshold is the same as the threshold for step-two in a cumulative analysis.

10 [LC-AQ-3] cont.

Here, the SEIR does not provide, much less justify, any threshold for a project-specific analysis. The only form of analysis was cumulative analysis, and the SEIR simply declines to consider whether the Project's TAC impacts would be individually significant.

The omission of a project-specific analysis is legally erroneous. Furthermore, there is ample evidence that the omission is prejudicial to informed decision-making and public participation. Had the EIR provided a legally adequate project-specific analysis, it may well have determined that the project's individual impacts are significant, even if there were no significant cumulative impact from all projects taken together. First, as indicated in the attached letter from Paul Rosenfeld and Jessie Jaeger, the Project causes at least 42 excess cancers in one million. This impact is four times the 10-excess cancer threshold used by the majority of California Air districts, including BAAQMD, to assess the significance of single source impacts. Indeed, the Project's excess cancers nearly double the total ambient cancer risk. Finally, regardless of the conclusion that the EIR

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might have reached had it provided a project-specific analysis, the EIR is insufficient as an informational document without this analysis. To correct this error, the EIR should be revised and recirculated.

II. The SEIR's assessment of cumulative TACs is invalid because it fails to include all sources of related impacts.

As set forth in the attached letter from Jessie Jaeger and Paul Rosenfeld, the SEIR fails to include foreseeable future development in its analysis of cumulative TAC health risks. In particular, the SEIR fails to include the TAC emissions from the future construction and operation of the Mission Bay area redevelopment projects. This build-out was projected in the Mission Bay EIR to generate 218,549 vehicle trips and 2,684 truck trips per day. Because the EIR projects that excess cancers will be at least 86 per one million with the existing development plus the Project, this level of additional traffic clearly has the potential to cause excess cancers to exceed the 100 excess cancer threshold identified by the EIR as the threshold for a significant cumulative impact.

Cumulative analysis must include all sources of "related impacts," including past, present, and potential future projects. (CEQA Guideline, § 15130(a)(1), (b).) The unjustified omission of related sources of TACs is an error because without this disclosure the public and decision makers cannot "determine whether such information would have revealed a more severe impact." (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 720, 724.) The future development of the rest of the Mission Bay project is clearly foreseeable because it has already been approved at the program level. The Warriors Arena Project is but one phase of the overall Mission Bay project. The California Supreme Court has held that it is error for an EIR for one phase of a project to omit impacts from future phases in its analysis of cumulative impacts. (*Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 396.) The omission of this foreseeable future development is error.

The DSEIR implies that that impacts from future development may be ignored because "[o]ther future projects, whose emissions have not been incorporated into the existing Citywide health risk modeling . . . would similarly be subject to CEQA requirements to analyze the health risk impact of their project."[1] (DSEIR, p. 4.4-28.) However, the SEIR may not tier from future environmental reviews: "CEQA's informational purpose 'is not satisfied by simply stating information will be provided in the **future**." (*Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 440-441 (emphasis in original).)

10 [LC-AQ-3] cont.

[1] The DSEIR mentions Pier 70 and Seawall Lot 337/Pier 48 as examples of such future projects, and then dismisses their impacts because they are allegedly too distant to affect the same receptors. (DSEIR, p. 5.4-28). But the DSEIR ignores the Mission Bay buildout adjacent to the project.

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III. The SEIR's assessment of TAC health risks is inadequate because it ignores current OEHHA guidance.

Comments on the DSEIR objected that the health risk assessment fails to use the most recent OEHHA Air Toxics Hotspots Program Risk Assessment Guidelines. OEHHA has revised its daily breathing rate for children upward to 1,090 L/kg-day, almost doubling the 581 L/kg-day breathing rate from the outdated 2000 guidelines used by the DSEIR. In response, the FSEIR does not dispute the validity of the new guidance and admits that BAAQMD intends to use the revised guidance in the future, but declined to provide an assessment of health risks based on the new guidance.

Children are the most vulnerable to TAC exposure, as evidenced by the elevated excess cancer rates for children as compared to adults. (*See*, e.g., DSEIR, Table 5.4-11, p. 5.4-49). The area of maximum vulnerability to TAC's from the project happens to be a children's hospital.

As the attached letter from Paul Rosenfeld and Jessie Jaeger indicates, contrary to the FSEIR, OEHHA published and recommended use of higher, differential breathing rates for children well before the SEIR's health risk assessment was prepared. Rosenfeld and Jaeger demonstrate that if excess cancers were determined using the OEHHA guidance for children's breathing rate rather than the outdated 2000 guidance, the excess cancers for the maximally exposed receptors at the UCSF Benioff Children's Hospital would in fact substantially exceed the 100 excess cancer threshold used by the DSEIR to determine a significant cumulative impact. Based on the threshold of significance adopted by the SEIR, the Project would make a considerable contribution to this significant cumulative impact because the Project adds well more than 10 excess cancers to this total. Thus, the SEIR's failure to use the most recent scientific data and its failure to provide reasoned analysis in response to comments requesting this analysis results in a failure to disclose this significant cumulative impact.

Refusal to respond to responsible comments from experts regarding analytic parameters with reasoned analysis, as well as mischaracterization of the currency of those Parameter, are failures to meet CEQA's disclosure obligations. For example, a court set aside an analysis of TAC's that was based on outdated CARB guidance after comments pointed out this flaw and the final EIR declined to provide corrected analysis:

> ". . . the use in the final EIR of data extrapolated from CARB's 1991 speciation profile # 508 for measuring aircraft emission of TAC's did not meet the standard of "a good faith effort at full disclosure" required by CEQA. (Guidelines, § 15151.) " ' "[W]here comments from responsible experts or sister agencies disclose new or conflicting data or opinions that cause concern that the agency may not have fully evaluated the project and its alternatives, these comments may not simply be ignored. *There must be good faith, reasoned analysis in response.*" ' " (*Cleary v. County of Stanislaus* (1981) 118 Cal.App.3d 348, 357, 173 Cal.Rptr. 390, original italics.) By using scientifically outdated information derived from

10 [LC-AQ-3] cont.

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the 1991 profile, we conclude the EIR was not a reasoned and good faith effort to inform decision makers and the public about the increase in TAC emissions that will occur as a consequence of the Airport expansion.

10 [LC-AQ-3] cont.

(*Berkeley Keep Jets Over the Bay Committee v. Board of Port Com'rs* (2001) 91 Cal.App.4th 1344, 1367 [111 Cal.Rptr.2d 598, 615], *as modified on denial of reh'g (Sept. 26, 2001*.)

Here, the EIR should be revised and recirculated to provide a health risk assessment that is based on current science regarding the parameters that determine actual risk to children.

Yours sincerely,

M. R. WOLFE & ASSOCIATES, P.C.

John Farrow

JHF:hs

List of Exhibits

Exhibit 1 is referenced in this letter.
Exhibits 2-8 are referenced in Exhibit 1 to this letter.

1. November 2, 2015 letter report from Jessie Jaeger and Paul Rosenfeld.

2. "Health Risk Assessments for Proposed Land Use Projects," California Air Pollution Control Officers Association 2009, available at: http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf.

3. CEQA Air Quality Handbook, A Guide for Assessing the Air Quality Impacts for Projects Subject to CEQA Review, San Luis Obispo Air Pollution Control District 2012, available at: http://www.slocleanair.org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20Sept%202015%29.pdf.

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4. Mission Bay Land Use Plan, November 2005, available at: http://sfocii.org/Modules/ShowDocument.aspx?documentid=783.

5. "Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessment." Office of Environmental Health Hazard Assessment, February 2015, available at: http://oehha.ca.gov/air/hot_spots/hotspots2015.html.

6. Adoption of the Revised Air Toxics Hot Spots Program Technical Support Document for Cancer Potency Factors, Office of Environmental Health Hazard Assessment, June 1, 2009, available at: http://www.oehha.ca.gov/air/hot_spots/tsd052909.html.

7. Adoption of the Revised Air Toxics Hot Spots Program Risk Assessment Guidelines: Revised Technical Support Document for Exposure Assessment and Stochastic Analysis, Office of Environmental Health Hazard Assessment, August 27, 2012, available at: http://www.oehha.ca.gov/air/hot_spots/tsd082712.html.

8. *Technical Support Document for Exposure Assessment and Stochastic Analysis*, Office of Environmental Health Hazard Assessment, August 2012, available at: http://www.oehha.ca.gov/air/hot_spots/pdf/2012tsd/Chapter3_2012.pdf.

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EXHIBIT 1

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SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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Matt Hagemann, P.G, C.Hg.
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November 2, 2015

Thomas N. Lippe
The Law Offices of Thomas N. Lippe
201 Mission Street, 12th Floor
San Francisco, CA 94105

Subject: Comments on the Event Center and Mixed-Use Development Project at Mission Bay Blocks 29-32

Dear Mr. Lippe:

We have reviewed the October 23, 2015 Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 Project ("Project") Final Subsequent Environmental Impact Report (FSEIR), which includes responses to comments ("Responses") we made on the June 2015 Draft Environmental Subsequent Impact Report (DSEIR).

The FSEIR fails to resolve several issues raised in comments to the DSEIR. We maintain that the SEIR's health risk assessment remains flawed for three reasons:

- The FSEIR fails to provide a project-specific health risk assessment for the Project. The thresholds of significance and the analysis in the FSEIR provide only a cumulative impact analysis. Thus, the FSEIR fails to consider whether the Project's toxic air contaminant (TAC) emissions are, by themselves, a significant impact. Although the FSEIR fails to identify a threshold of significance for project-specific effects, Project-caused excess TAC cancers are more than four times the threshold used by most California air districts to determine the significance of an individual project's impacts.

- The FSEIR fails to include all foreseeable sources of TAC emissions in its cumulative impact analysis, as it omits foreseeable future construction and operation of developments approved in the vicinity of the Project. The health risk assessment should be revised to include TAC emissions from these sources, as they could potentially result in a significant cumulative impact.

- The FSEIR fails to incorporate updated child breathing rates, set forth by OEHHA, in its health risk assessment. Even though OEHHA published these higher breathing rates for children in 2012 and recommends that TAC analyses use these rates, and even though comments

11
[LC-AQ-3]

requested that the FSEIR provide an updated analysis using these breathing rates, the FSEIR failed to do so.

Failure to Assess Individual Health Risk from Proposed Project

In our July 27, 2015 comment letter, we found that the DSEIR failed to adequately evaluate the health risk posed to nearby sensitive receptors from exposure to toxic air contaminants (TACs) emitted during Project construction and operation. We maintain that the FSEIR incorrectly relies upon criteria used to identify communities located within an Air Pollutant Exposure Zone (APEZ), as defined by Article 38 under the San Francisco Health Code, and propose that the Project's individual health risk and $PM_{2.5}$ emissions be compared to the Bay Area Air Quality Management District's (BAAQMD) project-level significance thresholds of 10 in one million and 0.3 micrograms per cubic meter (µg/m^3), respectively.[1]

As we pointed out in our July 27 letter, to evaluate the cumulative and individual health risk impacts of the Project, the DSEIR relies upon criteria used to define communities located within an APEZ. The DSEIR states,

> "an APEZ [is] defined as an area in which modeled air pollution exceeds either: (1) a cancer risk of greater than 100 per one million exposed, and/or (2) PM2.5 concentrations in excess of 10 microgram per cubic meter (µg/m^3) (including ambient)'" (Appendix AQ, p. 9).

Using these criteria, both the DSEIR and the FSEIR's Responses concluded that because the Project's health risk, combined with background ambient sources, would not result in sensitive receptor locations meeting the Air Pollutant Exposure Zone criteria, the Project would have a less-than-significant health risk impact (FSEIR, p. 13.13-25). The FSEIR states,

> "The project site is not within an Air Pollutant Exposure Zone and, based on citywide modeling, the highest mitigated risk at a receptor near the project site (UCSF Hospital) from the contribution of emissions from all modeled sources is an excess cancer risk of 86 per one million persons exposed with an increased risk of 44 per one million due to background ambient sources and the remainder from modeled vehicles (construction and operation) and stationary source contributions from the project. These levels are below the SEIR threshold levels for identifying when sensitive populations may be exposed to substantial pollutant concentrations." (DSEIR p. 5.4-27; FSEIR p. 13.13-26).

The APEZ 100 excess cancer threshold is a threshold for cumulative analysis, not for evaluation of project-specific impacts. CEQA requires both assessments. BAAQMD's project-specific threshold of significance of 10 excess cancers is for "single source impacts;" thus, a single source such as the Project should be deemed to have a significant impact if it causes 10 or more excess cancers regardless of cumulative conditions.

11 [LC-AQ-3] cont.

[1] "California Environmental Quality Act Air Quality Guidelines." BAAQMD, May 2011, *available at:*http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx, p. 5-3

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The 10 excess cancers threshold is widely used by California Air Districts as a threshold for project-specific impacts. The California Air Pollution Control Officers Association reports that, for TACS, "[f]or the majority of the air districts the **excess cancer risk** significance threshold is set at **10 in a million.**"[2] For example, the San Luis Obispo Air Pollution Control District finds that individual projects that generate over 10 excess TAC cancers have significant impacts.[3]

We maintain that the FSEIR's application of APEZ criteria to ignore the significance of project-specific impacts fails to disclose that the Project will expose sensitive populations to substantial pollutant concentrations, as discussed below.

Since the Project is not proposing to construct residential land uses on-site, it will not expose new on-site sensitive receptors to substantial air pollutant concentrations. There are, however, off-site sensitive receptors within the Project vicinity that could be potentially exposed to pollutants emitted by the Project. Sensitive receptor locations located within 1,000 feet of the Project site include: the UCSF Hearst Tower, the Madrone Mission Bay Residential Towers, and the UCSF Hospital (see table below) (p. 5.4-17).

TABLE 5.4-5
SENSITIVE RECEPTORS IN THE PROJECT SITE VICINITY

Receptor Type	Distance and Direction from the Project Site
Residential: UCSF Mission Bay Housing (Hearst Tower), Block 22	200 feet northwest
Residential: Madrone Mission Bay Residential Towers	800 feet to the north, on Mission Bay Boulevard North
Hospital: UCSF Benioff Children's Hospital facility at Mission Bay, plus the UCSF Betty Irene Moore Women's Hospital and the UCSF Bakar Cancer Hospital	300 feet southwest

Additionally, the DSEIR assessed the risk posed to the UCSF Mission Bay day care facility, located approximately 1,300 feet to the west (p. 5.4-16). Of the sensitive receptor locations evaluated in the DSEIR, a child resident at the UCSF Hospital was found to be the most affected by the Project. As pointed out in the FSEIR Responses, the maximally exposed sensitive receptor location had an estimated background ambient risk of approximately 44 in one million (p. 13.13-26). Mitigated emissions from Project operation and construction at that location would increase this risk to approximately 86 in one million excess cancers (see table below) (Volume 3, pp. 1225).

11 [LC-AQ-3] cont.

[2] "Health Risk Assessments for Proposed Land Use Projects," California Air Pollution Control Officers Association 2009, page 11, *available at:* http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf.

[3]CEQA Air Quality Handbook, A Guide for Assessing the Air Quality Impacts for Projects Subject to CEQA Review, San Luis Obispo Air Pollution Control District 2012, available at: http://www.slocleanair.org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20Sept%202015%29.pdf.

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Lifetime Excess Cancer Risk at off-site Receptors

Source	Excess Cancer Risk (in one million)			
	UCSF Hearst Tower		UCSF Hospital Receptor	Uber/ARE Receptor
	Child Resident	Adult Resident	Child Resident	Daycare Child
Background at the maximally impacted receptor	26	26	44	20
Uncontrolled Construction Contribution	54	2.8	28	73
Controlled (Tier 2 + NOx VDECS) Construction Contribution	9.2	0.48	4.8	12.5
Project Operations – Generators	30	30	30	30
Project Operations – Mobile Sources	7.2	7.2	7.2	7.2
Cumulative Total (Uncontrolled/with Mitigation)	117/ 72	66/ 64	109/ 86	131/ 70
Significance Threshold	100	100	100	100
Significant (Uncontrolled/with Mitigation)?	Yes/ No	No/ No	Yes/ No	Yes/ No

The Project's emissions, alone, nearly double the health risk posed to a child resident at this sensitive receptor location. Similarly, the Project increases the total risk posed to a child resident at the UCSF Hearst Tower sensitive receptor location by a factor of 2.8, increases the total risk posed to an adult resident at the UCSF Hearst Tower location by a factor of 2.5, and increases the total risk posed to a daycare child at the Uber/ARE location by a factor of 3.5 (see table below). The Project's excess cancers are well in excess of the 10 in one million threshold used by BAAQMD and most California Air districts to determine the significance of an individual project's impact.

Sensitive Receptor	Background Risk	Project Risk	Total Risk	Factor by which Risk Increases Due to Project
	Excess Cancers in One Million			*Total Risk/Background Risk*
UCSF Hearst Tower Child Resident	26	46	72	2.8
UCSF Hearst Tower Adult Resident	26	38	64	2.5
UCSF Hospital Child Resident	44	42	86	2.0
Uber/ARE Daycare Child	20	50	70	3.5

The fact that the FSEIR concludes that the Project would not expose sensitive populations to "substantial pollutant concentrations," even though the Project's contributions are equal to or greater than the background health risk at every sensitive receptor location is absolutely absurd. Simply because the Project "would not result in sensitive receptor locations meeting the Air Pollutant Exposure Zone criteria" does not mean that the Project will have a less-than-significant health risk impact, and the FSEIR is wrong to make such a ridiculous assumption (p. 13.13-25). The fundament problem is that the FSEIR entirely fails to consider whether the Project's own TAC impact is a significant impact regardless of the cumulative context.

Cumulative Impact Analysis Fails to Account for All Past, Present and Future Sources

The DSEIR utilizes background ambient risk values from a local-scale citywide modeling effort conducted in 2012, and then combines the Project's health risk to this background risk to determine whether or not the Project would have a cumulatively considerable impact. Using this method, the DSEIR concludes that with mitigation, the Project would have a less-than-significant cumulative health risk impact (p. 5.4-49). This determination, however, is based on a flawed analysis that fails to account for "all past,

11 [LC-AQ-3] cont.

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present, and foreseeable future sources."[4] As a result, the Project's cumulative health risk impact is greatly underestimated.

As previously stated, the ambient background health risk values, relied upon by the DSEIR, were derived from a city wide modeling effort. The methods used and specific emission sources included in this model can be found in *The San Francisco Community Risk Reduction Plan: Technical Support Documentation*.[5] According to this report, direct emissions from on-road mobile sources on freeways and streets with traffic volumes of more than 1,000 vehicles per day, permitted stationary sources, Caltrain passenger diesel locomotives, ships and harbor craft, local transit buses, and major construction projects in 2010 and 2025 were modeled. Emissions from indirect sources that generate vehicle trips such as distribution centers, retail centers, and postal service stations were not included in the model because they "were judged to be less important than similar sources that are included, such as the case of indirect sources (whose contribution is small compared to freeway and street traffic)…"[6]

While contributions from indirect sources may be negligible when compared to emissions from freeways and major streets, they could present a significant impact relative to local emissions near the Project site for several reasons.

First, the Project site is not located near any major freeways or streets that meet the above criteria; therefore, local impacts from mobile-source emissions within the Project vicinity were not accounted for. This statement is supported by data presented in *The San Francisco Community Risk Reduction Plan: Technical Support Documentation*. As evident from the figure below, excess cancer risks from direct on-road mobile emissions in 2010 within the Project area were not accounted for, as the entire area is white.[7]

11 [LC-AQ-3] cont.

[4] "California Environmental Quality Act Air Quality Guidelines." BAAQMD, May 2011, *available at*:http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx, p. 2-5

[5] "The San Francisco Community Risk Reduction Plan: Technical Support Documentation." BAAQMD, December 2012, *available at:* http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Findings_v9.pdf

[6] "The San Francisco Community Risk Reduction Plan: Technical Support Documentation." BAAQMD, December 2012, *available at:* http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Findings_v9.pdf, p. 4

[7] "The San Francisco Community Risk Reduction Plan: Technical Support Documentation." BAAQMD, December 2012, *available at:* http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Findings_v9.pdf, p. 40, 42

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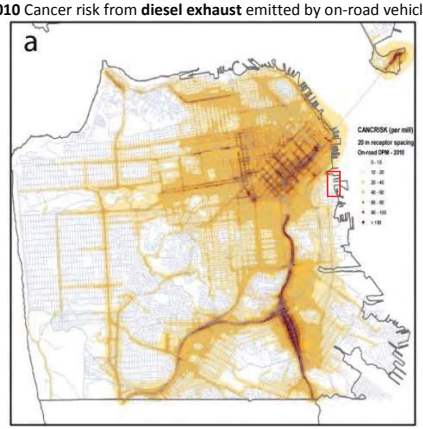
2010 Cancer risk from **diesel exhaust** emitted by on-road vehicles



2010 Cancer risk from **total organic gases** emitted by on-road vehicles

Similarly, figures for projected cancer risks from on-road mobile emissions in 2014 and 2025 demonstrate that these sources were not considered for future years (see figures below).

11
[LC-AQ-3]
cont.

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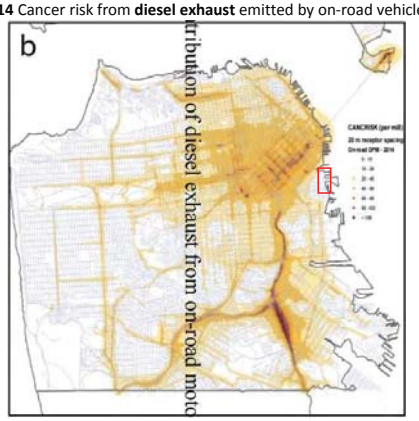
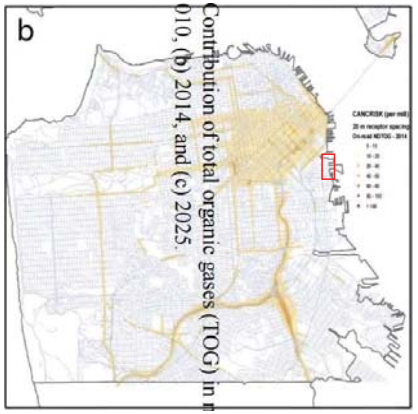
2014 Cancer risk from **diesel exhaust** emitted by on-road vehicles



2014 Cancer risk from **total organic gases** emitted by on-road vehicles



11
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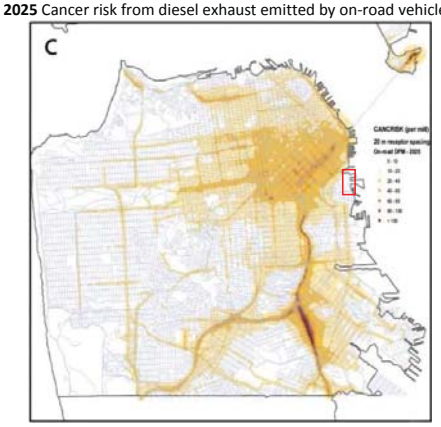
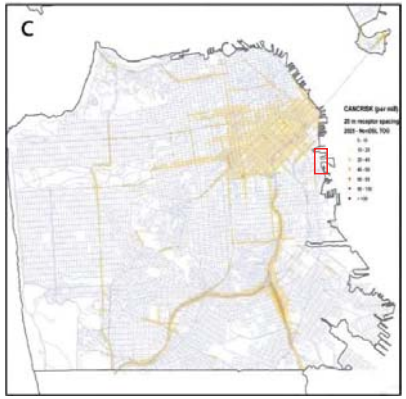
cont.

2025 Cancer risk from diesel exhaust emitted by on-road vehicles



2025 Cancer risk from **total organic gases** emitted by on-road vehicles



Second, major developments within the Project area were under construction at time of modeling. These new developments are anticipated to generate a significant number of vehicle trips, thus

11 [LC-AQ-3] cont.

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increasing the amount of diesel particulate matter (DPM) and TAC emissions nearby sensitive receptors would be exposed to.

The DSEIR recognizes that emissions from all "foreseeable future sources" were not accounted for when evaluating the Project's cumulative health risk impact. The DSEIR states,

> "The HRA takes into account the cumulative contribution of localized health risks to sensitive receptors from sources included in the Citywide modeling plus the proposed project's sources. Other future projects, whose emissions have not been incorporated into the existing Citywide health risk modeling, such as Pier 70 and Seawall Lot 337/Pier 48 would similarly be subject to CEQA requirements to analyze the health risk impact of their project. However, health risk impacts are localized, and health risks from sources decrease substantially with increasing distance. Thus cumulative impacts from the Pier 70 and Seawall Lot 337/Pier 48 would not combine with the proposed project's emissions to substantially increase health risks within the project vicinity. Thus, because the project-level analysis includes health risks from all known existing sources, the project-level analysis is also a cumulative health risk analysis" (p. 5.4-28).

While the two projects discussed in the DSEIR would not necessarily contribute to the local health risk impact, there are many other projects located within the Project vicinity that could contribute to localized health risks. The proposed Project is one of many developments included in the Mission Bay Redevelopment Area (see figure below).[8]

11 [LC-AQ-3] cont.

[8] Mission Bay Land Use Plan, November 2005, *available at:* http://sfocii.org/Modules/ShowDocument.aspx?documentid=783

11 [LC-AQ-3] cont.

According to the Mission Bay EIR, at buildout, the proposed developments are anticipated to generate approximately 218,549 vehicle trips per day, and approximately 2,684 truck trips per day (see table below).[9]

Project Land Use	Daily Vehicle Trips	Annual Vehicle Trips	Daily Truck Trips	Annual Truck Trips
Mission Bay North	73,710	26,904,150	674	246,010
Mission Bay South	144,839	52,866,235	2,010	733,650
Total Project	**218,549**	**79,770,385**	**2,684**	**979,660**

Once construction of the proposed Mission Bay developments are completed, the DPM and TAC emissions from operational mobile-sources alone could result in a potentially significant impact on local health risk. The health risk conducted in the DSEIR failed to account for these additional "foreseeable future sources," and as a result, the Project's cumulative health risk impact is underestimated. It should be noted that the proposed developments encompass approximately 300 acres of land. As is

[9] "Final Mission Bay Subsequent Environmental Impact Report." San Francisco Planning Department, September 17, 1998, *available at*: http://www.sfocii.org/index.aspx?page=61

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demonstrated in the figure below, a significant portion of the proposed developments are within 1,000 feet of the Project site.

11 [LC-AQ-3] cont.

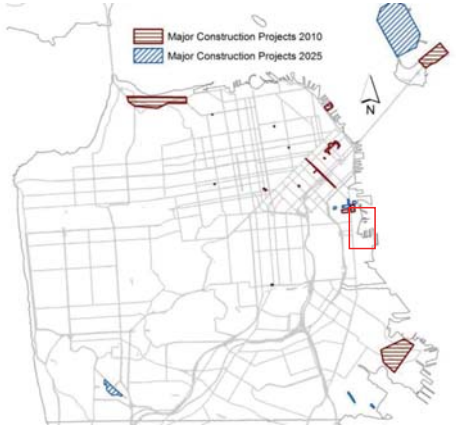
Therefore, the indirect vehicle emissions generated by the portion of developments located within 1,000 feet could still significantly contribute to the local cancer risk. When impacts from these sources are accounted for, the mitigated health risk at the UCSF Hospital of 86 in one million could substantially increase, potentially to a level in exceedance of the 100 in one million threshold.

Finally, construction emissions from major developments within the area, while analyzed, were not included in the citywide model. Modeled background ambient cancer risk relied upon by the DSEIR does account for major construction projects approved at time of modeling, including ones at Mission Bay. However, the analysis conducted was extremely limited, and the results of this analysis were not included in the total citywide model. *The San Francisco Community Risk Reduction Plan: Technical Support Documentation* report states,

> "No emission estimates were made for project year 2014. Emissions were estimated to represent the phase of construction expected to occur over the course of the modeling year and are not meant to encompass the entire project construction. Only exhaust emissions from construction equipment were included in the inventory; the analysis did not quantify emissions from fugitive dust or road dust. Health risk estimated from the emissions of construction

projects are for informational purposes only and were not included in the city-wide assessment."[10]

As is evident from the figure below, there are major construction projects underway in 2010 within the vicinity of the Project, and major construction projects anticipated to occur in 2025.[11]



By failing to account for the additional impacts from these local sources, the cumulative health risk impact at the Project site is greatly underestimated.

11 [LC-AQ-3] cont.

Failure to Utilize Values from Updated Health Risk Assessment Guidelines

In February 2015, the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) released updated health risk assessment guidelines that require risk calculations for specific age groupings.[12] The FSEIR fails to incorporate recommended age specific inhalation rates set forth in this updated guidance document, arguing that "air districts do not always

[10] "The San Francisco Community Risk Reduction Plan: Technical Support Documentation." BAAQMD, December 2012, *available at:* http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Findings_v9.pdf, p. 23.

[11] "The San Francisco Community Risk Reduction Plan: Technical Support Documentation." BAAQMD, December 2012, *available at:* http://www.gsweventcenter.com/Draft_SEIR_References%5C2012_12_BAAQMD_SF_CRRP_Methods_and_Findings_v9.pdf, p. 34

[12] "Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessment." Office of Environmental Health Hazard Assessment, February 2015, *available at*: http://oehha.ca.gov/air/hot_spots/hotspots2015.html

adopt OEHHA methodologies verbatim or immediately" (p. 13.13-50, 13.13-51). While this may be true, OEHHA is the regulatory agency responsible for determining what default values should be used within a health risk, and until the Air District updates its health risk guidance to reflect OEHHA's proposed updates, recommendations set forth by OEHHA should be used. Furthermore, these age-specific breathing rates were formally adopted and implemented prior to adoption of this most recent guidance (March 2015), contrary to what the FSEIR suggests. Due to these reasons, prior to certification of the FSEIR, an updated health risk assessment should be prepared to include these updated values.

OEHHA was tasked with to developing guidelines for conducting health risk assessments under the Air Toxics Hot Spots Program (Health and Safety Code Section 43360(b)(2)). OEHHA initially developed Technical Support Documents (TSDs) in 1999-2000 in response to this statutory requirement. Since 2000, they have revised and adopted TSDs in an effort to present updated methodologies that reflect scientific knowledge and techniques developed since the previous guidelines were prepared; in particular, to explicitly include consideration of possible differential effects on the health of infants, children and other sensitive subpopulations, in accordance with the mandate of the Children's Environmental Health Protection Act (Senate Bill 25, Escutia, Chapter 731, Statutes of 1999, Health and Safety Code Sections 39669.5 et seq.).[13]

Updated breathing rates for children and infants were adopted by OEHHA more than two years prior to the time the FSEIR's health risk assessment was conducted. In August of 2012, OEHHA formally adopted the *Technical Support Document for Exposure Assessment and Stochastic Analysis*.[14] Chapter three of this document discusses "age-specific breathing rates for use in health risk assessments for short-term exposure…and for long-term daily average exposures resulting from continuous or repeated 8-hour exposure."[15] OEHHA recommends the long-term daily breathing rates in Table 3.1 of this document (see excerpt below).

11 [LC-AQ-3] cont.

Table 3.1. Recommended Point Estimates for Long-Term Daily Breathing Rates

	3rd Trimester	0<2 years	2<9 years	2<16 years	16<30 years	16<70 years
	L/kg-day					
Mean	225	658	535	452	210	185
95th Percentile	361	1090	861	745	335	290
	m^3/day					
Mean	15.3	6.2	10.7	13.3	15.0	13.9
95th Percentile	23.4	11.2	16.4	22.6	23.5	22.9

[13] Adoption of the Revised Air Toxics Hot Spots Program Technical Support Document for Cancer Potency Factors, Office of Environmental Health Hazard Assessment, June 1, 2009, *available at*: http://www.oehha.ca.gov/air/hot_spots/tsd052909.html

[14] Adoption of the Revised Air Toxics Hot Spots Program Risk Assessment Guidelines: Revised Technical Support Document for Exposure Assessment and Stochastic Analysis, Office of Environmental Health Hazard Assessment, August 27,2012, *available at*: http://www.oehha.ca.gov/air/hot_spots/tsd082712.html

[15] http://www.oehha.ca.gov/air/hot_spots/pdf/2012tsd/Chapter3_2012.pdf p. 3-1

Therefore, to provide an appropriate analysis of the health effects on children, the 95th percentile breathing rates for children should have been applied at the time the analysis was conducted, and should be applied now in an updated health risk assessment in an effort to determine the potential cancer risk posed to children and infants residing near the Project site.

The DSEIR utilizes a breathing rate of 581 L/kg-day for children at each sensitive receptor location, and uses a breathing rate of 302 L/kg-day for an adult resident (see table below) (Appendix AQ, Table 6.1-7).

Exposure Parameter	Units	Construction			
		Child Resident	Adult Resident	Hospital Child	Daycare Child
Daily Breathing Rate (DBR)[1]	[L/kg-day]	581	302	581	581
Exposure Time (ET)[2]	[hours/24 hours]	24	24	24	11
Exposure Frequency (EF)[3]	[days/year]	350	350	365	253
Exposure Duration (ED)[4]	[years]	2.0	2.0	1.0	0.67
Averaging Time (AT)	[days]	25,550	25,550	25,550	25,550
Intake Factor, Inhalation (IF_{inh})	[m^3/kg-day]	0.016	0.0083	0.0083	0.0018
Cancer Risk Adjustment Factor[5]	[-]	10	1.0	10	10
Modeling Adjustment Factor[2]	[-]	N/A	N/A	N/A	3.15

In an effort to demonstrate how greatly the breathing rates affect the overall health risk posed to each sensitive receptor, we conducted a simple analysis where we kept every health risk parameter the same, and only changed the breathing rates between the two assessments. Using the DSEIR's child breathing rate of 581 L/kg-day, and assuming that each receptor would be exposed to an ambient air concentration of 0.5 µg/m^3 for two years, we estimated a child resident cancer risk of 88 in one million (see table below).

Parameter	Description	Units	Child
Cair	Concentration	µg/m^3	0.5
DBR	Daily breathing rate	L/kg-day	581
EF	Exposure Frequency	days/year	350
ED	Exposure Duration	years	2
AT	Averaging Time	days	25550
	Inhaled Dose	(mg/kg-day)	8.17E-06
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1
ASF	Age Sensitivity Factor	-	10
	Cancer Risk (in one million)		**88**

When OEHHA's updated breathing rate of 1,090 L/kg-day is used, we estimate a child resident cancer risk of 164 in one million (see table below).

Parameter	Description	Units	Child
Cair	Concentration	µg/m^3	0.5
DBR	Daily breathing rate	L/kg-day	1090
EF	Exposure Frequency	days/year	350
ED	Exposure Duration	years	2
AT	Averaging Time	days	25550

11 [LC-AQ-3] cont.

	Inhaled Dose	(mg/kg-day)	8.17E-06
CPF	Cancer Potency Factor	1/(mg/kg-day)	1.1
ASF	Age Sensitivity Factor	-	10
	Cancer Risk (in one million)		**164**

This simple analysis demonstrates that when the updated breathing rate for a child receptor is utilized, the cancer risk is nearly doubled.

It is particularly critical that the analysis consider the actual impacts of TACs on child receptors based on their actual breathing rates because the maximally exposed receptors near the Project site are children, including children at the UCSF Benioff Children's Hospital.

Conclusion

The FSEIR remains inadequate as an assessment of the health risks from the Project's TAC emissions, both by itself and cumulatively in combination with other TAC sources. It should be revised to provide a project-specific analysis, to provide a cumulative analysis that includes all foreseeable future projects, and to assess TAC impacts to children based on current science and OEHHA guidance.

11 [LC-AQ-3] cont.

Sincerely,

Paul Rosenfeld

Jessie Jaeger

O-MBA20L7

EXHIBIT 2

O-MBA20L7

Health Risk Assessments for Proposed Land Use Projects

CAPCOA Guidance Document

CAPCOA
CALIFORNIA AIR POLLUTION CONTROL OFFICERS ASSOCIATION

Prepared by:
CAPCOA Planning Managers

Approved for Release
July 2009

CAPCOA Planning Managers HRA Committee Members

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Terri Thomas – VCAPCD
Matt Jones – YSAQMD
Dan O'Brien – YSAQMD

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Glossary

Acute Hazard Index	Acute Hazard Index is the ratio of the average short term (generally one hour) ambient concentration of an acutely toxic substance(s) divided by the acute reference exposure level set by the Office of Environmental Health Hazard Assessment. If this ratio is above one, then adverse health effects may occur.
Background Risk	Background risk is the risk level found throughout an area. This risk is not caused by a particular facility; it is the cumulative risk and may be partly due to air pollution from vehicle traffic.
Cancer Risk	Cancer risk is defined as the probability that an individual will contract cancer usually expressed as so many chances per million persons exposed to a specified concentration of carcinogenic substance(s).
Chronic Hazard Index	Chronic Hazard Index is the ratio of the average annual ambient concentration of a chronically toxic substance(s) divided by the chronic reference exposure level set by the Office of Environmental Health Hazard Assessment. If this ratio is above one, then adverse health effects may occur.
Commenting Agency	A commenting agency is any public agency that comments on a CEQA document, but is neither a lead agency nor a responsible agency. For example, a local air district, as the agency with the responsibility for air pollution control, could review and comment on an air quality analysis in a CEQA document, even though the project was not subject to an air permit or other air pollution control requirements.
Cumulative impact	Cumulative impacts represent the risks from all onsite sources and from sources near enough to the project to significantly contribute to the total risk levels.
Hot Spots Program	Health and Safety Code §44300-44394, Program which requires existing sources to inventory toxic emissions, prepare risk assessments, notify significantly exposed receptors, and prepare and implement risk reduction plans.
Lead Agency	A lead agency is the public agency that has the principal responsibility for carrying out or approving a project that is subject to CEQA. In general, the land use agency is the preferred public agency serving as lead agency, because it has jurisdiction over general land uses. The lead agency is responsible for determining the appropriate environmental document, as well as its preparation.

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Receptors	Receptors include sensitive receptors and worker receptors. Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses where sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (these sensitive land uses may also be referred to as sensitive receptors). Worker receptors refer to employees and locations where people work.
Responsible Agency	A responsible agency is a public agency, other than the lead agency, with discretionary approval authority over a project that is subject to CEQA (i.e., project requires a subsequent permit).
Risk Assessment	An evaluation that assesses the impact of toxic substances affecting receptors. A risk assessment can include minimal input parameters resulting in conservative results (screening risk assessment) or include increasingly detailed input parameters (refined risk assessment).
Source	A source is referred to as the locality where toxic emissions originate and are released into the atmosphere. Sources of emissions are categorized into groups such as point source (e.g., refinery) or line source (e.g., roadway).
Type A Project	Land use project that impacts receptors near the project.
Type B Project	Land use project with receptors that are impacted by nearby, existing toxics sources.

Acronyms

ARB:	California Air Resources Board
ATCM:	Air Toxic Control Measure
CAPCOA:	California Air Pollution Control Officers Association
CEQA:	California Environmental Quality Act
DPM:	Diesel Particulate Matter
EIR:	Environmental Impact Report
EPA:	U.S. Environmental Protection Agency
HRA:	Health Risk Assessment
OEHHA:	California Office of Environmental Health Hazard Assessment
PM:	Particulate Matter
REL:	Reference Exposure Level
TAC:	Toxic Air Contaminant
TBACT:	Toxic Best Available Control Technology

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Executive Summary

This guidance was prepared to assist Lead Agencies in complying with the requirements of the California Environmental Quality Act (CEQA)[1]. CEQA requires environmental impacts of a proposed project be identified, assessed, and avoided or mitigated (as possible) if these impacts are significant. To determine the impact of airborne toxic emissions [i.e., toxic air contaminants (TACs)] for CEQA purposes, health risk assessments must be prepared. This document describes when and how a health risk assessment should be prepared and what to do with the results.

In 2005, the California Air Resources Board (ARB) prepared the ***Air Quality and Land Use Handbook: a Community Health Perspective*** **(ARB Handbook)**[2], to help readers understand the potential cancer risks from some common sources of toxic emissions such as:

- Freeways and High Traffic Volume Roads,
- Goods Distribution Centers,
- Rail Yards,
- Ports,
- Refineries,
- Chrome Platers,
- Dry Cleaners using Perchloroethylene, and
- Gasoline Dispensing Facilities.

The ARB Handbook identified the potential cancer risks at various distances from these sources and recommended buffer distances between those sources and receptors.

Recent air pollution studies have shown an association between respiratory and other non-cancer health effects and proximity to high traffic roadways. Other studies have shown that diesel exhaust and other cancer-causing chemicals emitted from cars and trucks are responsible for much of the overall cancer risk from airborne toxics in California.

While local air districts have ample experience evaluating and mitigating toxic emissions from permitted stationary sources, most have limited experience preparing or reviewing risk assessments associated with multiple toxic sources or assessments for exhaust from mobile sources that are typically found when evaluating health risks to proposed land use projects.

In order to provide consistency to lead agencies, project proponents and the general public throughout the state, the California Air Pollution Control Officers Association (CAPCOA) formed a subcommittee composed of representatives from the Planning Managers Committee and the Toxic Risk Managers Committee to develop guidance on assessing the health risk impacts from and to proposed land use projects. This CAPCOA guidance document focuses on the acute, chronic, and cancer impacts of sources affected by CEQA. It also outlines the

[1] Title 14 California Code of Regulations, Chapter 3. Guidelines for Implementation of the California Environmental Quality Act.

[2] Air Quality and Land Use Handbook: a Community Health Perspective, CARB, April 2005, http://www.arb.ca.gov/ch/handbook.pdf

recommended procedures to identify when a project should undergo further risk evaluation, how to conduct the health risk assessment (HRA), how to engage the public, what to do with the results from the HRA, and what mitigation measures may be appropriate for various land use projects. With respect to health risks associated with locating sensitive land uses in proximity to freeways and other high traffic roadways, HRA modeling may not thoroughly characterize all the health risk associated with nearby exposure to traffic generated pollutants.

This guidance does not include how risk assessments for construction projects should be addressed in CEQA. As this is intended to be a "living document", the risks near construction projects are expected to be included at a later time as the toxic emissions from construction activities are better quantified. State risk assessment policy is likely to change to reflect current science, and therefore this document will need modification as this occurs.

1.0 Requirements to Evaluate Health Risks in CEQA

This guidance was prepared to assist Lead Agencies in complying with the requirements of the California Environmental Quality Act (CEQA)[3]. CEQA requires that environmental impacts of proposed projects be identified, assessed, avoided and/or mitigated (as possible) if the environmental impacts are significant.

Section 15126.2(a) requires the following: *"An Environmental Impact Report (EIR) shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected. For example, an EIR on a subdivision astride an active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision. The subdivision would have the effect of attracting people to the location and exposing them to the hazards found there."*

This language is included here to clearly show that risk assessments can be required for both projects that will impact nearby receptors (Type A), and projects that will be impacted by nearby sources (Type B).

[3] Pub. Resources Code § 21067; 14 Cal. Code Regs., §§ 15150, 15367.

2.0 Overview of the Process

Figure 1 shows an overview of the proposed Health risk Assessment (HRA) process. There are basically two types of land use projects that have the potential to cause long-term public health risk impacts:

Type A - Land use projects with toxic emissions that impact receptors, and
Type B - Land use project that will place receptors in the vicinity of existing toxics sources.

Type A project examples (project impacts receptors):

- combustion related power plants,
- gasoline dispensing facilities,
- asphalt batch plants,
- warehouse distribution centers,
- quarry operations, and
- other stationary sources that emit toxic substances.

Type B project examples (project impacted by existing nearby toxic sources):

- residential, commercial, and institutional developments proposed to be located in the vicinity of existing toxic emission sources such as:
  - stationary sources,
  - high traffic roads
  - freeways,
  - rail yards, and
  - ports.

The flowchart (Figure 1) shows how to proceed with the CEQA process when either a Type A or Type B related project is proposed. The following summarizes the process for proceeding through the flowchart:

- First determine if the project is categorically exempt from CEQA;
- Next, determine if the project is impacting, or being impacted (Type A or B);
- Using screening methods, calculate acute, chronic, and cancer risk;
- If the screening analysis indicates significant health risk as defined by the lead agency, demonstrate that risks will be mitigated with all feasible measures even though a refined risk assessment may show that less mitigation is needed;
- Or, conduct a refined screening risk assessment; and,
- If the risk continues to be deemed significant by the lead agency even with the refined screening, demonstrate that the risks will be adequately mitigated with feasible measures.

Air districts, in their role as either a responsible agency or a commenting agency, should review the HRA and communicate to the lead agency their evaluation of the risk assessment and whether it is fully described (e.g., methodology, assumptions and resulting risk values) and mitigated with all feasible measures.

Figure 1. Overview of Health Risk Assessment

3.0 Overview of Risk Assessment Methodology and Guidance Documents

This document bases the risk assessment methodology on the procedures developed by the California Office of Environmental Health Hazard Assessment (OEHHA) to meet the mandates of the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588). The Hot Spots program applies to stationary sources and requires affected facilities to prepare a toxic emissions inventory, and if the emissions are significant, that a risk assessment be prepared. The OEHHA procedures can be found at http://www.oehha.ca.gov/air/hot_spots/index.html and describe:

- The toxicity factors associated with various substances,
- How these toxicity factor are to be used to determine the acute, chronic, and cancer risks associated with downwind concentrations of chemicals in the air at various receptors, and
- Dispersion modeling procedures.

4.0 CEQA Exemptions

The first step in a risk analysis is to determine if the project is statutorily or categorically exempt from CEQA. There are no exceptions to statutorily exempt projects, however, certain projects that are categorically exempt under the state or air district guidelines, may emit toxic emissions or may be impacted by existing toxic sources. Table 1 shows the exceptions from categorical exemptions where an HRA evaluation is needed. These are situations where a project proponent or lead agency may not rely on a categorical exemption because the health risk may trigger an exception (CEQA §15300.2), preventing their use. In such cases, a negative declaration or environmental impact report should be prepared.

Table 1
Categorical Exemptions Requiring HRA Evaluation[4]

Categorical Exemption	Exempt Activity with *Possible Impact*
15301. Existing Facilities	This exemption also allows use of a single-family residence as a day care facility without CEQA review. *However, such uses near existing TAC emissions may warrant further review.*
15302. Replacement or Reconstruction	This exemption allows the replacement or construction of existing schools and hospitals in certain cases without CEQA review. *However, locating new facilities near existing TAC emissions may warrant further review.*
15303. New Construction or Conversion of Small Structures	This exemption class allows small new construction projects to proceed without CEQA review. *However, projects claiming this exemption should be reviewed for possible TAC impacts from ongoing nearby sources.*
15314. Minor Additions to Schools	This exemption class allows small school addition projects to proceed without CEQA review. *However, projects claiming this exemption should be reviewed for possible TAC impacts from ongoing nearby sources.*
15316. Transfer of Ownership of Land in Order to Create Parks	Exemptions in this class should be reviewed for *possible impacts from locating near ongoing sources of TAC.*
15332. In-Fill Development Projects.	This exemption class allows certain in-fill development projects to proceed without CEQA review. *However, projects claiming this exemption should be reviewed for possible TAC impacts from ongoing nearby sources such as high volume roadways and freeways.*

[4] Although methodology for assessing health risk for construction projects is not included in this document, lead agencies under CEQA are required to identify health risk from construction activities or projects and mitigate if they are deemed significant.

5.0 Screening Risk Assessments

Various tools already exist to perform a screening analysis from stationary sources impacting receptors (Type A projects) as developed for the AB2588 Hot Spots and air district permitting programs. Local air districts should be contacted for appropriate screening tools for proposed projects. Screening tools may include: prioritization charts, SCREEN3 and various spreadsheets.

For projects being impacted by existing sources (Type B projects), one screening tool is contained in the ARB Handbook[4]. The handbook includes a table (reproduced in these guidance documents as Table 2) with recommended buffer distances associated with various types of common sources. ARB's Handbook focuses on community health and provides important public health information to land use decision makers. In this document, ARB's primary goal is to provide information that will help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution.

For example, as shown in Table 2, ARB recommends avoiding siting new sensitive land uses such as residences, schools, daycare centers, playgrounds, or medical facilities within 500 feet of a freeway, urban roads with traffic volumes exceeding 100,000 vehicles/day, or rural roads with volumes greater than 50,000 vehicles/ day. Therefore, siting a residential project within 500 feet of a freeway, and the associated public health risks, should be disclosed as such in a CEQA document. Re-designing the project so that sensitive receptors are moved greater than 500 feet away from such roadways may mitigate the risk. Other non-sensitive land uses such as commercial uses may be sited in this area. ARB recommends that their guidelines be considered by the decision makers along with housing needs, economic development priorities, and other quality of life issues. It should also be noted that health risk assessments conducted on sensitive land uses in close proximity to freeways and other high traffic roadways may not thoroughly characterize all the health risk associated with nearby exposure to traffic generated pollutants.

Table 2
Recommendations on Siting New Sensitive Land Uses Such As Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities [5]

Source Category	Advisory Recommendations
Freeways and high-traffic roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles per day.
Distribution centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry cleaners using perchloroethylene	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perc dry cleaning operations.
Gasoline dispensing facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

[5]
- These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.
- Recommendations are based primarily on data showing that the air pollution exposures addressed here (i.e., localized) can be reduced as much as 80% with the recommended separation.
- The relative risk for these categories varies greatly. To determine the actual risk near a particular facility, a site-specific analysis would be required. Risk from diesel PM will decrease over time as cleaner technology phases in.
- These recommendations are designed to fill a gap where information about existing facilities may not be readily available and are not designed to substitute for more specific information if it exists. The recommended distances take into account other factors in addition to available health risk data (see individual category descriptions).
- Site-specific project design improvements may help reduce air pollution exposures and should also be considered when siting new sensitive land uses.
- This table does not imply that mixed residential and commercial development in general is incompatible. Rather it focuses on known problems like dry cleaners using Perchloroethylene that can be addressed with reasonable preventative actions.
- A summary of the basis for the distance recommendations can be found in the ARB Handbook.

6.0 Refined Risk Assessments

If a screening risk assessment shows that a risk is a concern, then a more refined analysis may be prepared. The refined analysis for the project may show lower risks, and provide more accurate information for decision makers. The screening assessment uses more conservative assumptions and thus gives higher risk than refined assessment. Risk assessments are normally prepared in a tiered manner, where progressively more input data is collected to refine the results. These guidelines include the evaluation of both mobile and stationary sources.

Attachment 1 to this document consists of the ***Technical Modeling and Risk Assessment Guidance*** which address various air quality dispersion modeling issues pertinent to California and is based primarily on information found in ARB, EPA and OEHHA guidance.

Appendix A, ***Meteorological Data,*** provides information on preparing meteorological data, mixing height and upper air data and land use characterization.

Appendix B, ***Modeling and Exposure Assessment Input and Output Data,*** is a checklist of parameters designed to provide an overview of all information that should be submitted for a refined air dispersion modeling assessment.

7.0 Risk Thresholds

An air district can set CEQA significant risk thresholds (e.g. the excess cancer risk shall be less than ten per million, the acute or chronic hazard index shall be less than one, or other significance levels as arrived at through a public process) that are used on a per-project basis. If the air district's governing board has adopted specific risk thresholds, the lead agency may choose to use them to determine acceptable risk levels. Additionally, clear risk thresholds are helpful when mitigation measures are necessary. The degree of mitigation can be clearly defined when a risk threshold has been determined before a project is proposed.

The absence of a risk threshold does not relieve an agency of its obligation to address toxic emissions from projects under CEQA. The implications of not having a threshold are different depending on the role the agency has under CEQA – whether it is acting as a commenting agency, as a responsible agency, or as a lead agency.

7.1 Significant Risk Thresholds - Type A (Impacting Sources)

For Type A projects, those that generate toxic air contaminants (such as gasoline stations, distribution facilities or asphalt batch plants), air districts are uniform in their recommendation to use the significance thresholds that have been established under each district's "Hot Spots" and permitting programs. For the majority of the air districts the **excess cancer risk** significance threshold is set at **10 in a million**. For toxic air contaminants with acute and chronic, non-carcinogenic health effect, a **hazard index of one** must not be exceeded. Depending on the substances being emitted, a project with a hazard index greater than one could result in adverse health effects of various sorts. It should be noted that a hazard index exceeding one may need additional analysis to determine whether the acceptable level of acute or chronic risk could be higher depending upon the safety factors that were incorporated into the reference exposure levels (RELs) associated with the hazard index results. This additional analysis could be considered an additional refinement tier.

It should be noted that these thresholds may be applied differently for air district permitting, the Hot Spots program, and CEQA. For air district permitting, the thresholds apply only to individual permit units. For the Hot Spots program, the thresholds apply to the entire facility excluding vehicle emissions. Neither the permitting programs nor the Hot Spots program apply to vehicle emissions. For CEQA, the thresholds apply to all facilities including vehicle emissions, and road related emissions.

7.2 Significant Risk Thresholds - Type B (Projects Impacted by Existing Sources)

For Type B projects, those that are impacted by existing sources, air districts are not uniform in their recommendation on what significance threshold should be adopted or what processes should be undertaken when disclosing potential risks.

The CEQA statutes encourage an air district or any lead agency to establish significance thresholds under CEQA for any pollutant. While there are considerations that support the establishment of thresholds, there is no obligation to do so. The absence of a threshold does not relieve agencies of their obligations to address toxic emissions from projects under CEQA. The implications of not having a threshold are different depending on the role the agency has under CEQA – whether it is acting in commenting agency, as a responsible agency, or as a lead agency.

An air district or other lead agency may elect not to establish significance thresholds for a number of reasons.

A lead agency or air district may also determine there is insufficient information to support selecting one specific threshold over another. Air districts have historically recommended CEQA thresholds for air pollutants in the context of the air district's clean air attainment plan, or (in the case of toxic air pollutants) within the framework of a rule or policy that manages risks and exposures due to toxic pollutants.

Significance levels have been approached differently by air districts as enumerated below:

- Thresholds can be based on a specific risk level such that a 10 per million excess cancer risk and an acute and chronic hazard index of one should not be exceeded. These thresholds tend to be consistent with the Hot Spot Program thresholds.
- Thresholds can also be based on the region's existing background cancer risk value if one exists.
    - One option is to establish a risk level equal to a region's background risk level.
    - Another option is to establish a risk level equal to twice a region's background risk level.
    - Still another option is to look at the ambient risk in the immediate vicinity of the project area rather than the regional risk level.
- Case by case thresholds may also be defined.

8.0 Mitigation Measures

CEQA requires that adverse environmental impacts of a proposed project be identified, assessed, avoided, and, if deemed significant, mitigated (as feasible) to a level that is considered less than significant. "'Feasible' means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors" (CEQA Guidelines §15364).

In cases where significant adverse impacts are not avoided or substantially lessened, the public agency may approve the project if it first adopts a "statement of overriding considerations." The statement of overriding considerations sets forth the specific reasons why the public agency found the project's benefits outweigh its unavoidable adverse environmental effects (CEQA Guidelines§15043).

In addition to being a CEQA requirement, mitigating public exposure to toxic air pollution is needed to achieve air district goals. All potentially significant emission sources must be mitigated to the greatest extent feasible, including placing people out of harm's way.

Table 3 presents mitigation measures that are currently considered to be feasible to reduce health risk from both Type A and Type B projects. The mitigation measures included in the table are not considered to be exhaustive. The lead agency and project proponents are encouraged to think creatively in devising measures to mitigate air quality impacts. However, the air districts recognize that the final determination of feasibility for a project will be determined by the lead agency. Aside from the mitigation measures shown below, knowing about the regulatory programs to reduce air pollutant emissions through statewide strategies provide information to local air districts and lead agencies to help assess and mitigate cumulative air pollution impacts as well.

8.1 Mitigations due to Air Toxic Control Measures

ARB has been developing Air Toxic Control Measures (ATCMs) for many years. Many of these measures have a phase-in schedule. Implementation of others has already been completed. While cancer and non-cancer risks from the air toxic sources implementing ATCMs are expected to decrease with time, the Office of Environmental Health Hazard Assessment (OEHHA) recommends that it is inappropriate to assume these yet-to-be realized emissions reductions in a health-risk assessment. However, the project proponent is encouraged to become familiar with existing and proposed ATCMs in order to determine if any of the ATCMs affect project-specific emissions.

8.2 Mitigating Through Land Use and Design

To a certain extent, the long-term air quality impact of a project is a function of its design. The layout of streets, the mix of land uses, and the placement of homes and businesses can all affect overall project emissions. Yet in many instances, the air quality impacts of a project are not considered until well after a project has been designed. At such a late stage, it can be very difficult to make any substantial changes to the project to reduce the project's air quality impact.

As indicated throughout the ARB Handbook, land use agencies are strongly encouraged to consult early and often with local air districts. Including air quality considerations during the initial design phase can help an applicant to implement design features that will reduce its air quality impact.

In addition to considering the suitability of the project location, opportunities for mitigation of air pollution impacts through design should be considered. In some cases, control devices and changes in processes may be implemented at the source in order to reduce the risk from toxic air contaminant emissions. Examples of land-use based air quality specific performance standards include the following:

- Placing a process vent away from the direction of nearby receptors, or increasing the stack height so that emissions are dispersed to reduce the emissions impact on the immediate surroundings.
- Limiting the hours of operation of a facility to avoid excess emissions exposure to nearby individuals.
- An ordinance that requires fleet operators to use cleaner vehicles before project approval (if a new business), or when expanding the fleet (if an existing business).
- Providing alternate routes for truck operations that discourage detours into sensitive receptor neighborhoods.

While such measures may reduce the dimensions of a buffer zone, they do not obviate the need to maintain buffer zones to protect public health and safety. This is particularly true in situations where a sensitive receptor is encroaching on an existing source of toxic air contaminant. Also note disclosure statements, community alert procedures, etc., that are targeted at potential receptors are not appropriate mitigations to be used in lieu of buffer zones or technical controls.

Table 3 below contains examples of both project and program-level mitigation measures.

- Project-level mitigation measures are applicable to development which results in the implementation or modification of a land use which creates unacceptable levels of risk. Examples include redesigning the project to locate receptors away from TAC sources, the installation of barriers and/or vegetation and indoor air filtration.

- Program-level mitigation measures, on the other hand, are applicable to long-range community planning such as General Plans, and address land use incompatibility at a much earlier stage. Examples of program-level mitigation measures include rezoning vacant land adjacent to high-volume roadways, ports, railroads or heavy industry to avoid future proposed siting of residential and/or sensitive receptors.

8.3 Mitigation Effectiveness

The mitigation measures identified in Table 3 include both quantifiable and unquantifiable measures.

8.3.1 Quantifiable Mitigation Measures

The effect of quantifiable mitigation measures can be modeled or calculated beyond a reasonable doubt. As pertaining to health risk impacts, quantifiable mitigation measures generally result in a measurable reduction of toxic air contaminant emissions (such as DPM), or a measurable decrease in exposure to such emissions through increased buffer distances, reduced exposure durations or control devices having a certified control effectiveness.

Examples of quantifiable mitigation measures include:

- Diesel particulate filters: as of 2008, DPFs reduce the emissions of diesel particulate matter up to 85% as verified by the CARB.
- Increasing the distance between a TAC source and receptor may reduce the receptor's level of exposure to TACs; the effect of this mitigation measure can be estimated through dispersion modeling;
- Idling restrictions can greatly reduce or completely eliminate DPM emissions from stationary trucks; if such restrictions are quantitative and include a concrete limit on the number of minutes a truck (or similar) is allowed to idle, the benefits of this mitigation measure can be modeled.

Several cautionary notes regarding estimating the effectiveness of mitigation measures are warranted:

- Clearly explain the assumptions underlying the environmental document's analysis of mitigation measure effectiveness. The analysis should specifically describe the mitigation measure, identify the source(s) of air pollutants that are expected to be affected by the measure, clearly explain how and to what extent the measure will affect the source(s), and identify the basis for the estimate (empirical observations, computer modeling, case studies, etc.). Critical assumptions should be linked to the mitigation monitoring and reporting program.

- Be specific regarding implementation of mitigation measures. The environmental document should describe each mitigation measure in detail, identify who is responsible for implementing the measure, and clearly explain how and when the measure will be implemented. Methods for assessing the measure's effectiveness once it is in place, and possible triggers for additional mitigation if necessary, may be needed. This level of detail regarding mitigation measure implementation frequently is not addressed until the preparation of the mitigation monitoring and reporting program, which often takes place very late in the environmental review process. In order to reliably assess the effectiveness and feasibility of mitigation

measures, however, air agencies believe it is necessary to consider the specifics of mitigation measure implementation as early in the environmental review process as possible.

- Be sure not to double count the effect of proposed mitigation measures. The project description and assumptions underlying the analysis of project impacts should be carefully considered when estimating the effect of mitigation measures. If certain conditions or behavior are assumed in the impact analysis, then credit may not be claimed when proposing mitigation measures.

- Health risk assessments discussed in this document estimate outdoor risk. While some mitigation measures may reduce risks by filtering outdoor air to be used indoors, they do nothing to reduce the risk assessment values for outdoor air.

8.3.2 Unquantifiable Mitigation Measures

In some cases, it simply may not be possible to quantify the effect of proposed mitigation measures. It may be that the specific conditions surrounding a particular project are so unique as to render extrapolation from other examples unreliable. A proposed measure may be innovative, with little precedent. The combined effects of a package of measures may be too difficult to quantify. While a certain degree of professional judgment is usually involved in estimating the effectiveness of mitigation measures, speculative estimates should be avoided. If the project proponent cannot quantify mitigation effectiveness with a reasonable degree of certainty, the environmental document should at least address effectiveness qualitatively. If the lead-agency makes a finding that non-quantified mitigation measures reduce an impact to a level of insignificance, the document should provide a detailed justification of that conclusion.

8.3.2.1 Effects of Vegetation Next to Roadways

The Sacramento Air District funded a study to measure the removal rates of particulate matter passing through leaves and needles of vegetation. Particles were generated in a wind tunnel and a static chamber and passed through vegetative layers at low wind velocities. Redwood, deodar cedar, live oak, and oleander were tested. The results from this study indicate that all forms of vegetation able to remove 65-85 percent of very fine particles at wind velocities below 1.5 meters per second (roughly 3 miles per hour) with redwood and deodar cedar being the most effective.

This study supports the effectiveness of planting finely needled trees along sources of toxic particulate matter as an air toxics mitigation measure. Though further studies that reflect actual roadway conditions are needed to better quantify the real-world effectiveness of this mitigation measure, projects that propose sensitive receptors adjacent to sources of particulate matter such as freeways, major roadways, rail lines, and rail

yards should consider tiered plantings of redwood and/or deodar cedar in order to reduce toxic exposures.

8.3.2.2 No Idle Zone

California law currently places restrictions on idling of heavy-duty diesel motor vehicles to reduce health risk impacts from diesel emissions. The 2003 school bus idling airborne toxic control measure (ATCM) requires a driver of a school bus or vehicle, transit bus, or other commercial motor vehicle to manually turn off the bus or vehicle engine upon arriving at a school and to restart no more than 30 seconds before departing. A driver of a school bus or vehicle is subject to the same requirement when operating within 100 feet of a school and is prohibited from idling more than five minutes at each stop beyond schools, such as parking or maintenance facilities, school bus stops, or school activity destinations.

California's more recent anti-idling regulations (with some exemptions) require that drivers of diesel-fueled commercial vehicles weighing more than 10,000 pounds:

- Shall not idle the vehicle's primary diesel engine for greater than 5 minutes at any location,
- Shall not use diesel-fueled auxiliary power units for more than 5 minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle equipped with a sleeper berth, at any location.

Lead agencies may place additional requirements on heavy duty diesel delivery and haul trucks less than 10,000 pounds, and create "no idle" zones at locations where there is a potential for significant health risk. It may not be possible to quantify the emission reductions associated with the creation of a no idling zone. However, this feasible mitigation measure may eliminate idling emissions and may avoid potentially significant health risk impacts.

Table 3
Mitigation Measures

Source Category	Mitigation Measure (listed in order of effectiveness by category)
Stationary Sources Type A (Sources Impacting receptors) (e.g., Auto body shops, Gas Stations, Manufacturers, Metal Platers, Chemical Producers, Rock Quarries, Incinerators, Power Plants, Diesel Engines)	1. Move source location to provide effective buffer zone. 2. Reduce throughput. 3. Install Toxic Best Available Control Technology (TBACT) to reduce the risks to below significance. 4. Install other than TBACT air pollution control devices or process operation modifications. 5. Address Diesel vehicle engines as listed below.

Source Category	Mitigation Measure (listed in order of effectiveness by category)
Onsite Diesel Truck Activities (including transport refrigeration units)	Idling Mitigation Measures: 1. Move source location to provide effective buffer zone. 2. Establish truck parking restrictions. 3. Provide utility hook-ups for trucks that need to cool their load. 4. Limit truck idling to <5 minutes (State law limits to 5 minutes of idling, and includes various exemptions). 5. Require Trucks to operate an Auxiliary Power Unit. 6. Require the installation of electrical hookups at loading docks and the connection of trucks equipped with electrical hookups to eliminate the need to operate diesel-powered TRUs at the loading docks. Onsite Truck Traveling Emissions: 1. Move source location to provide effective buffer zone. 2. Restrict operation to 2007 model year or newer trucks. 3. Require or provide incentives to use Diesel Particulate Filters for truck engines. 4. Re-route truck traffic by adding alternate access for truck traffic or by restricting truck traffic on certain sensitive routes. 5. Improve traffic flow by signal synchronization. 6. Implement incentive for improved communications of fluctuating demand forecasts for labor and equipment among carriers and operators.
High-traffic road vehicle emissions impacting adjacent receptors	1. Move receptors or source to provide effective buffer zone between the source and the receptor. 2. Improve traffic flow by signal synchronization. 3. Plant vegetation between receptor and roadway. 4. Construct wall barriers between receptor and roadway. 5. Install newer electrostatic filters in adjacent receptor buildings. 6. Fund "clean" street sweepers. 7. Improve road infrastructure to facilitate improved traffic flow without inducing capacity. 8. Improve alternative transportation options
Freeway vehicle emissions impacting adjacent receptors	1. Move receptors or source to provide effective buffer zone between the source and the receptor. 2. Plant vegetation between receptor and roadway. 3. Construct wall barriers between receptor and roadway. 4. Install newer electrostatic filters in adjacent receptor buildings. 5. Improve road infrastructure to facilitate improved traffic flow.
Marine Vehicles (e.g., recreational boating, commercial marine operations, hoteling operations, loading and unloading services)	1. Move receptors or source to provide effective buffer zone between the source and the receptor. 2. Require or provide incentives to install add-on Diesel Particulate Matter control devices or cleaner engines or boilers. 3. Require use of electric power when berthed. 4. Require cleaner fuels. 5. Limit vessel speed.

Source Category	Mitigation Measure (listed in order of effectiveness by category)
Railroad (i.e., switch yards, maintenance yards, intermodal centers)	1. Move receptors or source to provide effective buffer zone between the source and the receptor. 2. When ambient temperatures are above 50 deg F, minimize locomotive engine idling by shutting down and re-starting engines. 3. Require Idle Reduction Technologies - The rail industry has developed and designed a new Auxiliary Power Unit (APU) system that provides power during idling conditions and shuts down the main locomotive engine. Installing APU system reduces locomotive PM emissions by 84 percent. 4. Require new engine technologies be applied to the engines - Modifying fuel injectors, which includes fuel injection pressure, fuel spray pattern, injection rate and timing, has been found to reduce emissions from locomotive diesel engines. 5. Require hybrid switcher locomotives. 6. Require use of locomotive technology that meets or exceeds the latest EPA emission regulations for locomotives. 7. Apply the 1998 Railroad MOU for South Coast Air Basin. 8. Apply the 2005 Statewide MOU for Rail Yard Risk Reduction.

8.4 Mitigation Monitoring and Reporting

8.4.1 Primary Mitigation Measures

As part of CEQA environmental review procedures, Pubic Resources Code Section 21081.6 requires a public agency to adopt a monitoring and reporting program for assessing and ensuring efficacy of mitigation measures applied to the proposed project. Specifically, the lead or responsible agency must adopt a reporting or monitoring program for mitigation measures incorporated into a project or imposed as conditions of approval. The program must be designed to ensure compliance during project implementation. As stated in Public Resources Code, Section 21081.6 (a) (1):

"The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes which have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead agency or a responsible agency, prepare and submit a proposed reporting or monitoring program."

This requirement is intended to assure that mitigation measures included as conditions of project approval are indeed implemented. A mitigation monitoring and reporting program should include the following components:

- A description of each mitigation measure adopted by the Lead Agency.
- The party responsible for implementing each mitigation measure.
- A schedule for the implementation of each mitigation measure.
- The agency or entity responsible for monitoring mitigation measure implementation.
- Criteria for assessing whether each measure has been implemented.
- Enforcement mechanism(s).

The mitigation monitoring and reporting program is not required to be included in the environmental document, but its inclusion will encourage the Lead Agency and other entities to specifically consider the feasibility and effectiveness of each mitigation measure while the environmental analysis is still underway. If a responsible agency or any agency having jurisdiction over natural resources affected by the project proposes mitigation measures, the Lead Agency may require that agency to prepare a monitoring and reporting program for those mitigation measures.

8.4.2 Contingency Mitigation Measure

A mitigation implemented to reduce health risk for a particular project may degrade or fail over time. Continuous monitoring and enforcement programs are recommended to ensure the ongoing effectiveness of all mitigation measures over the project life. In the instance that one or more mitigation measures fail or become ineffective, they should be replaced with mitigation measures of equal or greater effectiveness.

Examples of health risk mitigation measures subject to degradation and/or failure include:

- Vegetation barriers, which may die due to natural causes or lack of upkeep;
- Particulate filters, which may become clogged, mechanically damaged or simply reach the end of their design life; and,
- Indoor air filtration systems, which may become clogged or fail completely due to lack of regular maintenance.

9.0 Public Participation

As emphasized in the ARB Handbook, community involvement is an important part of the overall land use approval process. Public participation is critical when proposed projects could create increased health risk to the individuals or the community. To that extent, engaging community members during the initial phase of the project evaluation process provides a communication conduit between impacted individuals, project proponents and the decision makers. This dialog aims to expand the community's overall understanding of the risk assessment process and the resulting health impact values. While the air district is not typically the lead agency for a project undergoing health risk evaluation, it plays a critical role in working with the impacted community to explain the technical modeling tools and assumptions used to calculate the overall risk values that are ultimately provided to local decision makers for approval action.

Active public participation requires engaging individuals in ways that do not require prior knowledge of air pollution issues impacting their communities. Information should be provided to illustrate how a land use decision can affect the health of the community due to emission impacts from Type A or to Type B projects. Due to the overly technical nature of health risk assessments, air districts need to take specific efforts to develop messages and outreach tools that will assist to convey complex issues to a non-technical community. The outreach process needed to build effective community participation requires data, methodologies and formats customized to the needs of the specific community. Depending on the community characteristics cultural barriers, such as translation to another language, need to be assessed prior to conducting community outreach. More importantly, it requires the strong collaboration of community members and agencies that review and approve projects and land uses of the local community.

The ARB Handbook's Table 7-1, Public Participation Approaches includes some general outreach strategies that air districts might consider in designing an outreach program to increase understanding of the air pollution impacts to specific land use projects. Such a program could consider the preparation and presentation of information in a way that supports sensible decision-making and public involvement. In order to build community trust in the health risk assessments being conducted for proposed development, public participation should occur at the initial phases of project evaluation and continue throughout the approval process.

10.0 HRA Issues in the CEQA Process

There are number of issues that have been encountered at the local decision making level that present challenges during the evaluation of health risk impacts from proposed land use projects. To provide more assistance to air districts, lead agencies and community members on how to overcome these challenges, this chapter outlines a few issues that have been encountered during the project evaluation phase, as well as potential solutions to reduce health risk, minimize errors and assist decision makers in their final action.

10.1 Smart Growth

Land use planners, developers, public health agencies and environmentalists alike all struggle with the apparent dichotomy between the public health benefits of limiting development adjacent to freeways and major roadways, and the public health benefits of smart growth strategies which call for development closer in to the urban core, often adjacent to major travel corridors, as a way to reduce overall emissions. Guidance that helps local planners disclose potential risk, and/or seeks to limit development adjacent to freeways and major roadways appears to conflict with smart growth policies, especially when the guidance affects small projects.

A potential solution to this dilemma is the identification and implementation of effective mitigation measures that will help reduce impacts to sensitive receptors, thereby supporting smart growth policies. Table 3 contains program-level TAC mitigation measures. Such measures are applicable to long-range community planning programs such as General Plans and address land use incompatibility at an early stage. These measures are particularly effective in that they can prevent many high-risk projects from being considered or proposed in the first place, thereby eliminating the necessity for project-level mitigation which may not always be feasible or sufficiently effective. Examples of program-level mitigation measures include rezoning vacant land adjacent to freeways, high-volume roadways, ports, railroads or heavy industry to avoid future proposed siting of residential and/or sensitive receptors.

10.2 Less than Lifetime Cancer Risk Exposures

The standard OEHHA 70 year exposure timeframe for HRAs is often vigorously challenged as to whether it is reasonable to base residential cancer risk on a 70 year, 24 hour per day, seven day per week exposure. A 70-year lifetime exposure is a worst-case assumption. Shorter exposure periods can be appropriate depending on the situation. The cancer risks caused by projects impacting offsite workers can be factored in accordance with guidance provide in the State Office of Environmental Health Hazard Assessment provided a document called the *Air Toxic Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments*, August 2003. This guidance document also describes how the exposure period can be reduced from 70 year to shorter periods for Type A projects that will operate for periods less than 70 years. This information is also included in the ***Technical Modeling and Risk Assessment Guidance*** component of this document in Attachment 1.

10.3 Mitigating Roadway Toxics

As discussed above, lead agencies often struggle with requiring mitigation when, due to a lack of a threshold, the roadway toxics impacts are not considered "significant." At other times, lead agencies are eager to require mitigation, but feel most comfortable being able to point to studies that quantify the actual mitigation levels before asking project proponents to bear the additional costs of the mitigation. In addition, lead agencies often do not feel comfortable asking a project to make changes via implementing mitigation when the project complies with existing zoning requirements and does not request exemptions. While this is a contentious issue, districts may choose to suggest mitigation measures regardless of whether a health risk determination was made by the lead agency.

10.4 Existing Background Risk

Often, environmental documents with site specific HRAs contain lengthy discussions comparing a project's health risk to the existing background health risk levels, and often, potential project-specific cancer risk levels are expressed as a percentage of the existing background risk without disclosure of the actual additional risk due to the project. It is the actual additional risk due to the project (Type A), or the risk to the project (Type B) that must be disclosed and compared to CEQA significance thresholds.

10.5 Inappropriate Discounting of Risks

Standardized health risk assessment methodologies have been developed to reduce inconsistencies between HRAs and aid in comparing impacts on receptors. However, in practice inappropriate HRA calculations are still carried out and presented as the basis for public disclosure and notification. Such inappropriate HRA calculations are most often made in an attempt to present reduced risk values compared to the higher results produced by standard methodologies. This is a significant concern, especially with respect to health risks associated with locating sensitive land uses in proximity to freeways and other high traffic roadways, where even the standardized HRA modeling methods may not thoroughly characterize all the health risk associated with nearby exposure to traffic generated pollutants.

Inappropriate HRA methodologies often result in protracted controversy, which is sometimes played out in the public arena - for example, at project approval hearings. To minimize these situations, the HRA preparer should adhere to the standard risk calculation methodologies set forth by OEHHA, the Air Resources Board, and the local air district, and as described in this document.

Examples of some mistakes to avoid are described in the following paragraphs.

- One inappropriate calculation is to calculate the cancer risk using the 70-year exposure timeframe, but then reduce the risk values by dividing the risk values by the number of receptors in the subdivision. Doing so is misleading and not scientifically supported. Potential cancer risk should be expressed as probability per million, based upon OEHHA recommendations.

- For Type A projects, it is also inappropriate to present risk values as a percentage of some existing risk value, such as the existing background risk. Often this is done in an attempt to persuade readers that the project specific risk is of little consequence because the increased risk is small compared to the background risk. In cases where project specific risk is compared to other risks or expressed as a percentage of the existing background, it should be made clear that the project specific risk is in addition to the existing background risk.

- Another inappropriate calculation sometimes included in risk assessments is to base emissions on emission factors that may result from future actions, such as emission reduction rules that have not yet gone into effect, or expected emission reductions due to expected market forces.

10.6 Misleading Comparison of Cancer Risks

Comparing cancer risks can be misleading in a CEQA document. Some CEQA documents discuss a variety of cancers and the prevalence of it in our population. It's sometimes stated, for example, that currently throughout the United States, one in three or four persons will experience cancer sometime during their lifetime. This can be a misleading statistic if it is used to imply that the incremental probability of increased cancer cases due to toxic airborne emissions are very small compared to the overall probability of cancer. For example, a Health Risk Assessment may find that the increased probability of cancer cases is 200 in one million for certain sensitive receptors located near a busy freeway. To compare that HRA result with the overall population's cancer incidence would discount the risk unfairly. The CEQA document should disclose the risk without any such comparisons.

10.7 "Experts Disagree"

When project proponents submit HRAs and related materials that are developed via methodologies not supported by the air district or OEHHA, protracted controversy can result. One air district noted that, despite comment from OEHHA and ongoing district comments on the inappropriate discounting of a project's HRA results, those results remained unchanged in the Final EIR. The Final EIR discussed the nature of the disagreement, citing Section 15151 of the CEQA Guidelines which states that disagreement among experts "does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among experts." Ultimately, the lead agency will make a land use decision based on their understanding. But for sources that need an air district permit, the applicable air district's risk assessment procedures will apply.

11.0 Conclusion

The study of the impact of toxic air emissions on sensitive receptors is an evolving one. Air districts in the state of California generally have had a consistent way of performing health risk assessments of stationary sources on nearby sensitive receptors (Type A projects). However, with the publication in 2005 of ARB's Handbook, the issue of the effect of mobile sources on sensitive receptors (Type B projects) required air districts to augment their guidance. This CAPCOA guidance reflects the fact that currently, the various air districts in the state have different approaches to the topic. For example, some districts have developed a threshold of significance for these projects and some have not. Despite these differences, this document offers some common guidance about the need to analyze the impacts, to disclose the risk to decision makers and to mitigate it. As health risk analysis tools, methodology, and protocol as developed, the document will be revised.

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EXHIBIT 3

O-MBA20L7

CEQA
Air Quality Handbook

A GUIDE FOR ASSESSING
THE AIR QUALITY IMPACTS
FOR PROJECTS SUBJECT TO CEQA REVIEW

April 2012

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LIST OF ACRONYMS

ACM	Asbestos Containing Material
ADT	Average Daily Trips
APCD	San Luis Obispo County Air Pollution Control District
APS	Auxiliary Power System
ARB	California Air Resources Board
ATCM	Air Toxics Control Measure
BACT	Best Available Control Technology for Construction Equipment
CAAA	1990 Clean Air Act Amendments
CAMP	Construction Activity Management Plan
CAP	Clean Air Plan for San Luis Obispo County
CAPCOA	California Air Pollution Control Officers Association
CEQA	California Environmental Quality Act
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CO2	Carbon Dioxide
DEIR	Draft Environmental Impact Report
DOC	Diesel Oxidation Catalyst
DPM	Diesel Particulate Matter
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
GHG	Greenhouse Gases
HRA	Health Risk Assessment
ITE	Institute of Transportation Engineers
LNG	Liquid Natural Gas
NESHAP	National Emission Standard for Hazardous Air Pollutants
NOA	Naturally Occurring Asbestos
NOP	Notice of Preparation
NO_x	Oxides of Nitrogen
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter (less than 2.5 µm)
PM_{10}	Particulate Matter (less than 10 µm)
ROG	Reactive Organic Gases
SLO	San Luis Obispo
TAC	Toxic Air Contaminant
VDECS	Verified Diesel Emission Control Systems
VMT	Vehicle Miles Traveled

GLOSSARY

Climate Change: Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gases (GHGs), particularly those generated from the human production and use of fossil fuels.

Diverted Trips: Diverted linked trips, as defined by Institute of Transportation Engineers (ITE), are attracted from the traffic volume on a roadway within the vicinity of the generator but require a diversion from that roadway to another roadway to gain access to the site.

Fugitive Dust: Small particles which are entrained and suspended into the air by the wind or external disturbances. Fugitive dust typically originates over an area and not a specific point. Typical sources include unpaved or paved roads, construction sites, mining operations, disturbed soil and tilled agricultural areas.

Greenhouse Gas: The emissions that contribute to the climate change effect are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFC), chlorofluorocarbons (CFC) and sulfur hexafluoride (F6S).

Ozone Precursors: Gaseous compounds needed to form ozone by the process of photochemistry. Photochemical air pollution (primarily ozone) is produced by the atmospheric reaction of organic substances, such as reactive organic gases (ROG) and nitrogen dioxide (NO_2) under the influence of sunlight.

$NO_2 + ROG + Sunlight => O_3$

During the summer, in areas with high emissions and high ozone concentrations, ozone concentrations are very dependent on the amount of solar radiation. Ozone levels typically peak in the late afternoon, at the end of the longest period of daily solar radiation. After the sun goes down, the chemical reaction between nitrous oxide and ozone begins to dominate and ozone usually decreases.

$O_3 + NO => NO_2 + O_2$

In some remote rural locations away from emission sources, ozone concentrations can remain high overnight because there are no NO sources to react with the existing ozone.
Ozone precursors are typically considered to be the combination of ROG + NO_x.

Particulate Matter: Small particles that become airborne and have the potential to cause adverse health impacts. There are three general size components: 1) PM or Total Suspended Particulate (TSP) which includes all airborne particles regardless of size or source; 2) PM_{10} which includes airborne particles 10µm in size and smaller; and 3) $PM_{2.5}$ or fine airborne particles 2.5µm and smaller.

Primary Trips: Trips made for the specific purpose of visiting the proposed facility.

Passby Trip: Trips made as an intermediate stop on the way from an origin to a destination without a route diversion.

Sensitive Receptors: Sensitive receptors are people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). The location of sensitive receptors is needed to assess toxic impacts on public health.

Smart Growth: Smart or strategic growth is an urban planning and transportation theory that concentrates growth in the center of a city to avoid urban sprawl; and advocates compact, transit-oriented, walkable, bicycle-friendly land use, including neighborhood schools, complete streets, and mixed-use development with a range of housing choices.

Verified Diesel Emission Control Strategy: Diesel vehicle or equipment exhaust retrofits that have been verified by the California Air Resources Board (ARB) that provide specified diesel particulate emission reductions when implemented in compliance with the ARB executive order for the device (www.arb.ca.gov/diesel/verdev/verdev.htm).

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CEQA
Air Quality Handbook

GUIDE FOR ASSESSING THE AIR QUALITY IMPACTS FOR PROJECTS SUBJECT TO CEQA REVIEW

The purpose of this document is to assist lead agencies, planning consultants, and project proponents in assessing the potential air quality impacts from residential, commercial and industrial development. It is designed to provide uniform procedures for preparing the air quality analysis section of environmental documents for projects subject to the California Environmental Quality Act (CEQA). These guidelines define the criteria used by the San Luis Obispo County Air Pollution Control District (APCD or Air District) to determine when an air quality analysis is necessary, the type of analysis that should be performed, the significance of the impacts predicted by the analysis, and the mitigation measures needed to reduce the overall air quality impacts. The use of this document will simplify the process of evaluating and mitigating the potential air quality impacts from new development in San Luis Obispo County.

For further information on any of the topics covered in this handbook, review the APCD's website at www.slocleanair.org or contact us directly at (805) 781-5912.

1 PROJECTS REQUIRING AIR QUALITY REVIEW AND ANALYSIS

The Air District has permit authority over many "direct" sources of air contaminants, such as power plants, gasoline stations, dry cleaners and refineries. Indirect sources are contributors to air pollution and include facilities and land uses which may not emit a significant amount of pollution themselves, but are responsible for indirect emissions, such as:

- Motor vehicle trips attracted to or generated by the land use;
- On-site combustion of natural gas, propane and wood for heating;
- Architectural coatings and consumer products; and,
- Landscape maintenance.

Emission impacts from both direct and indirect sources are typically identified and, if needed mitigated through the land use planning process under the guidelines and statutes of CEQA.

1.1 ROLE OF THE SLO COUNTY APCD

Under CEQA, the SLO County APCD may act as a **lead, responsible or commenting agency**, reviewing and commenting on projects which have the potential to cause adverse impacts to air quality. The CEQA statutes and guidelines require lead agencies to seek comments from each responsible agency and any public agency that have jurisdiction by law over resources that may be affected by a proposed project (CEQA 21153 and 15366). For many development proposals, this typically involves projects where vehicle trip generation is high enough to cause or contribute to local emission levels capable of hindering the APCD's efforts to attain and maintain health-based air quality standards. It is in this context that local jurisdictions and planning bodies can make critical decisions that affect their future environment and that of neighboring communities as well.

Offshore activities within State waters, such as oil drilling and production, harbor dredging and cable installation are also subject to CEQA review and possible APCD permits depending on the nature of the activity.

1.2 PROJECTS SUBJECT TO AIR QUALITY ANALYSIS

In general, any proposed project with **short-term construction** emissions or **long-term operational** emissions that may exceed an APCD threshold of significance, as identified in this Handbook, should be submitted to the SLO County APCD for review. If needed, the APCD will assist in refining impact evaluations and or appropriate mitigation measures. The project will be evaluated to determine the potential for significant air quality impacts, with further analysis or mitigation recommended if appropriate. Types of projects which generally fall into this category include:

- Discretionary Permits;
- Tract Maps;
- Development Plans;
- Site Plans;
- Area Plans;
- Specific Plans;
- Local Coastal Plans;
- General Plan Updates and Amendments;
- Large residential developments;
- Large commercial or industrial developments; and
- Remediation projects.

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The environmental documents associated with these types of projects and reviewed by the APCD include Initial Studies, Notices of Preparation (NOP), Negative Declarations, and Environmental Impact Reports (EIR), and other environmental documents prepared pursuant to CEQA and NEPA.

1.3 PROJECT INFORMATION NEEDED FOR SLO COUNTY APCD REVIEW

Early consultation with the APCD can ensure the environmental document adequately addresses air quality issues. In order to facilitate our review of the proposed project, the following information should be provided:

- Complete and accurate project description;
- Emission calculations for both construction and operational phase emissions;
- Relevant environmental documents, including draft EIRs, Initial Studies, Negative Declarations, etc;
- Other technical analyses that relate to air quality, including but not limited to traffic analyses, growth impact projections, land use elements, maps, health risk assessments, sensitive receptor locations etc; and,
- Mitigation Monitoring Program, if applicable.

1.4 OPERATIONAL SCREENING CRITERIA FOR PROJECT IMPACTS

General screening criteria used by the SLO County APCD to determine the type and scope of projects requiring an air quality assessment, and/or mitigation, is presented in Table 1-1. These criteria are based on project size in an urban setting and are designed to identify those projects with the potential to exceed the APCD's significance thresholds. Operational impacts are focused primarily on the indirect emissions (i.e., motor vehicles) associated with residential, commercial and industrial development.

Table 1-1 is based on ozone precursor and greenhouse gas (GHG) emissions and is not comprehensive. It should be used for general guidance only. This table is not applicable for projects that involve heavy-duty diesel activity and/or fugitive dust emissions. A more refined analysis of air quality impacts specific to a given project is necessary for projects that exceed the screening criteria below or are within ten percent (10%) of exceeding the screening criteria.

Table 1-1: Operational Screening Criteria for Project Air Quality Analysis[1, 2]

Land Use	Unit of Measure	Size of Urban/(Rural) Project Expected to Exceed the APCD Annual GHG Bright Line Threshold [3] of:	Size of Urban/(Rural) Project Expected to Exceed the APCD Daily Ozone Precursor Significance Threshold [4] of:
		1150 MT CO2e/year from Operational & Amortized Construction Impacts	25 lbs ROG+NOx/Day from Operational Impacts
COMMERCIAL			
Bank (with Drive-Through)	1,000 SF	25	17
General Office Building		70	91
Government (Civic Center)		37	38
Government Office Building		26	21
Hospital		31	50
Medical Office Building			36
Office Park			85
Pharmacy/Drugstore w/o Drive Thru			24
Pharmacy/Drugstore with Drive Thru			25
Research & Development		93	114

This table has been updated, July 2014. The revised version can be located on our web site by clicking **HERE**.

EDUCATIONAL [5]			
Day Care Center	1,000 SF	39	26
Elementary School		69	62
High School		62	61
Junior High School		72	65
Library		24	23
Place of Worship		77	44
Junior College (2yr)	Students	1070	1032
University/College (4yr)		464	487
INDUSTRIAL [6]			
General Heavy Industry	1,000 SF	53	311
General Light Industry		23	103
Industrial Park		36	113
Manufacturing		44	168
Refrigerated Warehouse-No Rail		47	237
Refrigerated Warehouse-Rail		50	324
Unrefrigerated Warehouse-No Rail		51	237
Unrefrigerated Warehouse-Rail		51	324
RECREATIONAL			
Fast Food Restaurant w/o Drive Thru	1,000 SF	2.9	2.6
Fast Food Restaurant with Drive Thru		5.7	3.5
Health Club		42	46
High Turnover (Sit Down Restaurant)		13.7	13.2
Movie Theater (No Matinee)		20	21
Quality Restaurant		18	21
Racquet Club		44	48
Recreational Swimming Pool		42	41
Arena	Acres	178	159
City Park		103	786
Golf Course		138	241
Hotel	Rooms	85	126
Motel		79	142
RESIDENTIAL			
Apartment High Rise	Dwelling Units	113	94
Apartment Low Rise		109 / (74)	94 / (71)
Apartment Mid Rise		112	94
Condo/Townhouse General		103 / (72)	93 / (69)
Condo/Townhouse High Rise		104	93
Congregate Care (Assisted Living)		196	157
Mobile Home Park		124	112
Retirement Community		169	- [7]
Single Family Housing		70 / (49)	68 / (50)
RETAIL			
Auto Care Center	1,000 SF	33	32
Convenience Market (24 hour)		5.5	3.3
Convenience Market w/ Gas Pumps		5.7	2.3
Discount Club		37	34
Electronic Superstore		50	48
Free Standing Discount Store		29	25

Free Standing Discount Superstore		30	27
Hardware/Paint Store		28	22
Home Improvement Superstore		46	36
Regional Shopping Center		36	31
Strip Mall		40	38
Supermarket		17.2	12.5
Gasoline/Service Station	Pumps	32	10

1. The screening levels in this table were created using CalEEMod version 2011.1.1 with default San Luis Obispo County urban settings; some rural setting results are also included and are denoted in parentheses. If the project is not represented well by an urban settings, (e.g. urban fringe development where urban trip lengths are not representative), then the project impacts need to be specifically evaluated in CalEEMod using project specific information; modeling results, substantiated assumptions, and CalEEMod files need to be presented to the APCD for review and approval.
2. This screening table is based on annual GHG emissions and daily ozone precursor emissions, and is not comprehensive. It should be used for general guidance only. This table is not applicable for projects that involve substantial heavy-duty diesel activity and/or fugitive dust emissions. A more refined analysis of air quality impacts specific to a given project is recommended for projects exceeding the screening criteria values or that are within 10% of the screening criteria values in this table.
3. Use of this table does not preclude lead agencies from complying with Section 15064.4 of the California Environmental Quality Act ("CEQA") Guidelines which requires that "a lead agency should make a good-faith effort… to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the screening levels in this table, a refined emissions quantification and analysis should be conducted.
4. For ozone precursor evaluations the APCD considers CalEEMod winter scenario simulations worst case because winter emissions are typically higher than its summer emissions.
5. All projects involving the purchase of a school site, or construction of a new elementary or secondary school, must be referred to the APCD for review and comment. (Pub. Resources Code Section 21151.8, Subd. (a)(2)).
6. The size of project is expected to exceed the GHG Threshold of significance for Industrial Land Uses is much smaller than a project that would exceed the Ozone Precursor Threshold as a result of a CalEEMod.2011.1.1 model error in the calculations for industrial projects. This error is scheduled to be corrected in the next CalEEMod model update.
7. Currently there is a CalEEMod model error for the retirement community category. If you are evaluating a project in this category, use the comparable Mobile Home Park category for screening.

1.5 PREPARING THE AIR QUALITY ANALYSIS SECTION FOR CEQA DOCUMENTS

As shown in Table 1-1, use of a simple screening analysis in a Negative Declaration, or emissions calculations and appropriate mitigation measures in a Mitigated Negative Declaration may be all that is necessary for many smaller urban projects. For larger projects requiring the preparation of an EIR, a more comprehensive air quality analysis is often needed. Such an analysis should address both construction phase and operational phase impacts of the project and include the following information:

a. A description of existing air quality and emissions in the impact area, including the attainment status of SLO County relative to State and Federal air quality standards and any existing regulatory restrictions to development. The most recent Clean Air Plan should be consulted for applicable information.

b. A thorough emissions analysis should be performed on all relevant emission sources, using emission factors from the EPA document AP-42 "Compilation of Air Pollutant Emission Factors", the latest approved version of California Emission Estimator Model (CalEEMod), EMFAC, OFF-ROAD or other approved emission calculator tools. The emissions analysis should include calculations for estimated emissions of all criteria air pollutants and toxic air contaminants released from the anticipated land use mix on a quarterly and yearly basis. Documentation of emission factors and all assumptions (i.e. anticipated land uses, average daily trip rate from trip generation studies, etc.) should be provided in an appendix to the EIR.

c. The EIR should include a range of alternatives to the proposed project that could effectively minimize air quality impacts, if feasible. A thorough emissions analysis should be conducted for each of the proposed alternatives identified. The EIR author should contact the SLO County APCD if additional information and guidance is required. All calculations and assumptions used should be fully documented in an appendix to the EIR.

d. Assembly Bill 32, the California Global Warming Solution Act of 2006 and California Governor Schwarzenegger Executive Order S-3-05 (June 1, 2005), both require reductions of greenhouse gases in the State of California. Senate Bill 97 required the Office of Planning and Research to develop and the Natural Resources Agency to adopt Amendments to the CEQA Guidelines for greenhouse gas emissions. Based on these guidelines, greenhouse gas emissions should be evaluated in the EIR along with appropriate mitigation.

e. If a project has the potential to emit toxic or hazardous air pollutants including diesel exhaust, and is located in close proximity to sensitive receptors, impacts may be considered significant due to increased cancer risk for the affected population, even at very low levels of emissions. Such projects may be required to prepare a risk assessment to determine the potential level of risk associated with their operations. The SLO County APCD should be consulted on any project with the potential to emit toxic or hazardous air pollutants.

   Pursuant to the requirements of California Health and Safety Code Section 42301.6 (AB 3205) and Public Resources Code Section 21151.8, subd. (a)(2), any new school or proposed industrial or commercial project site located within 1000 feet of a school must be referred to the SLO County APCD for review. Further details on requirements for projects in this category are presented in Appendix A.

f. The ARB has determined that emissions from sources such as roadways and distribution centers and to a lesser extent gas stations, certain dry cleaners, marine ports and airports as well as refineries can lead to unacceptably high health risk from diesel particulate matter and other toxic air contaminants. The APCD has established a CEQA health risk threshold of **89 in-a-million** for sources which are not otherwise directly regulated; this value represents the health risk caused by ambient concentration of toxics in San Luis Obispo County. A list of potential sources and recommended buffer distances can be found in Section 4.2 of the Handbook. If the proposed project is located in close proximity to any of the listed sources a health risk screening and/or assessment should be performed to assess risk to potential residence of the development.

g. A consistency analysis with the Clean Air Plan is required for a Program Level environmental review, and may be necessary for a Project Level environmental review, depending on the project being considered. Details on conducting a consistency analysis with the Clean Air Plan can be found in Section 3.2.

h. A cumulative impact analysis should be performed to evaluate the combined air quality impacts of this project and impacts from existing and proposed future development in the area. This should encompass all planned construction activities within one mile of the project.

i. The data analyses requested above should address local and regional impacts with respect to maintaining applicable air quality standards at build out. Authors should consult the SLO County APCD to determine if a modeling analysis should be performed and included in the EIR.

j. Temporary construction impacts, such as fugitive dust and combustion emissions from construction and grading activities, should be quantified and mitigation measures proposed. In addition, naturally occurring asbestos may exist at the site. A geological survey is required for the site if it is located in the APCD identified candidate naturally occurring asbestos area. If naturally occurring asbestos is found, the EIR should indicate that a plan will be developed to comply with the requirements listed in the Air Resources Board's Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. If naturally occurring asbestos is not present at the site an exemption request will need to be filed with the APCD.

k. Mitigation measures should be recommended, as appropriate, following the guidelines presented in Sections 2.3, 2.4 and 3.7 of this document.

2 ASSESSING AND MITIGATING CONSTRUCTION IMPACTS

Use of heavy equipment and earth moving operations during project construction can generate fugitive dust and engine combustion emissions that may have substantial temporary impacts on local air quality and climate change. Fugitive dust of concern is particulate matter that is less than ten microns in size (PM_{10}) and is not emitted from definable point sources such as industrial smokestacks. Sources include open fields, roadways, storage piles, earthwork, etc. Fugitive dust emissions results from land clearing, demolition, ground excavation, cut and fill operations and equipment traffic over temporary roads at the construction site.

Heavy-duty construction equipment is usually diesel powered. In July 1999, the ARB listed the particulate fraction of diesel exhaust as a toxic air contaminant, identifying both chronic and carcinogenic public health risks. Combustion emissions, such as nitrogen oxides (NO_x), reactive organic gases (ROG), greenhouse gases (GHG) and diesel particulate matter (diesel PM), are most significant when using large, diesel-fueled scrapers, loaders, bulldozers, haul trucks, compressors, generators and other heavy equipment. Emissions from both fugitive dust and combustion sources can vary substantially from day-to-day depending on the level of activity, the specific type of operation, moisture content of soil, use of dust suppressants and the prevailing weather conditions.

Depending on the construction site location and proximity to sensitive receptors, a project that generates high levels of construction emissions, including diesel PM, may be required to perform a health risk assessment to evaluate short-term exposures to high pollutant concentrations and, if necessary, to implement mitigations measures. Mitigation requirements and the need for further analysis will be determined on a case-by-case basis, based upon emission levels and the potential risk for human exposure and effects. Diesel PM emissions may therefore be a factor in whether Best Available Control Technology (BACT) for construction equipment will be needed, even when emissions of criteria pollutants are below the Air District's significance thresholds.

The following information will assist the user in evaluating the fugitive dust and combustion emissions from a project and in proposing appropriate mitigation measures to reduce these impacts to a level of insignificance.

2.1 CONSTRUCTION SIGNIFICANCE CRITERIA

Construction emissions must be calculated for all development projects likely to exceed the construction emissions threshold, or if the project is subject to the special conditions defined in Section 2.1.1. Details on how to conduct emission calculations are discussed in Section 2.2 below. Once the emissions have been calculated, they should then be compared to the APCD construction phase significance thresholds.

Comparison to APCD Construction Significance Thresholds
The threshold criteria established by the SLO County APCD to determine the significance and appropriate mitigation level for a project's **short-term construction** emissions are presented in Table 2-1.

Most of the **short-term construction mitigation strategies** in Sections 2.3 and 2.4 focus on reducing fugitive dust emissions from work sites and haul vehicles, reducing combustion emissions from construction equipment, reducing asbestos (e.g., NOA) and scheduling construction activities to protect public health.

Table 2-1 provides general thresholds for determining the significance of impacts for total emissions expected from a project's construction activities. The discussion following the table provides a more detailed explanation of the thresholds. The Air District has discretion to require mitigation for projects that will not exceed the mitigation thresholds if those projects will result in special impacts, such as the release of diesel PM emissions or asbestos near sensitive receptors.

Table 2-1: Thresholds of Significance for Construction Operations

Pollutant	Threshold[1]		
	Daily	Quarterly Tier 1	Quarterly Tier 2
ROG + NO_x (combined)	137 lbs	2.5 tons	6.3 tons
Diesel Particulate Matter (DPM)	7 lbs	0.13 tons	0.32 tons
Fugitive Particulate Matter (PM_{10}), Dust[2]		2.5 tons	
Greenhouse Gases (CO_2, CH_4, N20, HFC, CFC, F6S)	Amortized and Combined with Operational Emissions (See Below)		

1. Daily and quarterly emission thresholds are based on the California Health & Safety Code and the CARB Carl Moyer Guidelines.
2. Any project with a grading area greater than 4.0 acres of worked area can exceed the 2.5 ton PM_{10} quarterly threshold.

Mitigation of construction activities is required when the emission thresholds are equaled or exceeded by fugitive and/or combustion emissions:

ROG and NOx Emissions

- **Daily:** For construction projects expected to be completed in less than one quarter (90 days), exceedance of the 137 lb/day threshold requires Standard Mitigation Measures;
- **Quarterly – Tier 1:** For construction projects lasting more than one quarter, exceedance of the 2.5 ton/qtr threshold requires Standard Mitigation Measures and Best Available Control Technology (BACT) for construction equipment. If implementation of the Standard Mitigation and BACT measures cannot bring the project below the threshold, off-site mitigation may be necessary; and,
- **Quarterly – Tier 2:** For construction projects lasting more than one quarter, exceedance of the 6.3 ton/qtr threshold requires Standard Mitigation Measures, BACT, implementation of a Construction Activity Management Plan (CAMP), and off-site mitigation.

Diesel Particulate Matter (DPM) Emissions

- **Daily:** For construction projects expected to be completed in less than one quarter, exceedance of the 7 lb/day threshold requires Standard Mitigation Measures;
- **Quarterly - Tier 1:** For construction projects lasting more than one quarter, exceedance of the 0.13 tons/quarter threshold requires Standard Mitigation Measures, BACT for construction equipment; and,
- **Quarterly - Tier 2:** For construction projects lasting more than one quarter, exceedance of the 0.32 ton/qtr threshold requires Standard Mitigation Measures, BACT, implementation of a CAMP, and off-site mitigation.

Fugitive Particulate Matter (PM10), Dust Emissions

- **Quarterly:** Exceedance of the 2.5 ton/qtr threshold requires Fugitive PM_{10} Mitigation Measures and may require the implementation of a CAMP.

Greenhouse Gas Emissions

- GHGs from construction projects must be quantified and amortized over the life of the project. The amortized construction emissions must be added to the annual average operational emissions and then compared to the operational thresholds in Section 3.5.1—Significance Thresholds for Project-Level Operational Emissions. To amortize the emissions over the life of the project, calculate the total greenhouse gas emissions for the construction activities, divide it by the project life (i.e., 50 years for residential projects and 25 years for commercial projects) then add that number to the annual operational phase GHG emissions.

2.1.1 Special Conditions for Construction Activity

In addition to the construction air quality thresholds defined above, there are a number of special conditions, local regulations or state / federal rules that apply to construction activities. These conditions must be addressed in proposed construction activity.

Sensitive Receptors

The proximity of sensitive individuals (receptors) to a construction site constitutes a special condition and may require a more comprehensive evaluation of toxic diesel PM impacts and if deemed necessary by the SLO County APCD, more aggressive implementation of mitigation measures than described below in the diesel idling section. Areas were sensitive receptors are most likely to spend time include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). Sensitive receptor locations for a project need to be identified during the CEQA review process and mitigation to minimize toxic diesel PM impacts need to be defined. The types of construction projects that typically require a more comprehensive evaluation include large-scale, long-term projects that occur within 1,000 feet of a sensitive receptor location(s).

Diesel Idling Restrictions for Construction Phases

The APCD recognizes the public health risk reductions that can be realized by idle limitations for both on and off-road equipment. The following idle restricting measures are required for the construction phase of projects:

a. Idling Restrictions Near Sensitive Receptors for Both On and off-Road Equipment
   1. Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
   2. Diesel idling within 1,000 feet of sensitive receptors is not permitted;
   3. Use of alternative fueled equipment is recommended whenever possible; and,
   4. Signs that specify the no idling requirements must be posted and enforced at the construction site.

b. Idling Restrictions for On-road Vehicles

   Section 2485 of Title 13, the California Code of Regulations limits diesel-fueled commercial motor vehicles that operate in the State of California with gross vehicular weight ratings of greater than 10,000 pounds and licensed for operation on highways. It applies to California and non-California based vehicles. In general, the regulation specifies that drivers of said vehicles:
   1. Shall not idle the vehicle's primary diesel engine for greater than 5 minutes at any location, except as noted in Subsection (d) of the regulation; and,
   2. Shall not operate a diesel-fueled auxiliary power system (APS) to power a heater, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than 5.0 minutes at any location when within 100 feet of a restricted area, except as noted in Subsection (d) of the regulation.

   Signs must be posted in the designated queuing areas and job sites to remind drivers of the 5 minute idling limit. The specific requirements and exceptions in the regulation can be reviewed at the following web site: www.arb.ca.gov/msprog/truck-idling/2485.pdf.

c. Idling Restrictions for off-Road Equipment

   Off-road diesel equipment shall comply with the 5 minute idling restriction identified in Section 2449(d)(3) of the California Air Resources Board's In-Use off-Road Diesel regulation: www.arb.ca.gov/regact/2007/ordiesl07/frooal.pdf.

   Signs shall be posted in the designated queuing areas and job sites to remind off-road equipment operators of the 5 minute idling limit.

Naturally Occurring Asbestos
Naturally Occurring Asbestos (NOA) has been identified as a toxic air contaminant by the California Air Resources Board (ARB). Under the ARB Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations, prior to any grading activities a geologic evaluation should be conducted to determine if NOA is present within the area that will be disturbed. If NOA is not present, an exemption request must be filed with the District. If NOA is found at the site, the applicant must comply with all requirements outlined in the Asbestos ATCM. This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the APCD. Technical Appendix 4.4 of this Handbook includes a map of zones throughout SLO County where NOA has been found and geological evaluation is required prior to any grading. More information on NOA can be found at http://www.slocleanair.org/business/asbestos.asp.

Asbestos Material in Demolition
Demolition activities can have potential negative air quality impacts, including issues surrounding proper handling, demolition, and disposal of asbestos containing material (ACM). Asbestos containing materials could be encountered during demolition or remodeling of existing buildings. Asbestos can also be found in utility pipes/pipelines (transite pipes or insulation on pipes). If utility pipelines are scheduled for removal or relocation or a building(s) is proposed to be removed or renovated, various regulatory requirements may apply, including the requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (40CFR61, Subpart M - asbestos NESHAP). These requirements include but are not limited to: 1) notification to the APCD, 2) an asbestos survey conducted by a Certified Asbestos Inspector, and, 3) applicable removal and disposal requirements of identified ACM. More information on Asbestos can be found at http://www.slocleanair.org/business/asbestos.php.

Developmental Burning
APCD regulations prohibit developmental burning of vegetative material within SLO County.

Permits
Portable equipment and engines 50 horsepower (hp) or greater, used during construction activities will require California statewide portable equipment registration (issued by the ARB) or an Air District permit. The following list is provided as a guide to equipment and operations that may have permitting requirements, but should not be viewed as exclusive:

- Power screens, conveyors, diesel engines, and/or crushers;
- Portable generators and equipment with engines that are 50 hp or greater;
- Internal combustion engines;
- Unconfined abrasive blasting operations;
- Concrete batch plants;
- Rock and pavement crushing;
- Tub grinders; and,
- Trommel screens.

2.2 METHODS FOR CALCULATING CONSTRUCTION EMISSIONS

In calculating emissions for construction operations (NO_x, ROG, DPM, GHG and fugitive PM), specific information about each activity and phase of the construction project is needed. Several methods are described below, each of which requires increasingly detailed information to produce more accurate results.

All assumptions, estimates, and calculation methods must be provided for SLO County APCD review. Calculation of combustion and fugitive dust emissions from construction activities should include peak daily, quarterly, annual, and total construction phase emissions of NO_x, ROG, diesel PM, GHG and fugitive PM. Both the duration of the construction activities and schedule of phases are required in the evaluation. When using CalEEMod or a spreadsheet to model construction emissions, the **electronic**

project file (not a pdf) needs to be submitted to the SLO County APCD for review along with a summary table showing all emissions. The electronic file(s) need to be submitted to the APCD for review and shall include specific and summary emission reports, a detailed explanation of any deviations from CalEEMod defaults, and a detailed description of assumptions used for the emission calculations.

It may be necessary to calculate the project's construction impacts without knowing the exact fleet of construction equipment involved in the project. Table 2-2 contains screening construction emission rates based on the volume of soil moved and the area disturbed. This table should only be used when no other project information is available.

Table 2-2: Screening Emission Rates for Construction Operations

Pollutant	Grams/Cubic Yard of Material Moved	Lbs/Cubic Yard of Material Moved
Diesel PM	2.2	0.0049
Reactive Organic Gases (ROG)	9.2	0.0203
Oxides of Nitrogen (NO_x)	42.4	0.0935
Fugitive Dust (PM_{10})	0.75 tons/acre/month of construction activity (assuming 22 days of operation per month)	

ROG, NO_x, DPM Source: Bay Area Air Quality Management District CEQA Guidelines, December 1999, Table 7
PM_{10} Source: EPA-AP-42 (January 1995) and Index of Methodologies by Major Category Section 7.7 Building Construction Dust, California Air Resources Board, August 1997

The next level of specificity in defining project construction emissions involves the use of CalEEMod computer model. This model contains emission factors for a variety of construction equipment. It will automatically generate default values for the parameters listed below.

- Construction fleet;
- Construction phase duration (user must specify the start and end dates for each phase);
- Daily disturbed acreage;
- Fugitive dust emission rate;
- Asphalt paving (if applicable);
- Construction workers' trips;
- Equipment fleet mix for various phases of construction:
- Construction vendors' trips; and,
- Architectural coating emissions.

CalEEMod will not automatically calculate off-site hauling trips and associated emissions. If soil or demolition materials will need to be hauled off-site or materials will be imported, cubic yards of material and the number of truck trips will need to be entered into the model. The trip length associated with hauling also needs to be entered into the model along with a detailed explanation of the trip length. Specific truck emission factors for the hauling fleet should to be included in the simulation. If the specific fleet is unknown at time of modeling, then a defensible worst case set of hauling fleet emission factors shall be used. This hauling component is an important step and is often overlooked resulting in under estimation of emissions.

If more detailed information regarding the construction phase of the project is known, the construction phases and default values can be modified in this step to more accurately reflect the anticipated emissions from the project.

A component of CalEEMod, the construction calculator, allows project specific equipment data to be used to calculate emissions. The use of the construction calculator is recommended for those projects that are in the final phase of planning when the actual fleet mix and construction schedule is defined to validate

previous emission estimates and finalize mitigation measures. The following variables can be defined for each piece of construction equipment:

- Equipment type;
- Quality of equipment used;
- Horsepower rating;
- Load factor;
- Usage (hours/day);
- Engine model year;
- Engine deterioration (years and hours since last rebuild); and,
- Exhaust after-treatment devices such as VDEC (verified diesel emission control devices).

More detailed information about CalEEMod can be found at www.caleemod.com

2.3 ROG, NO_X, PM AND GHG COMBUSTION MITIGATION MEASURES

Construction mitigation measures are designed to reduce emissions (ROG, NO_x, DPM, PM_{10} and GHG) from heavy-duty construction equipment and may include emulsified fuels, catalyst and filtration technologies, engine replacement, new alternative fueled trucks, and implementation of Construction Activity Management Plans (CAMP). The mitigation measures for construction activity fall into three separate sections:

- Standard Mitigation Measures
- Best Available Control Technologies (BACT) and Construction Activity Management Plans
  - Construction Activity Management Plans (CAMP)
  - Retrofit Devices and Alternative Fuels
  - Repowers
- Fugitive Dust Mitigation Measures

Measure Applicability
Measures should be applied as necessary to reduce construction impacts below the significance thresholds listed in Table 2-1. Construction equipment mitigation measures and construction activity management practices have been shown to significantly reduce emissions while maintaining overall equipment performance and project scheduling needs. Project proponents shall determine daily and quarterly construction phase impacts and define mitigation that will be implemented if impacts are expected to exceed the SLO County APCD's construction phase thresholds of significance.

The following list of standard and specific mitigation measures shall be incorporated into project conditions depending on the level of impacts. Ozone precursors (ROG + NO_x) are to be combined and compared to the SLO County APCD's construction phase significance thresholds. Applying the BACT for construction equipment or implementing a Construction Activity Management Plan is required when the Quarterly Tier 2 construction significance thresholds of 6.3 tons per quarter ROG + NO_x or 0.32 tons per quarter diesel PM are exceeded.

2.3.1 Standard Mitigation Measures for Construction Equipment

The standard mitigation measures for reducing nitrogen oxides (NO_x), reactive organic gases (ROG), and diesel particulate matter (DPM) emissions from construction equipment are listed below:

- Maintain all construction equipment in proper tune according to manufacturer's specifications;
- Fuel all off-road and portable diesel powered equipment with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road);
- Use diesel construction equipment meeting ARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State off-Road Regulation;

- Use on-road heavy-duty trucks that meet the ARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;
- Construction or trucking companies with fleets that that do not have engines in their fleet that meet the engine standards identified in the above two measures (e.g. captive or NO_x exempt area fleets) may be eligible by proving alternative compliance;
- All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit;
- Diesel idling within 1,000 feet of sensitive receptors is not permitted;
- Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
- Electrify equipment when feasible;
- Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and,
- Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.

2.3.2 Best Available Control Technology (BACT) for Construction Equipment

If the estimated ozone precursor emissions from the actual fleet for a given construction phase are expected to exceed the APCD threshold of significance after the standard mitigation measures are factored into the estimation, then BACT needs to be implemented to further reduce these impacts. The BACT measures can include:

- Further reducing emissions by expanding use of Tier 3 and Tier 4 off-road and 2010 on-road compliant engines;
- Repowering equipment with the cleanest engines available; and
- Installing California Verified Diesel Emission Control Strategies. These strategies are listed at: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

2.3.3 Construction Activity Management Plan (CAMP) and Off-Site Mitigation

If the estimated construction emissions from the actual fleet are expected to exceed either of the APCD Quarterly Tier 2 thresholds of significance after the standard and BACT measures are factored into the estimation, then an APCD approved CAMP (see Technical Appendix 4.5 for CAMP Guidelines) and off-site mitigation need to be implemented in order to reduce potential air quality impacts to a level of insignificance.

CAMP
The CAMP should be submitted to the APCD for review and approval prior to the start of construction and should include, but not be limited to, the following elements:

- A Dust Control Management Plan that encompasses all, but is not limited to, dust control measures that were listed above in the "dust control measures" section;
- Tabulation of on and off-road construction equipment (age, horse-power and miles and/or hours of operation);
- Schedule construction truck trips during non-peak hours to reduce peak hour emissions;
- Limit the length of the construction work-day period, if necessary; and,
- Phase construction activities, if appropriate.

Off-Site Mitigation
It is important for the developer, lead agency, and SLO County APCD to work closely together whenever off-site mitigation is triggered. Off-site emission reductions can result from either stationary or mobile sources, but should relate to the on-site impacts from the project in order to provide proper "nexus" for the air quality mitigation. For example, NO_x emissions from a large grading project could be reduced by re-powering heavy-duty diesel construction equipment, thereby reducing the amount of NO_x generated from that equipment. An off-site mitigation strategy should be developed and agreed upon by all parties at least three months prior to the issuance of grading permits.

The current off-site mitigation rate is $16,000 per ton[1] of ozone precursor emission (NO_x + ROG) over the APCD threshold calculated over the length of the expected exceedance. The applicant may use these funds to implement APCD approved emission reduction projects near the project site or may pay that funding level plus an administration fee (2012 rate is 15%) to the APCD to administer emission reduction projects in close proximity to the project. The applicant shall provide this funding at least two (2) months prior to the start of construction to help facilitate emission offsets that are as real-time as possible.

Examples off-site mitigation strategies include, but are not limited to, the following:

- Fund a program to buy and scrap older heavy-duty diesel vehicles or equipment;
- Replace/repower transit buses;
- Replace/repower heavy-duty diesel school vehicles (i.e. bus, passenger or maintenance vehicles);
- Retrofit or repower heavy-duty construction equipment, or on-road vehicles;
- Repower or contribute to funding clean diesel locomotive main or auxiliary engines;
- Purchase VDECs for local school buses, transit buses or construction fleets;
- Install or contribute to funding alternative fueling infrastructure (i.e. fueling stations for CNG, LPG, conductive and inductive electric vehicle charging, etc.);
- Fund expansion of existing transit services; and,
- Replace/repower marine diesel engines.

2.4 FUGITIVE DUST MITIGATION MEASURES

Fugitive dust is particulate matter that is less than ten micros in size (PM_{10}) and is not emitted from defined point sources such as industrial smokestacks. Sources include open fields, graded or excavated areas, roadways, storage piles, etc.

All fugitive dust sources shall be managed to ensure that dust emissions are adequately controlled to below the 20% opacity limit identified in the APCD Rule 401 *Visible Emission*s and to ensure that dust is not emitted offsite. Projects shall implement one of the following fugitive dust mitigation sets to both minimize fugitive dust emissions and associated complaints that could result in a violation of the APCD Rule 402 *Nuisance*. The correct fugitive dust mitigation set for a given project depends on the project scale or proximity to sensitive receptors. The project proponent may propose other measures of equal or better effectiveness as replacements by contacting the APCD Panning Division.

Fugitive Dust Mitigation Measures: Short List
Projects with grading areas that are less than 4-acres and that are not within 1,000 feet of any sensitive receptor shall implement the following mitigation measures to minimize nuisance impacts and to significantly reduce fugitive dust emissions:

a. Reduce the amount of the disturbed area where possible;

b. Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible;

c. All dirt stock-pile areas should be sprayed daily as needed;

d. All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible, and building pads should be laid as soon as possible after grading unless seeding or soil binders are used;

e. All of these fugitive dust mitigation measures shall be shown on grading and building plans; and

1 The value used to calculate off-site mitigation is based on the ARB approved Carl Moyer Grant Program and is updated on a periodic basis. The Carl Moyer cost effectiveness value as of 2009 is $16,000 per ton.

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f. The contractor or builder shall designate a person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20% opacity, and to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.

Fugitive Dust Mitigation Measures: Expanded List
Projects with grading areas that are greater than 4-acres or are within 1,000 feet of any sensitive receptor shall implement the following mitigation measures to minimize nuisance impacts and to significantly reduce fugitive dust emissions:

a. Reduce the amount of the disturbed area where possible;

b. Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible;

c. All dirt stock pile areas should be sprayed daily as needed;

d. Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities;

e. Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading should be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established;

f. All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD;

g. All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used;

h. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;

i. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114;

j. Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site;

k. Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible;

l. All of these fugitive dust mitigation measures shall be shown on grading and building plans; and

m. The contractor or builder shall designate a person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20% opacity, and to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the APCD Compliance Division prior to the start of any grading, earthwork or demolition.

2.5 MITIGATION MONITORING

The APCD may conduct site visits to ensure that the construction phase air quality mitigation measures identified in the project's CEQA documents/conditions of approval were fully implemented. The lead agency may also review project mitigation for consistency with project conditions. Beyond verifying mitigation implementation, this monitoring can result in compliance requirements if mitigation measures are not sufficiently being implemented.

3 ASSESSING AND MITIGATING OPERATIONAL IMPACTS

Air pollutant emissions from urban development can result from a variety of sources, including motor vehicles, wood burning appliances, natural gas and electric energy use, combustion-powered utility equipment, paints and solvents, equipment or operations used by various commercial and industrial facilities, heavy-duty equipment and vehicles and various other sources. The air quality impacts that result from operational activities of a development project should be fully evaluated and quantified as part of the CEQA review process. The methods for evaluating and mitigating operational impacts from residential, commercial and industrial sources are discussed below.

3.1 OPERATIONAL SIGNIFICANCE CRITERIA

The APCD has established five separate categories of evaluation for determining the significance of project impacts. Full disclosure of the potential air pollutant and/or toxic air emissions from a project is needed for these evaluations, as required by CEQA:

a. Consistency with the most recent Clean Air Plan for San Luis Obispo County;

b. Consistency with a plan for the reduction of greenhouse gas emissions that has been adopted by the jurisdiction in which the project is located and that, at a minimum, complies with State CEQA Guidelines Section 15183.5.

c. Comparison of predicted ambient criteria pollutant concentrations resulting from the project to state and federal health standards, when applicable;

d. Comparison of calculated project emissions to SLO County APCD emission thresholds; and,

e. The evaluation of special conditions which apply to certain projects.

3.2 CONSISTENCY WITH THE SLO COUNTY APCD'S CLEAN AIR PLAN AND SMART GROWTH PRINCIPLES

A consistency analysis with the Clean Air Plan is required for a Program Level environmental review, and may be necessary for a Project Level environmental review, depending on the project being considered. Program-Level environmental reviews include but are not limited to General Plan Updates and Amendments, Specific Plans, Regional Transportation Plans and Area Plans. Project-Level environmental reviews which may require consistency analysis with the Clean Air Plan and Smart/Strategic Growth Principles adopted by lead agencies include: subdivisions, large residential developments and large commercial/industrial developments. The project proponent should evaluate if the proposed project is consistent with the land use and transportation control measures and strategies outlined in the Clean Air Plan. If the project is consistent with these measures, the project is considered consistent with the Clean Air Plan.

3.3 CONSISTENCY WITH A PLAN FOR THE REDUCTION OF GREENHOUSE GAS EMISSIONS

The APCD encourages local governments to adopt a qualified GHG reduction plan that is consistent with AB 32 goals. If a project is consistent with an adopted qualified GHG reduction plan it can be presumed that the project will not have significant GHG emission impacts. This approach is consistent with the State CEQA Guidelines, Section 15183.5 (see text in box below).

§15183.5. Tiering and Streamlining the Analysis of Greenhouse Gas Emissions.

(a) Lead agencies may analyze and mitigate the significant effects of greenhouse gas emissions at a programmatic level, such as in a general plan, a long range development plan, or a separate plan to reduce greenhouse gas emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an EIR containing a programmatic analysis of greenhouse gas emissions as provided in section 15152 (tiering), 15167 (staged EIRs) 15168 (program EIRs), 15175-15179.5 (Master EIRs), 15182 (EIRs Prepared for Specific Plans), and 15183 (EIRs Prepared for General Plans, Community Plans, or Zoning).

(b) Plans for the Reduction of Greenhouse Gas Emissions. Public agencies may choose to analyze and mitigate significant greenhouse gas emissions in a plan for the reduction of greenhouse gas emissions or similar document. A plan to reduce greenhouse gas emissions may be used in a cumulative impacts analysis as set forth below. Pursuant to sections 15064(h)(3) and 15130(d), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances.

(1) Plan Elements. A plan for the reduction of greenhouse gas emissions should:

(A) Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;

(B) Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;

(C) Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area;

(D) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

(E) Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels;

(F) Be adopted in a public process following environmental review

(2) Use with Later Activities. A plan for the reduction of greenhouse gas emissions, once adopted following certification of an EIR or adoption of an environmental document, may be used in the cumulative impacts analysis of later projects. An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project. If there is substantial evidence that the effects of a particular project may be cumulatively considerable notwithstanding the project's compliance with the specified requirements in the plan for the reduction of greenhouse gas emissions, an EIR must be prepared for the project.

Detailed information on preparing qualified GHG reduction plans is provided in the Technical Appendices 4.6 GHG Plan Level Guidance.

3.4 COMPARISON TO STANDARDS

State and federal ambient air quality standards are established to protect public health and welfare from the adverse impacts of air pollution; these standards are listed in Table 3-1. Industrial and large commercial projects are sometimes required to perform air quality dispersion modeling if the SLO County APCD determines that project emissions may have the potential to cause an exceedance of these standards. In such cases, models are used to calculate the potential ground-level pollutant concentrations resulting from the project. The predicted pollutant levels are then compared to the applicable state and federal standards. A project is considered to have a significant impact if its emissions are predicted to cause or contribute to a violation of any ambient air quality standard. In situations where the predicted standard violation resulted from the application of a "screening-level" model or calculation, it may be appropriate to perform a more refined modeling analysis to accurately estimate project impacts. If a refined analysis is not available or appropriate, then the impact must be mitigated to a level of insignificance or a finding of overriding considerations must be made by the permitting agency.

Table 3-1: Ambient Air Quality Standards (State and Federal)

Pollutant		Averaging Time	California Standard [1]	Federal Standard [2]
Ozone		1 Hour	0.09 ppm	
		8 Hour	0.070 ppm	0.075 ppm
Carbon Monoxide		8 Hour	9.0 ppm	9 ppm
		1 Hour	20 ppm	35 ppm
Nitrogen Dioxide		Annual Arithmetic Mean	0.030 ppm	0.053 ppm
		1 Hour	0.18 ppm	
Sulfur Dioxide		Annual Arithmetic Mean		0.030 ppm
		24 Hour	0.04 ppm	0.14 ppm
		3 Hour		0.5 ppm (secondary)
		1 Hour	0.25 ppm	
Respirable Particulate Matter	PM_{10}	Annual Arithmetic Mean	20 µg/m^3	
		24 Hour	50 µg/m^3	150 µg/m^3
Fine Particulate Matter	$PM_{2.5}$	Annual Arithmetic Mean	12 µg/m^3	15.0 µg/m^3
		24 Hour		35 µg/m^3
Hydrogen Sulfide		1 Hour	0.03 ppm	
Vinyl Chloride		24 Hour	0.01 ppm	
Sulfates		24 Hour	25 µg/m^3	
Lead			30 day average: 25 µg/m^3	Rolling 3-month average:0.15 µg/m^3 Calendar quarter: 1.5 µg/m^3
Visibility Reducing Particles		8 Hour	Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.	

1. California standards for ozone, carbon monoxide (except Lake Tahoe), nitrogen dioxide, sulfur dioxide (1-hour and 24-hour), $PM_{2.5}$, PM_{10} and visibility reducing particles are values that are not to be exceeded. All other state standards are not to be equaled or exceeded.

2. Federal standards are not to be exceeded more than once in any calendar year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24 hour standard is attained when the 98 percent of the daily concentration, average over three years, are equal to or less than the standard.

3.5 COMPARISON TO SLO COUNTY APCD OPERATIONAL EMISSION THRESHOLDS

Emissions which exceed the designated threshold levels are considered potentially significant and should be mitigated.

A Program Level environmental review, such as for a General Plan, Specific Plan or Area Plan however, does not require a quantitative air emissions analysis at the project scale. A qualitative analysis of the air quality impacts should be conducted instead, and should be generated for each of the proposed alternatives to be considered. The qualitative analysis of each alternative should be based upon criteria such as prevention of urban sprawl and reduced dependence on automobiles. A finding of significant impacts can be determined qualitatively by comparing consistency of the project with the Transportation and Land Use Planning Strategies outlined in the APCD's Clean Air Plan. Refer to Section 3.2 for more information.

Section 3.7 of this document provides guidance on the type of mitigation recommended for varying levels of impact and presents a sample list of appropriate mitigation measures for different types of projects.

3.5.1 Significance Thresholds for Project-Level Operational Emissions

The threshold criteria established by the SLO County APCD to determine the significance and appropriate mitigation level for **long-term operational** emissions from a project are presented in Table 3-2.

Table 3-2: Thresholds of Significance for Operational Emissions Impacts

Pollutant	Threshold[1]	
	Daily	Annual
Ozone Precursors (ROG + NO_x)[2]	25 lbs/day	25 tons/year
Diesel Particulate Matter (DPM)[2]	1.25 lbs/day	
Fugitive Particulate Matter (PM_{10}), Dust	25 lbs/day	25 tons/year
CO	550 lbs/day	
Greenhouse Gases (CO_2, CH_4, N20, HFC, CFC, F6S)	Consistency with a Qualified Greenhouse Gas Reduction Plan OR 1,150 MT CO_2e/year OR 4.9 CO_2e/SP/year (residents + employees)	

1. Daily and annual emission thresholds are based on the California Health & Safety Code Division 26, Part 3, Chapter 10, Section 40918 and the CARB Carl Moyer Guidelines for DPM.
2. CalEEmod – use winter operational emission data to compare to operational thresholds.

Most of the **long-term operational mitigation strategies** suggested in Section 3.7 focus on methods to reduce vehicle trips and travel distance, including site design standards which encourage pedestrian and bicycle-friendly, transit-oriented development. In addition, the recommendations include design strategies for residential and commercial buildings that address energy conservation and other concepts to reduce total project emissions. These recommendations are not all inclusive and are provided as examples among many possibilities.

3.5.2 Ozone Precursor (ROG + NO_x) Emissions

- If the project's ozone precursor emissions are below the APCD's **25 lbs/day** (combined ROG + NO_x emissions) no ozone mitigation measures are necessary. The Lead Agency will prepare the appropriate, required environmental document(s).

- Projects which emit **25 lb/day** or more of ozone precursors (ROG + NO_x combined) have the potential to cause significant air quality impacts, and should be submitted to the SLO County APCD for review. On-site mitigation measures, following the guidelines in Section 3.7 (*Operational Emission Mitigation*), are recommended to reduce air quality impacts to a level of insignificance.

  If all feasible mitigation measures are incorporated into the project and emissions can be reduced to less than 25 lbs/day, then the Lead Agency will prepare the appropriate, required environmental document(s).

  If all feasible mitigation measures are incorporated into the project and emissions are still greater than 25 lbs/day, then an ENVIRONMENTAL IMPACT REPORT should be prepared. Additional mitigation measures, including off-site mitigation, may be required depending on the level and scope of air quality impacts identified in the EIR.

- Projects which emit **25 tons/year** or more of ozone precursor (ROG + NO_x combined), require the preparation of an ENVIRONMENTAL IMPACT REPORT. Depending upon the level and scope of air quality impacts identified in the EIR, mitigation measures, including off-site mitigation, may be required to reduce the overall air quality impacts of the project to a level of insignificance.

3.5.3 Diesel Particulate Matter (DPM) Emissions

Diesel particulate matter (DPM) is seldom emitted from individual projects in quantities which lead to local or regional air quality attainment violations. DPM is, however, a toxic air contaminant and carcinogen, and exposure DPM may lead to increased cancer risk and respiratory problems. Certain industrial and commercial projects may emit substantial quantities of DPM through the use of stationary and mobile on-site diesel-powered equipment as well diesel trucks and other vehicles that serve the project.

Projects that emit more than **1.25 lbs/day** of DPM need to implement on-site Best Available Control Technology measures. If sensitive receptors are within 1,000 feet of the project site, a Health Risk Assessment (HRA) may also be required. Sections 3.5.1 and 3.6.4 of this Handbook provide more background on HRAs in conjunction with CEQA review. Guidance on the preparation of a HRA may be found in the CAPCOA report *HEALTH RISK ASSESSMENT FOR PROPOSED LAND USE PROJECTS* which can be downloaded from the CAPCOA website at www.capcoa.org.

3.5.4 Fugitive Particulate Matter (Dust) Emissions

Projects which emit more than **25 lbs/day** or **25 tons/year** of fugitive particulate matter need to implement permanent dust control measures to mitigate the emissions below these thresholds or provide suitable off-site mitigation approved by the APCD. Operational fugitive dust emissions from a proposed project are calculated using the CALEEMOD model discussed in Section 3.6.1. Typical sources of operational emissions included the following:

- Paved roadways: Vehicular traffic on paved roads that are used to accesses large residential, commercial, or industrial projects can generate significant dust emissions.

- Off and/or on-site unpaved roads or surfaces: Even at low traffic volume, vehicular traffic on unpaved roads or surfaces that are used to accesses residential, commercial, or industrial operations or that accesses special events, etc. can generate significant dust emissions
- Industrial and/or commercial operations: Certain industrial operations can generate significant dust emissions associated with vehicular access, commercial or industrial activities.

Any of the above referenced land uses or activities can result in dust emissions that exceed the APCD significance thresholds, cause violations of an air quality standard, or create a nuisance impact in violation of APCD Rule 402 *Nuisance*. In all cases where such impacts are predicted, appropriate fugitive dust mitigation measures shall be implemented.

3.5.5 Carbon Monoxide (CO) Emissions

Carbon monoxide is a colorless, odorless, tasteless gas emitted during combustion of carbon-based fuels. While few land use projects result in high emissions of CO, this pollutant is of particular concern when emitted into partially or completely enclosed spaces such as parking structures and garages. Projects which emit more than 550 lbs/day of carbon monoxide (CO) and occur in a confined or semi-confined space (e.g., parking garage or enclosed indoor stadium) must be modeled to determine their significance. In confined or semi-confined spaces where vehicle activity occurs, CO modeling is required. If modeling shows the potential to violate the State CO air quality standard, mitigation or project redesign is required to reduce CO concentrations to a level below the health-based standard.

3.5.6 Greenhouse Gas Emissions

GHGs (CO_2, CH_4, N20, HFC, CFC, F6S) from all projects subject to CEQA must be quantified and mitigated to the extent feasible. The thresholds of significance for a project's amortized construction plus operational-related GHG emissions are:

- For land use development projects, the threshold is compliance with a qualified GHG Reduction Strategy (see Section 3.3); OR annual emissions less than 1,150 metric tons per year (MT/yr) of CO_2e; ORr 4.9 MT CO_2e/service population (SP)/yr (residents + employees2). Land use development projects include residential, commercial and public land uses and facilities. Lead agencies may use any of the three options above to determine the significance of a project's GHG emission impact to a level of certainty.

- For stationary-source projects, the threshold is 10,000 metric tons per year (MT/yr) of CO_2e. Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require an APCD permit to operate.

The APCD's GHG threshold is defined in terms of carbon dioxide equivalent (CO_2e), a metric that accounts for the emissions from various greenhouse gases based on their global warming potential. If annual emissions of GHGs exceed these threshold levels, the proposed project would result in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact to global climate change. More detailed information on the greenhouse gas thresholds can be found in the APCD's *Greenhouse Gas Thresholds and Supporting Evidence* document (March 28, 2012) that is available at www.slocleanair.org.

3.6 SPECIAL CONDITIONS

Projects may require additional assessments as described in the following section.

2 For projects where the employment is unknown, please refer to Appendix 4.7 "Employees per 1000sf" to estimate the number of employees associated with any project.

3.6.1 Toxic Air Contaminants

Health Risk Assessments

If a project has the potential to emit toxic or hazardous air pollutants, or is located in close proximity to sensitive receptors, impacts may be considered significant due to increased cancer risk for the affected population, even at a very low level of emissions. Such projects may be required to prepare a risk assessment to determine the potential level of risk associated with their operations. The SLO County APCD should be consulted on any project with the potential to emit toxic or hazardous air pollutants. Pursuant to the requirements of California Health and Safety Code Section 42301.6 (AB 3205) and Public Resources Code Section 21151.8, subd. (a)(2), any new school, or proposed industrial or commercial project site located within 1000 feet of a school must be referred to the SLO County APCD for review. Further details on requirements for projects in this category are presented in Section 4.1.

In April of 2005, the California ARB issued the *AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE* (Land Use Handbook). The ARB has determined that emissions from sources such as roadways and distribution centers and, to a lesser extent gas stations, certain dry cleaners, marine ports and airports as well as refineries can lead to unacceptably high health risk from diesel particulate matter and other toxic air contaminants (TACs). Groups such as children and the elderly, as well as long-term residential occupants, are particularly at risk from toxic exposure.

In July 2009, the California Air Pollution Control officers Associations (CAPCOA) adopted a guidance document *HEALTH RISK ASSESSMENTS FOR PROPOSED LAND USE PROJECTS* to provide uniform direction on how to assess the health risk impacts from and to proposed land use projects. The CAPCOA guidance document focuses on how to identify and quantify the potential acute, chronic, and cancer impacts of sources under CEQA review. It also outlines the recommended procedures to identify when a project should undergo further risk evaluation, how to conduct the health risk assessment (HRA), how to engage the public, what to do with the results from the HRA, and what mitigation measures may be appropriate for various land use projects.

As defined in the CAPCOA guidance document there are basically two types of land use projects that have the potential to cause long-term public health risk impacts:

- Type A Projects: new proposed land use projects that generate toxic air contaminants (such as gasoline stations, distribution facilities or asphalt batch plants) that impact sensitive receptors. Air districts across California are uniform in their recommendation to use the significance thresholds that have been established under each district's "Hot Spots" and permitting programs. The APCD has defined the excess cancer risk significance threshold at **10 in a million** for Type A projects in SLO County; and,

- Type B Projects: new land use projects that will place sensitive receptors (e.g., residential units) in close proximity to existing toxics sources (e.g., freeway). The APCD has established a CEQA health risk threshold of **89 in-a-million** for the analysis of projects proposed in close proximity to toxic sources. This value represents the population weighted average health risk caused by ambient background concentrations of toxic air contaminants in San Luis Obispo County. The APCD recommends Health Risk screening and, if necessary, Health Risk Assessment (HRA) for any residential or sensitive receptor development proposed in proximity to toxic sources.

If a project is located near a sensitive receptor (e.g., school, hospital, dwelling unit(s), etc.), it may be considered significant even if other criteria do not apply. The health effects of a project's emissions may be more pronounced if they impact a considerable number of children, elderly, or people with compromised respiratory or cardiac conditions.

Diesel PM
In October of 2000, the ARB issued and adopted the Diesel Risk Reduction Plan to reduce particulate matter emissions from diesel-fueled engines and vehicles. This plan identified that 70% of the airborne toxic risk in California is from diesel particulate matter.

The plan called for a 90% reduction in this Toxic Air Contaminant by 2020 through:

a. Adoption of new regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles;

b. Requiring feasible and cost-effective diesel PM reducing retrofit requirements for the existing fleets and stationary engines; and,

c. Reducing the sulfur content in diesel-fuel sold in California to 15 parts per million.

At a minimum, fleets must meet the diesel emission reduction requirements that have been adopted in the State's Diesel Risk Reduction Plan. These fleets may also be required to provide additional mitigation depending on the project's emissions and location.

Asbestos / Naturally Occurring Asbestos
Naturally occurring asbestos (NOA) has been identified by the state Air Resources Board as a toxic air contaminant. Serpentine and ultramafic rocks are very common throughout California and may contain naturally occurring asbestos. The SLO County APCD has identified areas throughout the County where NOA may be present (see Technical Appendix 4.4). Under the ARB's Air Toxic Control Measure (ATCM) related to quarrying, and surface mining operations, a geologic evaluation is required to determine if NOA is present prior to any grading activities at a project site located in the candidate area.

If NOA is found at the site the applicant must comply with all requirements outlined in the Asbestos ATCM for Quarrying, and Surface Mining Operations. These requirements may include but are not limited to:

a. Development of an Asbestos Dust Mitigation Plan which must be approved by the APCD before operations begin, and,

b. Development and approval of an Asbestos Health and Safety Program (required for some projects).

If NOA is not present, an exemption request must be filed with the Air District. More information on NOA can be found at http://www.slocleanair.org/business/asbestos.asp.

3.6.2 Agricultural Operations

Wineries, Tasting Rooms and Special Events
Reactive organic gas emissions (ethanol) generated during wine fermentation and storage, as well as emissions from equipment used in wine production, can cause significant air quality impacts. Thus, the emissions for new or modified winery operations and activities should be evaluated and appropriate mitigation specified when necessary. New or expanding wineries with storage capacity of 26,000 gallons per year or more may also require a Permit to Operate from the APCD.

Wine production facilities can also generate nuisance odors during various steps of the process. Proven methods for handling wastewater discharge and grape skin waste need to be incorporated into the winery practices to minimize the occurrence of anaerobic processes that mix with ambient air which can result in offsite nuisance odor transport. Odor complaints could result in a violation of the SLO County APCD Rule 402 *Nuisance*.

Agricultural Burns
Agricultural operations must obtain an APCD Agricultural Burn Permit to burn dry agricultural vegetation on Permissive Burn Days. The ARB provides educational handbooks on agricultural burning (English and Spanish) to growers which are available at the following websites:
-www.arb.ca.gov/cap/handbooks/agburningsmall.pdf
-www.arb.ca.gov/cap/handbooks/agburningspanishsmall.pdf.

3.6.3 Fugitive Dust

Fugitive dust can come from many sources, such as unpaved roads, equestrian facilities and confined animal feeding operations. Dust emissions from the operational phase of a project should be managed to ensure they do not impact offsite areas and do not exceed the 20% opacity limit identified in SLO County APCD Rule 401 *Visible Emissions*. A list of approved dust control suppressants is available in Technical Appendix 4.3. The approved suppressants must be reapplied at a frequency that ensures dust emissions will not exceed the limits stated above. Any chemical or organic material used for stabilizing solids shall not violate the California State Water Quality Control Board standards for use as a soil stabilizer. Any dust suppressant must not be prohibited for use by the US Environmental Protection Agency, the California Air Resources Board, or other applicable law, rule, or regulation.

Equestrian Facilities
Another potential source of fugitive dust can come from equestrian facilities, which may be a nuisance to local residents. To minimize nuisance impacts and to reduce fugitive dust emissions from equestrian facilities the following mitigation measures should be incorporated into the project:

- Reduce the amount of the disturbed area where possible;
- Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water shall be used whenever possible;
- Permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities;
- All disturbed soil areas not subject to revegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the Air District;
- All access roads and parking areas associated with the facility shall be paved to reduce fugitive dust; and,
- A person or persons shall be designated to monitor for dust and implement additional control measures as necessary to prevent transport of dust offsite. The monitor's duties shall include holidays and weekend. The name and telephone number of such persons shall be provided to the Air District prior to operation of the arena.

Dirt Roads and Unpaved Areas
When a project is accessed by unpaved roads and or has unpaved driveways or parking areas, a PM_{10} emission estimate needs to be conducted using the CALEEMOD model. When the model's emission estimate demonstrates an exceedance of the 25 lbs of PM_{10}/day or 25 tons of PM_{10}/year APCD thresholds, the following mitigation is required:

For the unpaved road leading to the project location, implement one of the following:

a. For the life of the project, pave and maintain the driveway; or,

b. For the life of the project, maintain the private unpaved driveway with a dust suppressant (See Technical Appendix 4.3 for a list of APCD-approved suppressants) such that fugitive dust emissions do not impact off-site areas and do not exceed the APCD 20% opacity limit.

To improve the dust suppressant's long-term efficacy, the applicant shall also implement and maintain design standards to ensure vehicles that use the on-site unpaved road are physically limited (e.g., speed bumps) to a posted speed limit of 15 mph or less.

If the project involves a city or county owned and maintained road, the applicant shall work with the Public Works Department to ensure road standards are followed. The applicant may propose other measures of equal effectiveness as replacements by contacting the APCD Planning Division.

Special Event Mitigation
When a special event is accessed by unpaved roads and or has unpaved driveways or parking areas, a PM_{10} emission estimate must to be conducted using the CALEEMOD model. If the model shows an exceedance of the 25 lbs/day of PM_{10} significance threshold, the following mitigation is required on the day(s) of the special event:

a. Designated parking locations shall be:
   1. Paved when possible;
   2. Sited in grass or low cut dense vegetative areas; or,
   3. Treated with a dust suppressant such that fugitive dust emissions do not impact offsite areas and do not exceed the APCD 20% opacity limit (see Technical Appendix 4.3).

b. Any unpaved roads/driveways that will be used for the special event shall be maintained with an APCD-approved dust suppressant such that fugitive dust emissions do not impact offsite areas and do not exceed the APCD 20% opacity limit.

The applicant may propose alternative measures of equal effectiveness by contacting the APCD Planning Division.

3.6.4 Air Quality Nuisance Impacts

If a project has the potential to cause an odor or other nuisance problem which could impact a considerable number of people, then it may be considered significant. A project may emit a pollutant in concentrations that would not otherwise be significant except as a nuisance. Odor impacts on residential areas and other sensitive receptors warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, work sites and commercial areas.

When making a determination of odor significance, determine whether the project would result in an odor source located next to potential receptors within the distances indicated in Table 3-3. The Lead Agency should evaluate facilities not included in Table 3-3 or projects separated by greater distances than indicated in Table 3-3 if warranted by local conditions or special circumstances. The list is provided as a guide and, as such, is not all-inclusive.

If a project is proposed within the screening level distances in Table 3-3, the APCD Enforcement Division should be contacted for information regarding potential odor problems. For projects that involve new receptors located near an existing odor source(s), an information request should be submitted to the SLO County APCD to review the inventory of odor complaints for the nearest odor emitting facility(ies) during the previous three years. For projects involving new receptors to be located near an existing odor source where there is currently no nearby development, and for new odor sources locating near existing receptors, the information request and analysis should be based on a review of odor complaints for similar facilities.

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Table 3-3: Project Screening Distances for Nuisance Sources

PROJECT SCREENING DISTANCES	
Type of Operation	**Project Screening Distance**
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Coffee Roaster	1 mile
Composting Facility	1 mile
Fiberglass Manufacturing	1 mile
Food Processing Facility	1 mile
Oil Field	1 mile
Painting/Coating Operations (e.g. auto body shops)	1 mile
Petroleum Refinery	2 miles
Rendering Plant	1 mile
Sanitary Landfill	1 mile
Transfer Station	1 mile
Wastewater Treatment Plant	1 mile

Note: This list is provided as a guide and is not all-inclusive.

For a project that will be located near an existing odor source the project should be identified as having a significant odor impact, if it will be as close or closer to the any location that has experienced: 1) more than one confirmed complaint per year averaged over a three year period, or 2) three unconfirmed complaints per year averaged over a three year period.

If a proposed project is determined to result in potential odor problems, mitigation measures should be identified. For some projects, add-on controls or process changes, such as carbon absorption, incineration or an engineering modification to stacks/vents, can reduce odorous emissions. In many cases, however, the most effective mitigation strategy is the provision of a sufficient distance, or buffer zone, between the source and the receptor(s).

The SLO County APCD should be consulted whenever any of these additional special conditions may be applicable for a proposed project.

3.7 METHODS FOR CALCULATING PROJECT OPERATIONAL EMISSIONS

Operational phase air pollutant emissions from urban development can result from a variety of sources, including motor vehicles, wood burning appliances, natural gas and electric energy use, combustion-powered utility equipment, paints and solvents, equipment or operations used by various commercial and industrial facilities, construction and demolition equipment and operations, and various other sources. The amount and type of emissions produced, and their potential to cause significant impacts, depends on the type and level of development proposed. The following sections describe the recommended methods generally used to calculate emissions from motor vehicles, congested intersections and roadways, non-vehicular sources at residential and commercial facilities, and industrial point and area sources. Calculation and mitigation of construction emissions are described separately in Chapter 2.

Submittals describing project assessments must include spreadsheets with project calculations and a description of calculations so that the APCD can verify project quantification. **Calculations must be based on San Luis Obispo County default conditions unless the default settings are not representative of the project** (see below). The project report must detail assumptions made and provide sample calculations. Prior to finalizing the calculations, contact the APCD Planning and Outreach Division to review assumptions that do not have solid evidential support.

3.7.1 Determining Motor Vehicle Emissions

Motor vehicles are a primary source of long-term emissions from many residential, commercial, institutional, and industrial land uses. These land uses often do not emit significant amounts of air

pollutants directly, but cause or attract motor vehicle trips that do produce emissions. Such land uses are referred to as indirect sources.

Motor vehicle emissions associated with indirect sources should be calculated for projects which exceed or are within 10 % of the screening criteria listed in Table 1-1. Calculations should be performed using the latest version of CALEEMOD; this software incorporates the most recent vehicle emission factors from the EMFAC model (i.e., EMission FACtors) provided by the California Air Resources Board (ARB), and average trip generation factors published by the Institute of Transportation Engineers (ITE). The latest version of this program should always be used and can be downloaded free of charge at www.caleemod.com.

CalEEMod is a planning tool for estimating vehicle miles travel, fuel use and resulting emissions related to land use projects throughout California. The model calculates emissions of ROG, NO_x, CO, and CO_2 and other GHGs as well as dust and exhaust PM_{10} from vehicle use associated with new or modified development such as shopping centers, housing, commercial services, industrial land uses, etc. CALEEMOD includes many default values for parameters such as

- Seasonal Average Temperature;
- Humidity;
- Wood and gas stoves in a residential development and their usage;
- Fleet mix;
- Average vehicle speed and age;
- Average urban, rural, commute, shopping, and other trip type distances; and,
- Average trip rates for each land use.

When modeling project emissions, the user must specify that the project is located in SLO County so that the appropriate default values are used for the modeling. Motor vehicle-related defaults should not be changed without justification for doing so; solid documentation of rationale for any changes made need to be provided to APCD as part of the air quality report. Defaults that need to be evaluated and modified based on the project location and specifications include:

- **Trip Length:** For projects that are located in rural areas of the county where commercial services are not readily available, the trip length default values in the Operational – Mobile Vehicle Trips CalEEMod tab need be set at 13 miles for all trip distances; this happens automatically if the "Rural" Land Use Setting.

- **Fleet Mix:** Projects that attract a mix of vehicles which clearly differs from the default vehicle fleet in SLO County should make the appropriate changes to the FleetMix fraction section on the Annual, Summer, and Winter subtabs under the CalEEMod Operational – Mobile Vehicle Emissions Tab. Some examples include large commercial retail with heavy on-road truck use and heavy industry.

- **Dirt and Roads:** Projects which include on- and off-site dirt access roads should modify the default Road Dust component to accurately assess the project's PM_{10} emissions. For general traffic, SLO County APCD recommends using the ARB's unpaved road emission factor of 2 pounds of particulate matter emissions per one mile of unpaved vehicle mile traveled (www.arb.ca.gov/ei/areasrc/fullpdf/FULL7-10.pdf). This value is not appropriate for heavy duty diesel truck travel on unpaved roads.

  The following are the APCD recommended values to use in CalEEMod's Operational – Mobile Road Dust tab to yield PM10 emissions using variable values that emulate the ARB's above identified unpaved road emission factor:

  - Under the "Paved Road Dust" section:

    - Change the "% Pave" value to define your project's paved road component by entering the results of the following calculation:
      - In general, the total distance of paved road driving (miles) is determined with:
        - [1 – (A/B)] x 100%
        - Where A = The unpaved road distance to access the project
        - Where B is typically = to the county average one way trip distance of 13 miles)
  - Under the "Unpaved Road Dust" section:
    - Use a value of 9.3 for "Material Silt Content (%)"
    - Use a value of 0.1 for "Material Moisture Content (%)"
    - Use a value of 32.4 for "Mean Vehicle Speed (mph)"

  If the project has a total distance of unpaved road greater than 13 miles, the actual distance of the unpaved road should be compared to the total one-way trip length to determine the percentages of paved and unpaved road distances. In addition, the Trip Length in the Operational – Mobile Vehicle Trips tab needs to be updated by entering the total length of a one way trip for the project.

CalEEMod reports submitted as part of a CEQA evaluation need to include the following:

a. A winter, summer, and annual report;

b. The model files associated with the reports;

c. The SLO County APCD CEQA operational criteria pollutant thresholds should be compared to the Overall Operational winter total emissions (Note: ROG and NOx emission values are combined and compared to the 25 lb/day threshold);

d. The SLO County APCD CEQA operational GHG numerical threshold should be compared to the Overall Operational annual total CO2e emissions;

e. When summarizing modeling results in a CEQA document summary table always list the pollutants in the order they are listed in the model for ease of review; and,

f. Changes to any SLO County defaults need to be identified and a solid defensible explanation for those changes need to be provided to the APCD.

3.7.2 Non-Vehicular Emissions from Residential and Commercial Facilities

Non-vehicular emission sources associated with most residential and commercial development include energy use to power lights, appliances, heating and cooling equipment, evaporative emissions from paints and solvents, fuel combustion by lawnmowers, leaf blowers and other small utility equipment, residential wood burning, household products, and other small sources. Collectively, these are referred to as "area sources" and are important from a cumulative standpoint even though they may appear insignificant when viewed individually. The CALEEMOD model provides emissions estimations from area sources based on land use types; however it underestimates all emissions associated with electricity use and water consumption.

One CALEEMOD default area source value which has a significant impact on project emissions and may need to be changed is hearth fuel combustion – it is enabled by default and should be disabled or modified if the project excludes wood-burning devices.

3.7.3 Industrial Emission Sources

From an emissions standpoint, industrial facilities and operations are typically categorized as being "point" or "area" sources. Point sources are stationary and generally refer to a site that has one or more emission sources at a facility with an identified location (e.g., power plant, refinery, etc.). Area sources can be:

- Stationary or mobile and typically include categories of stationary facilities whose emissions are small individually, but may be significant as a group (e.g., gas stations, dry cleaners, etc.);
- Sources whose emissions emanate from a broad area (e.g., fugitive dust from storage piles and dirt roads, landfills, etc.); and,
- Mobile equipment used in industrial operations (e.g., drill rigs, loaders, haul-trucks, etc.).

Emissions from new, modified or relocated point sources are directly regulated through the APCD Rule 204 *New Source Review* requirements and facility permitting program. A general list of the type of sources affected by these requirements is provided in Section 4.1. New development that includes these source types should be forwarded to the SLO County APCD for a determination of APCD permitting and control requirements. Through the CEQA analysis, all air quality impacts are evaluated including the stationary point, area and mobile sources. While a specific piece of equipment or process may be covered by an APCD permit it is not excluded from the CEQA evaluation process.

3.7.4 Health Risk Assessment

Health risk is a common metric used by air quality and health scientists to describe the potential for an individual or group of people (population) in a given area to suffer serious health effects from long-term or short-term exposure to one or more toxic air contaminants (TACs). In July 2009, the California Air Pollution Control officers Association (CAPCOA) released a guidance document titled *HEALTH RISK ASSESSMENT FOR LAND USE PROJECTS*, which is available for download at www.capcoa.org. Attachment 1 of the CAPCOA document provides specific guidance on how to model emissions of toxic substances from various source types to determine the potential cancer risk as well as acute and chronic non-cancer health risks for nearby receptors.

A screening-level and/or refined health risk assessment (HRA) may be required for projects which may result in the exposure of sensitive receptors (e.g., school, hospital, dwelling unit(s), etc.) to TACs. Projects which involve the siting of **either** the TAC source itself **or** sensitive receptors in close proximity to a TAC should be evaluated for risk exposure. Various tools are available to perform a screening analysis from stationary sources impacting receptors (Type A projects).

For projects being impacted by existing sources (Type B projects), a distance table screening tool is available in the ARB Land Use Handbook which provides recommended buffer distances associated with types of most common toxic air contaminant sources (see Technical Appendix 4.2).

If a screening risk assessment shows that the potential risk exceeds the APCD's thresholds, then a more refined analysis may be required. The assessment should include the evaluation of both mobile and stationary sources. Risk assessments are normally prepared in a tiered manner, where progressively more input data is collected to refine the results. The refined analysis for the project should provide more accurate information for decision makers.

3.7.5 Greenhouse Gas Emissions

To quantify GHG emissions from a proposed development, the APCD recommends using CalEEMod for mobile sources and a partial characterization of area source impacts. In certain cases (e.g., drive-through restaurants), the use of alternative methodologies to quantify GHG impacts will be required. Please consult APCD Planning Division staff for current calculation methods.

3.8 OPERATIONAL EMISSION MITIGATION

Emissions from motor vehicles that travel to and from residential, commercial, and industrial land uses can generally be mitigated by reducing vehicle activity through site design (e.g., transit oriented design, infill, mixed use, etc.), implementing transportation demand management measures, using clean fuels and vehicles, and/or off-site mitigation. In addition, area source operational emissions from energy consumption from land uses can be mitigated by improving energy efficiencies, conservation measures and use of alternative energy sources. The mitigation measures in this section are intended to reduce emissions of ROG, NO_x, Diesel PM (DPM), Dust PM, and GHGs. The following three categories best capture the types of mitigation measures that can reduce air quality impacts from project operations:

- **Site Design Mitigation Measures:** Site design and project layout can be effective methods of mitigating air quality impacts of development. Land use development that incorporates urban infill, higher density, mixed use and walkable, bikeable, and transit oriented designs can significantly reduce vehicle activity and associated air quality impacts. As early as possible in the scoping phase of a project, the SLO County APCD recommends that developers and planners refer to the document *CREATING TRANSPORTATION CHOICES THROUGH DEVELOPMENT DESIGN AND ZONING* and Appendix E of the APCD Clean Air Plan *LAND USE AND CIRCULATION MANAGEMENT STRATEGIES.* APCD Planning Division staff is available to discuss project layout and design factors which can influence indirect source emissions and reduce mobile source emissions.

- **Energy Efficiency Mitigation Measures:** Residential and commercial energy use for lighting, heating and cooling is a significant source of direct and indirect air pollution nationwide. Reducing site and building energy demand will reduce emissions at the power plant source and natural gas combustion in homes and commercial buildings. The energy efficiency of both commercial and residential buildings can be improved by orienting buildings to maximize natural heating and cooling.

- **Transportation Mitigation Measures:** Vehicle emissions are often the largest continuing source of emissions from the operational phase of a development. Reducing the demand for single-occupancy vehicle trips is a simple, cost-effective means of reducing vehicle emissions. In addition, using cleaner fueled vehicles or retrofitting equipment with emission control devices can reduce the overall emissions without impacting operations. In today's marketplace, clean fuel and vehicle technologies exist for both passenger and heavy-duty applications.

3.8.1 Guidelines for Applying ROG, NO_x and PM_{10} Mitigation Measures

In general, projects which do not exceed the 25 lb/day ROG+NO_x threshold do not require mitigation. For projects which exceed this threshold, the SLO County APCD has developed a list of mitigation strategies for residential, commercial and industrial projects. Alternate mitigation measures may be suggested by the project proponent if the APCD-suggested measures are not feasible. Project mitigation recommendations should follow the guidelines listed below and summarized in Table 3-4:

a. Projects with the potential to generate 25 - 29 lbs/day of combined ROG + NO_x or PM_{10} emissions should select and implement at least **8** mitigation measures from the list;

b. Projects generating 30 - 34 lbs./day of combined ROG + NO_x or PM_{10} emissions should select and implement at least **14** mitigation measures list;

c. Projects generating 35 - 50 lbs./day of combined ROG + NO_x or PM_{10} emissions should implement at least **18** measures from the list;

d. Projects generating 50 lbs/day or more of combined ROG + NO_x or PM_{10} emissions should select and implement **all feasible** measures from the list. Further mitigation measures may also be necessary, including off-site measures, depending on the nature and size of the project and the effectiveness of the mitigation measures proposed; and,

e. Projects generating 25 tons per year or more of combined ROG + NO_x or PM_{10} emissions will need to implement **all feasible** measures from the list as well as **off-site** mitigation measures, depending on the nature and size of the project and the effectiveness of the onsite mitigation measures proposed.

Table 3-4: Mitigation Threshold Guide

Combined ROG+NO_x or PM_{10} Emissions (lbs/day)	Mitigation Measures Recommended	
	Residential, Commercial or Industrial	Off-Site Mitigation
< 25	None	None
25 – 29	8	*
30 – 34	14	*
35 – 50	18	*
≥ 50	All Feasible	*
≥ 25 ton/yr	All Feasible	Yes

* Will be dependent on the effectiveness of the mitigation measures, location of project and high vehicle dependent development. Examples of projects potentially subject to off-site mitigation include: rural subdivisions, drive-through applications, commercial development located far from urban core.

3.8.2 Standard Mitigation Measures

The recommended standard air quality mitigation measures have been separated according to land use (i.e., residential, commercial and industrial), measure type (i.e., site design, energy efficiency and transportation) and pollutant reduced (i.e., ozone, particulate, diesel PM, and GHGs). Any project generating 25 lbs/day or more of ROG + NO_x or PM_{10} should select the applicable number of mitigation measure as outlined above from Table 3-5 to reduce the air quality impacts from the project below the significance thresholds. This table also provides recommended mitigations for diesel PM and GHG emissions. For projects that exceed the DPM threshold (i.e., 1.25 lbs/day) due to significant diesel vehicle activity (e.g., mining operations, distribution facilities, etc.), project emissions must be recalculated to demonstrate that the project emissions are below the APCD DPM threshold of significance when mitigation measures are included.

Table 3-5: Mitigation Measures

LAND USE Residential (R) Commercial (C) Industrial (I)	Measure Type	MITIGATION MEASURE	POLLUTANT REDUCED Ozone (O) Particulate (P) Diesel Particulate Matter (DPM) Greenhouse Gas (GHG)
R, C, I	Site design, Transportation	Improve job / housing balance opportunities within communities.	O, P, GHG
R, C, I	Site design	Orient buildings toward streets with automobile parking in the rear to promote a pedestrian-friendly environment.	O, P, GHG
R, C, I	Site design	Provide a pedestrian-friendly and interconnected streetscape to make walking more convenient, comfortable and safe (including appropriate signalization and signage).	O, P, GHG
R, C, I	Site design	Provide good access to/from the development for pedestrians, bicyclists, and transit users.	O, P, GHG
R, C, I	Site design	Incorporate outdoor electrical outlets to encourage the use of electric appliances and tools.	O, P, GHG
R, C, I	Site design	Provide shade tree planting in parking lots to reduce evaporative emissions from parked vehicles. Design should provide 50% tree coverage within 10 years of construction using low ROG emitting, low maintenance native drought resistant trees.[3]	O P GHG
R, C, I	Site design	Pave and maintain the roads and parking areas	P
R, C, I	Site design	Driveway design standards (e.g., speed bumps, curved driveway) for self-enforcing of reduced speed limits for unpaved driveways.	P
R, C, I	Site design	Use of an APCD-approved suppressant on private unpaved roads leading to the site, unpaved driveways and parking areas; applied at a rate and frequency that ensures compliance with APCD Rule 401, visible emissions and ensures offsite nuisance impacts do not occur.	P
R, C	Site design	Development is within 1/4 mile of transit centers and transit corridors.	O, P, GHG
R, C	Site design	Design and build compact communities in the urban core to prevent sprawl.	O, P, GHG
R, C	Site design	Increase density within the urban core and urban reserve lines.	O, P, GHG
R, C	Site design	For projects adjacent to high-volume roadways or railroad idling zones, design project to include provide effective buffer zone between the source and the receptor.	DPM
R, C	Site design	For projects adjacent to high-volume roadways, plant vegetation[4] between receptor and roadway.	DPM, P
R	Site design	No residential wood burning appliances.	O, P, GHG
R, C, I	Site design, Transportation	Incorporate traffic calming modifications to project roads, such as narrower streets, speed platforms, bulb-outs and intersection designs that reduce vehicles speeds and encourage pedestrian and bicycle travel.	O, P, GHG
R, C, I	Site design, Transportation	Increase number of connected bicycle routes/lanes in the vicinity of the project.	O, P, GHG
R, C, I	Site design, Transportation	Provide easements or land dedications and construct bikeways and pedestrian walkways.	O, P, GHG
R, C, I	Site design, Transportation	Link cul-de-sacs and dead-end streets to encourage pedestrian and bicycle travel to adjacent land uses.	O, P, GHG
R, C, I	Site design, Transportation	Project is located within one-half mile of a 'Park and Ride' lot or project installs a 'Park and Ride' lot with bike lockers in a location of need defined by SLOCOG.	O, P, GHG
C, I	Site design, Transportation	Provide onsite housing for employees.	O, P, GHG

3 Trees must be maintained for life of project
4 Certain types of vegetation provide maximum effectiveness. Vegetation must be maintained over the life of the project.

LAND USE Residential (R) Commercial (C) Industrial (I)	Measure Type	MITIGATION MEASURE	POLLUTANT REDUCED Ozone (O) Particulate (P) Diesel Particulate Matter (DPM) Greenhouse Gas (GHG)
C, I	Site design, Transportation	Implement on-site circulation design elements in parking lots to reduce vehicle queuing and improve the pedestrian environment.	O, P, GHG
C, I	Site design, Transportation	Provide employee lockers and showers. One shower and 5 lockers for every 25 employees are recommended.	O, P, GHG
C, I	Site design, Transportation	Parking space reduction to promote bicycle, walking and transit use.	O, P, GHG
R	Site design	Tract maps resulting in parcels of one-half acre or les shall orient at least 75% of all lot lines to create easy due south orientation of future structures.	GHG
R	Site design	Trusses for south-facing portions of roofs shall be designed to handle dead weight loads of standard solar-heated water and photovoltaic panels. Roof design shall include sufficient south-facing roof surface, based on structures size and use, to accommodate adequate solar panels. For south facing roof pitches, the closest standard roof pitch to the ideal average solar exposure shall be used.	O, GHG
R, C, I	Energy efficiency	Increase the building energy rating by 20% above Title 24 requirements. Measures used to reach the 20% rating cannot be double counted.	O, GHG
R, C, I	Energy efficiency	Plant drought tolerant, native shade trees along southern exposures of buildings to reduce energy used to cool buildings in summer.[5]	O, GHG
R, C, I	Energy efficiency	Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available locally if possible.	O, DPM, GHG
R, C, I	Energy efficiency	Install high efficiency heating and cooling systems.	O GHG
R, C, I	Energy efficiency	Orient 75 percent or more of homes and/or buildings to be aligned north / south to reduce energy used to cool buildings in summer.	O GHG
R, C, I	Energy efficiency	Design building to include roof overhangs that are sufficient to block the high summer sun, but not the lower winter sun, from penetrating south facing windows (passive solar design).	O, GHG
R, C, I	Energy efficiency	Utilize high efficiency gas or solar water heaters.	O, P, GHG
R, C, I	Energy efficiency	Utilize built-in energy efficient appliances (i.e. Energy Star®).	O, P GHG
R, C, I	Energy efficiency	Utilize double-paned windows.	O, P, GHG
R, C, I	Energy efficiency	Utilize low energy street lights (i.e. sodium).	O, P, GHG
R, C, I	Energy efficiency	Utilize energy efficient interior lighting.	O, P, GHG
R, C, I	Energy efficiency	Utilize low energy traffic signals (i.e. light emitting diode).	O, P, GHG
R, C, I	Energy efficiency	Install door sweeps and weather stripping (if more efficient doors and windows are not available).	O, P, GHG
R, C, I	Energy efficiency	Install energy-reducing programmable thermostats.	O, P, GHG
R, C, I	Energy efficiency	Participate in and implement available energy-efficient rebate programs including air conditioning, gas heating, refrigeration, and lighting programs.	O, P, GHG

5 Trees must be maintained for the life of the project

LAND USE Residential (R) Commercial (C) Industrial (I)	Measure Type	MITIGATION MEASURE	POLLUTANT REDUCED Ozone (O) Particulate (P) Diesel Particulate Matter (DPM) Greenhouse Gas (GHG)
R, C, I	Energy efficiency	Use roofing material with a solar reflectance values meeting the EPA/DOE Energy Star® rating to reduce summer cooling needs.	O, P, GHG
R, C, I	Energy efficiency	Utilize onsite renewable energy systems (e.g., solar, wind, geothermal, low-impact hydro, biomass and bio-gas).	O, P, GHG
R, C, I	Energy efficiency	Eliminate high water consumption landscape (e.g., plants and lawns) in residential design. Use native plants that do not require watering and are low ROG emitting.	O, GHG
R, C, I	Energy efficiency	Provide and require the use of battery powered or electric landscape maintenance equipment for new development.	O, GHG
C, I	Energy efficiency	Use clean engine technologies (e.g., alternative fuel, electrification) engines that are not subject to regulations.	O, DPM, GHG
R, C, I	Transportation	Provide and maintain a kiosk displaying transportation information in a prominent area accessible to employees and patrons.	O, P, GHG
R, C, I	Transportation	Develop recreational facility (e.g., parks, gym, pool, etc.) within one-quarter of a mile from site.	O, P, GHG
R, C, I	Transportation	If the project is located on an established transit route, provide improved public transit amenities (i.e., covered transit turnouts, direct pedestrian access, covered bench, smart signage, route information displays, lighting etc.).	O, P, GHG
R, C, I	Transportation	Project provides a display case or kiosk displaying transportation information in a prominent area accessible to employees or residents.	O, P, GHG
R, C, I	Transportation	Provide electrical charging station for electric vehicles.	O, P, GHG
R, C, I	Transportation	Provide neighborhood electric vehicles / car share program for the development.	O, P, GHG
R, C, I	Transportation	Provide bicycle-share program for development.	O, P, GHG
R, C, I	Transportation	Provide preferential parking / no parking fee for alternative fueled vehicles or vanpools.	O, P, GHG
R, C, I	Transportation	Provide bicycle lockers for existing 'Park and Ride' lots where absent or insufficient.	O, P, GHG
R C I	Transportation	Provide vanpool, shuttle, mini bus service (alternative fueled preferred).	O, P, DPM, GHG
C, I	Transportation	Provide secure on-site bicycle indoor storage, lockers, or racks.	O, P, GHG
C, I	Transportation	For large developments, provide day care facility on site.	O, P, GHG
C, I	Transportation	Provide on-site bicycle parking both short term (racks) and long term (lockers, or a locked room with standard racks and access limited to bicyclist only) to meet peak season maximum demand. One bike rack space per 10 vehicle/employee space is recommended.	O, P, GHG
C, I	Transportation	On-site eating, refrigeration and food vending facilities	O, P, GHG
C, I	Transportation	Implement a Transportation Choice Program to reduce employee commute trips. The applicant shall work with Rideshare for free consulting services on how to start and maintain a program.	O, P, GHG
C, I	Transportation	Provide incentives (e.g., bus pass, "Lucky Bucks", etc.) to employees to carpool/vanpool, take public transportation, telecommute, walk bike, etc.	O, P, GHG
C, I	Transportation	Implement compressed work schedules (i.e., 9–80s or 4–10s).	O, P, GHG
C, I	Transportation	Implement a telecommuting program.	O, P, GHG
C, I	Transportation	Implement a lunchtime shuttle to reduce single occupant vehicle trips.	O, P, GHG

LAND USE Residential (R) Commercial (C) Industrial (I)	Measure Type	MITIGATION MEASURE	POLLUTANT REDUCED Ozone (O) Particulate (P) Diesel Particulate Matter (DPM) Greenhouse Gas (GHG)
C, I	Transportation	Include teleconferencing capabilities, such as web cams or satellite linkage, which will allow employees to attend meetings remotely without requiring them to travel out of the area.	O, P, DPM, GHG
C, I	Transportation	If the development is or contains a grocery store or large retail facility, provide customers home delivery service in clean fueled vehicles	O, P, DPM, GHG
C, I	Transportation	At community event centers (i.e., amphitheaters, theaters, and stadiums) provide valet bicycle parking.	O, P, GHG
C, I	Transportation	Implement a "No Idling" program for heavy-duty diesel vehicles, which includes signage, citations, etc.	DPM, GHG
C, I	Transportation	Develop satellite work sites.	O, GHG
C, I	Transportation	Require the installation of electrical hookups at loading docks and the connection of trucks equipped with electrical hookups to eliminate the need to operate diesel-powered TRUs at the loading docks.	DPM, GHG
C, I	Transportation	If not required by other regulations (ARB's on-road or off-road diesel), restrict operation to trucks with 2007 model year engines or newer trucks.	O, DPM, GHG
C, I	Transportation	If not required by other regulations (ARB's on-road or off-road diesel), require or provide incentives to use diesel particulate filters for truck engines.	DPM
R	Transportation	Provide storage space in garage for bicycle and bicycle trailers, or covered racks / lockers to service the residential units.	O, P, GHG
R	Transportation	Provide free-access telework terminals and/or wi-fi access in multi-family projects.	O, P, GHG
C	Transportation	Develop core commercial areas within 1/4 to 1/2 miles of residential housing or industrial areas.	O, P, GHG

3.8.3 Off-Site Mitigation

Operational phase emissions from large development projects that cannot be adequately mitigated with on-site mitigation measures alone will require off-site mitigation in order to reduce air quality impacts to a level of insignificance if emissions cannot be adequately mitigated with on-site mitigation measures alone. Whenever off-site mitigation measures are deemed necessary, it is important that the developer, lead agency and APCD work together to develop and implement the measures to ensure successful outcome. This work should begin at least six months prior to issuance of occupancy permits for the project.

The first step in determining whether off-site mitigation is required is to compare the estimated operational phase emissions to the APCD significance thresholds. If the sum of ROG + NO_x emissions exceeds 25 tons/year, off-site mitigation will be required. Off-site mitigation may also be required for development projects were emissions exceed the 25 lb/day threshold. Examples of projects potentially subject to off-site mitigation include rural subdivisions, drive-through facilities and commercial development located far from the urban core.

If off-site mitigation is required, potential off-site mitigation measures may be proposed and implemented by the project proponent following APCD approval of the appropriateness and effectiveness of the proposed measure(s). Alternatively, the project proponent can pay a mitigation fee based on the amount

of emission reductions needed to bring the project impacts below the applicable significance threshold. The APCD shall use these funds to implement a mitigation program to achieve the required reductions. The following outlines how to calculate the amount of off-site mitigation fees required for a given project:

a. Calculate the operational phase emissions for the project using CALEEMOD, or an equivalent calculation tool approved by the APCD; include the emission reduction benefits of any onsite mitigation measures included in the project. Any project emissions calculated to be above the APCD significance thresholds are defined as excess emissions and must be reduced below the emission thresholds by off-site mitigation.

b. Project emissions above the lbs/day threshold must be converted to tons/year and divided by the daily-to-annual equity ratio value of 5.5 to obtain an equivalent tons/year value.

c. The excess tons/year emissions are then multiplied by the project life (i.e., 50 years for residential projects and 25 years for commercial projects) and the most current cost-effectiveness[6] value as approved for the Carl Moyer grant program.

Off-site emission reductions can result from either stationary or mobile sources, but should relate to the on-site impacts from the project in order to provide proper "nexus" for the air quality mitigation. For example, NO_x emissions from increased vehicle trips from a large residential development could be reduced by funding the expansion of existing transit services in close proximity to the development project to reduce NO_x emissions. An off-site mitigation strategy should be developed and agreed upon by all parties prior to the start of construction.

The off-site mitigation strategies include but are not limited to the list provided below:

- Develop or improve park-and-ride lots;
- Retrofit existing homes in the project area with APCD-approved natural gas combustion devices;
- Retrofit existing homes in the project area with energy-efficient devices;
- Retrofit existing businesses in the project area with energy-efficient devices;
- Construct satellite worksites;
- Fund a program to buy and scrap older, higher emission passenger and heavy-duty vehicles.
- Replace/repower transit buses;
- Replace/repower heavy-duty diesel school vehicles (i.e. bus, passenger or maintenance vehicles);
- Fund an electric lawn and garden equipment exchange program;
- Retrofit or repower heavy-duty construction equipment, or on-road vehicles;
- Install bicycle racks on transit buses;
- Purchase Verified Diesel Emission Control Strategies (VDECS) for local school buses, transit buses or construction fleets;
- Install or contribute to funding alternative fueling infrastructure (i.e. fueling stations for CNG, LPG, conductive and inductive electric vehicle charging, etc.);
- Fund expansion of existing transit services;
- Fund public transit bus shelters;
- Subsidize vanpool programs;
- Subsidize transportation alternative incentive programs;
- Contribute to funding of new bike lanes;
- Install bicycle storage facilities; and,

6 Cost-effectiveness is a measure of the dollars needed to reduce a ton of emissions. The cost-effectiveness used to calculate off-site mitigation is based on the Carl Moyer Grant Program and is updated on a periodic basis. The Carl Moyer cost effectiveness value as of 2009 is $16,000 per ton. There will be a 10% administration fee charged for grant administration.

- Provide assistance in the implementation of projects that are identified in city or county Bicycle Master Plans.

3.9 EVALUATION OF PROJECT CHANGES

If the scope or project description is modified after final project approval, the project will need to be re-evaluated by the APCD to determine if additional air quality impacts will result from the proposed modifications. If additional impacts are expected, the cumulative impacts from the total project must be evaluated.

3.10 MITIGATION MONITORING

In order to ensure the operational phase air quality mitigation measures and project revisions identified in the EIR or mitigated negative declarations are implemented, the APCD may conduct site visits to ensure that the mitigation measures are fully implemented. The lead agency may also review project mitigation for consistency with project conditions. Beyond verifying mitigation implementation, this monitoring can result in compliance requirements if mitigation measures are not sufficiently being implemented.

4 TECHNICAL APPENDICES

4.1 BUILDING PERMIT REQUIREMENTS FOR FACILITIES POTENTIALLY SUBJECT TO AIR DISTRICT PERMITS

WHAT IS THE SAN LUIS OBISPO COUNTY AIR POLLUTION CONTROL DISTRICT?

The San Luis Obispo County Air Pollution Control District (APCD) regulates stationary sources of air pollution such as factories, industrial sites, and gasoline stations. APCD regulations apply to many manufacturing and industrial procedures as well as such things as evaporative compounds, gasoline, paint, odors, incineration, smoke and open burning.

Government Code section 65850.2 identifies certain air pollution information that cities and counties are required to collect for new building and development projects. Sections 42301.6 to 42301.9 (AB 3205) of the California Health & Safety Code address the release of hazardous air contaminants near schools, and discuss requirements for air district permits for new or modified facilities.

The following overview describes how the law may affect you.

NEW BUILDING PERMIT REQUIREMENTS

Under the law, final certificates of occupancy may not be issued unless certain requirements are met. One of the requirements is that all applicants must comply with APCD permit regulations, or make a showing to the APCD that the permit regulations do not apply to their particular project.

A questionnaire will accompany all building permit application packets distributed by City and County Planning and Building Departments. This questionnaire pertains to facility location and equipment, processes, and materials which may require an APCD permit This questionnaire should be completed and returned to the Planning and Building Department for initial screening and processing. If an APCD permit is required, and if air emissions occur within 1000 ft. of a school, focused notification of nearby residents and student's parents may be required.

All planning and building departments have a description of typical facility types, processes, and equipment that require an APCD Permit to Operate. The table at the back of the attached questionnaire provides a list of these facilities. Operations which usually require an APCD Permit include:

- Solvent cleaners (degreasers)
- Coating of metal parts and products
- Printing and coating operations
- Auto body shops
- Paint spray booths
- Storage of organic liquids
- Wood furniture and cabinet coating
- Air pollution control equipment
- Gasoline stations or any gasoline dispensing facility
- Sandblasting
- Equipment which handles asbestos, beryllium, benzene, hexavalent chromium, mercury, or vinyl chloride.
- Other solvent uses

It should be noted that all residential construction is exempt from these requirements.

If you are unsure whether or not your project is subject to permit requirements, the necessary information can be obtained by contacting the APCD and describing the proposed project. APCD staff can then determine if an application must be filed.

REQUIREMENTS FOR EXISTING OR PROPOSED PROJECTS NEAR SCHOOLS

Under the California Health and Safety Code, there are specific requirements which must be met by both the APCD and existing or proposed commercial or industrial facilities near a school.

Upon receipt of the facility operations questionnaire, the APCD will evaluate it for equipment or processes requiring a permit and for proximity to sensitive receptors. This initial screening will occur within fourteen (14) days of

receipt of the questionnaire. The APCD will notify the applicant and the planning agency if further action is necessary under the law and/or the APCD permit process. If no further action is required, then the APCD will sign off on the questionnaire and return it to the Planning Agency. If hazardous materials may be used at the facility, APCD will also forward it to the Environmental Health Department or, for projects located within the City of San Luis Obispo, the San Luis Obispo Fire Department. If additional action is required under the law or the APCD permitting process, a description of required actions will be included in the letter sent to the planning department and the applicant.

CONSTRUCTION OF NEW SCHOOLS

For construction of new schools, **any person or agency preparing an Environmental Impact Report for a proposed school site must consult with the city, county, and the APCD to identify facilities within one-quarter mile of the proposed school site which may emit hazardous air emissions, or have the potential to explode or catch fire.** The city, county, and APCD have 30 days to provide this information to the person or agency seeking it. This requirement is spelled out in the Public Resources Code Sec. 21151.8, Subd.(a) (4).

FORESEEABLE THREAT OF RELEASE OF HAZARDOUS AIR CONTAMINANT

Under certain conditions, the law requires the APCD to take action when there is a reasonable threat of release of a hazardous air contaminant. APCD action is required if:

1. The release is predicted from a facility located within 1000 feet of a school; and
2. The release has the potential to impact persons at the school to the extent that a public health threat or nuisance could result.

When the release of a hazardous air contaminant is forecast, the APCD must notify the agency responsible for administering the hazardous materials policy. In addition, the APCD may respond to this reasonable threat of release by:

1. Issuing an immediate order to prevent the release; or,
2. Mitigating the foreseeable threat of a release, pending a hearing; or,
3. Applying to the APCD Hearing Board for issuance of an Order of Abatement.

Furthermore, if the principal of a school contacts the APCD to request an investigation of odors or possible air pollution sources as the cause of illness among school children, within 24 hours the APCD must respond and notify the city or county official responsible for administering hazardous materials policy and the fire department having jurisdiction over the school.

FOR HELP

This handout provides answers to commonly asked questions about new building permit and occupancy requirements. If you need additional information regarding these requirements, please call (805) 781- 5912.

FACILITY OPERATIONS QUESTIONNAIRE

For the Incorporated and Unincorporated Areas of San Luis Obispo County

State law (AB 3205) requires an applicant for a commercial/industrial development project, building permit or occupancy permit to provide information to the Air Pollution Control District (APCD) indicating whether hazardous materials or certain equipment or processes will be used in or at the facility. Such uses may require a permit from the APCD and/or a Hazardous Materials Business Plan. **This law prohibits a City or County from issuing a final certificate of occupancy until the applicant or future building occupant has complied with the provisions of the law.** The law may also impose certain public noticing requirements for a facility that handles hazardous materials and is located within 1,000 feet of the outer boundary of a school (kindergarten through 12th grade). Additional information explaining the requirements of this law is attached to this form.

TO DETERMINE WHETHER YOUR BUSINESS IS SUBJECT TO THESE REQUIREMENTS, PLEASE COMPLETE THIS QUESTIONNAIRE:

Business Name (Doing Business As):		Contact Person:	Phone ( )
Mailing Address:	City	State	Zip
Nearest Cross Streets:			

	YES	NO
1. WILL THE INTENDED OCCUPANT(S) INSTALL OR USE ANY PIECE OF EQUIPMENT LISTED ON THE ATTACHED LIST? *(If YES forward to Air Pollution Control District.)*	☐	☐
2. WILL THE INTENDED OCCUPANT(S) STORE, HANDLE OR USE ANY HAZARDOUS MATERIALS LISTED ON THE ATTACHED LIST? *(If YES forward to Air Pollution Control District.)*	☐	☐

Briefly Describe Nature of the Intended Business Activity:

Name of Owner or Authorized Agent: Title:

I declare under penalty of perjury that, to the best of my knowledge and belief, the responses made herein are true and correct:

Agency Project ID Number: .

Signature of Owner or Authorized Agent:

Signed: _____ Date: _____

Multiple or Unknown Occupants

☐ Check if Applicable

FOR PLANNING DEPARTMENT USE ONLY

	YES	NO
Forwarded to APCD for processing:	☐	☐

Planning Dept. Official _____ Date _____

FOR APCD USE ONLY

	YES	NO
APCD permit required	☐	☐
Potential hazardous materials	☐	☐
Within 1000' of a school	☐	☐
Public notice required	☐	☐

FORWARDED TO:	YES	NO
ENV. HEALTH	☐	☐
S.L.O. CITY FIRE	☐	☐

PROCESSED AND RETURNED TO PLANNING DEPARTMENT BY:

_____
Air Pollution Control District Official Date

FINAL CHECK-OFF

_____
Planning Department Official Date

PERMIT CATEGORIES

Businesses with the following equipment, operations or materials will require clearance from the Air Pollution Control District before obtaining a Certificate of Occupancy. Businesses which store, handle, or use hazardous materials will require clearance from the San Luis Obispo City Fire Department or San Luis Obispo County Environmental Health before obtaining a Certificate of Occupancy.

CHEMICALS
Ethylene Oxide Sterilizers
Acid Chemical Milling
Evaporators, Dryers, and Stills
Processing Organic Materials
Dry Chemical Mixing and storage

COATINGS AND SURFACE PREPARATION
Abrasive Blasting Equipment
Coating and Painting (not house-painting)
Paint, Stain, and Ink Manufacturing
Printers

COMBUSTION
Piston Internal Combustion Engines (50 hp or larger)
Incinerators and Crematories
Boilers and Heaters (2 million BTU/hr or larger)

ELECTRONICS
Solder Levelers
Wave Solder Machines
Vapor Degreasers
Fume Hood Scrubbers
Electrolytic Plating
Silicone Chip Manufacturing

FOOD
Smokehouses
Feed and Grain Mills
Coffee Roasters
Bulk Flour and Grain Storage

METALS
Metal Melting Devices
Hot Dip Galvanizing
Cadmium or Chrome Plating
Chromic Acid Anodizing

PETROLEUM FUELS MARKETING
Gasoline and Alcohol Bulk Plants and Terminals
Gasoline and Alcohol Fuel Dispensing

ROCK AND MINERAL
Hot Asphalt Batch Plants
Sand, Rock, and Aggregate Plants
Concrete Batch, Concrete Mixers, and Silos
Brick Manufacturing

SOLVENT USE
Vapor and Cold Degreasing
Solvent and Extract Dryers
Dry Cleaning

OTHER
Asphalt Roofing Tanks
Aqueous Waste Neutralization
Landfill Gas Flare or Recovery Systems
Waste Disposal and Reclamation Units
Grinding Booths and Rooms
Oil Field Exploration or Production
Plastic/Fiberglass Manufacturing
Soil Aeration/Reclamation
Storage of Organic Liquids
Powder Coating
Fiberglass Chopper Guns
Waste Water Treatment Works

EXAMPLES OF HAZARDOUS MATERIALS

Ammonia
Acids and Bases
Chlorine
Compressed Gases
Corrosives
Cryogenic Fluids
Explosives
Fertilizers
Flammable Liquids and Solids
Gasoline
Hazardous Material Mixtures
Herbicides
Industrial Cleaners
Infectious/Biological Materials
Oxidizing Materials
Paint Thinners
Paints
Pesticides
Petroleum Products
Poisons
Pyrophoric/Hypergolic Materials
Radioactives
Solvents
Waste Oils
Water Reactives
Welding Gases

NOTE: Other equipment not listed here that is capable of emitting air contaminants may require a San Luis Obispo County Air Pollution Control District Permit. If there are any questions, contact the APCD at (805) 781-5912. For information on Hazardous Materials located within the City of San Luis Obispo contact the San Luis Obispo Fire Department at (805) 781-7380. All other areas contact County Environmental Health at (805) 781-5544.

IF YOU INSTALL AND/OR OPERATE EQUIPMENT WITHOUT A REQUIRED PERMIT, YOU MAY BE SUBJECT TO LEGAL ACTION AND PENALTIES OF UP TO $50,000 PER DAY FOR EACH DAY OF VIOLATION

TIMELINE AND IMPLEMENTATION PROCESS

I. Outside Agency (Planning Department) Responsibilities

A. Planning Department distributes Development Plan (DP) Application Packet to applicant. This packet includes AB3205 information.

B. Applicant completes the DP packet, and returns it to the Planning Department.

C. Planning Department conducts **initial screening** of Hazardous Materials Questionnaire (hereafter referred to as the Questionnaire). This screening consists of reviewing the Questionnaire for answers to the following questions:

1. Will the intended occupant(s) install or use any of the equipment listed on attached list ("San Luis Obispo County APCD Permit Categories").

2. Will the intended occupant store, handle, or use hazardous materials in any quantity?

D. The Planning Department performs one of the following actions, based on the response to the questions listed in Section I.C. above:

1. If the answers to Questions #1 and #2 are **NO**, then this project is exempt from AB3205 requirements, and from APCD permitting action. The Planning Department can sign off on the Questionnaire, indicating that the project is exempt from further action under AB3205. This questionnaire is then retained as part of the project file maintained by the Planning Department.

2. If the answer to either Question #1 or Question #2 is **YES**, the questionnaire is forwarded to the APCD for further review.

II. APCD Responsibilities

APCD reviews the Questionnaires received from the Planning Department. Within 14 days, one of the following determinations will be made:

A. If the answer to question 1 on the Facility Operations Questionnaire is **NO** and the APCD agrees, complete the appropriate boxes on the rest of the form and return to the Planning Department.

B. If the answer to question 1 on the Facility Operations Questionnaire is **NO** but the APCD disagrees, continue to sections C and D below.

C. APCD Permit Required/Exempt from AB3205 Requirements.

If the answer to Question #1 is **YES**, and the facility is not located within 1000 feet of a school, then the project is exempt from further processing under AB3205, but **IS** subject to APCD permitting requirements. As a result, the APCD will take the following actions:

Within 7 days of receipt of the questionnaire from the Planning Department, the APCD will:

- Review the Questionnaire to determine if the source stores, handles or uses hazardous materials (Question #2 on the form). If the answer to that question is **YES**, then APCD completes the appropriate sections of the questionnaire and forwards it to either the City of San Luis Obispo Fire Department (if project is within the City limits), or Environmental Health (all other areas). A memo to County Planning will be sent summarizing action taken.

- If Hazardous Materials storage, usage or handling is not proposed on-site, APCD Planning Staff will indicate that on the questionnaire. The "APCD Permit Required" box will be checked "YES", and the form returned to the Planning Department.

The APCD Engineering Staff sends a letter to the project applicant indicating that this project **IS** subject to APCD permit. Accompanying this letter will be an ATC (Authority to Construct) application, and other explanatory information.

Upon receipt of an ATC application, the APCD has 30 days to determine if the application is complete. A letter of completeness (or incompleteness) is sent to the applicant prior to the end of the 30-day period. If the application is incomplete, the APCD will request additional information in the aforementioned letter. If the application is complete, then the APCD will issue a completeness letter indicating that they have 180 days to issue an ATC.

After project construction is complete, the applicant must indicate in writing to the APCD that construction is complete. A field inspection will then be conducted by APCD staff to determine compliance with applicable APCD Rules and Regulations. Upon verification of compliance, a Permit-to-Operate (PTO) for the subject facility is issued by the APCD.

D. APCD Permit Required/Subject to AB3205 Requirements

If the answer to Questions #1 is **YES,** and the facility is within 1000 feet of a school, the proposed project will be subject to the APCD permitting process and AB3205 Public Noticing Requirements. The APCD will perform the following actions:

Within 7 days of receipt of the questionnaire from the Planning Department, the APCD will:

- Review the Questionnaire to determine if the source stores, handles or uses hazardous materials (Question #2 on the form). If the answer to that question is **YES**, then APCD completes the appropriate sections of the questionnaire and forwards it to either the City of San Luis Obispo Fire Department (if project is within the City limits), or Environmental Health (all other areas). A memo to County Planning will be sent summarizing action taken.

- If Hazardous Materials storage, usage, or handling is not proposed on-site, APCD Planning Staff will indicate as such on the questionnaire.

The APCD Engineering Staff sends a letter to the project applicant indicating that this project **IS** subject to APCD permit and AB3205 Public Noticing requirements. Accompanying this letter will be an ATC application, a description of public noticing requirements and other explanatory information.

Upon receipt of an ATC application, the APCD has 30 days to determine if the application is complete. A letter of completeness (or incompleteness) is sent to the applicant prior to the end of the 30-day period. If the application is incomplete, the APCD will request additional information in the aforementioned letter.

When the APCD has deemed the ATC application complete, the applicant will then be required to comply with the public noticing requirements of the California Health and Safety Code, Section 42301.6. Compliance with the public noticing requirements must be demonstrated prior to APCD action on the ATC application. These requirements are as follows:

- The Air Pollution Control Officer (APCO) shall, **at the expense of the permit applicant**, distribute (or mail) a public notice to the parents or guardians of children enrolled in ANY school that is located within 1/4 mile of the proposed project site, and to each address within a 1000 ft. radius of the proposed source. An assessor's parcel map will be used to determine the area encompassing addresses within the 1000 ft. radius of the proposed project.

- The public noticing period extends for 30 days, and MUST begin at least 30 days prior to the APCD taking final action on the ATC application for the proposed project. This notice may be combined with any other notice on the project or permit, which is required by law. The APCO shall review and consider all public comments received during the 30 days after the notice is distributed, and shall include written responses to the comments in the permit application file prior to taking final action on the application.

State law requires the APCD to approve or deny the ATC within 180 days of the date on which the A/C application was deemed complete. The public noticing period and the APCD response to public comments MUST occur within this time period. The APCD cannot issue the ATC until public noticing requirements for AB3205 have been satisfied.

After project construction is completed, the applicant must indicate **in writing** to the APCD that construction is complete. A field inspection will then be conducted by APCD staff to determine compliance with applicable APCD Rules and Regulations. Upon verification of compliance, a PTO or the subject facility is issued by the APCD.

4.2 ARB'S RECOMMENDATIONS ON SITING NEW SENSITIVE LAND USES [7]

Table 4-1: Siting New Sensitive Land Use

Source Category	Advisory Recommendations
Freeways and high-traffic roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles per day.
Distribution centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Railyards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult the Air District or the ARB on the status of pending analyses of health risks.
Refineries	• Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry cleaners using perchloroethylene	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perchloroethylene • dry cleaning operations.
Gasoline dispensing facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

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- These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.
- Recommendations are based primarily on data showing that the air pollution exposures addressed here (i.e., localized) can be reduced as much as 80% with the recommended separation.
- The relative risk for these categories varies greatly. To determine the actual risk near a particular facility, a site-specific analysis would be required. Risk from diesel PM will decrease over time as cleaner technology phases in.
- These recommendations are designed to fill a gap where information about existing facilities may not be readily available and are not designed to substitute for more specific information if it exists. The recommended distances take into account other factors in addition to available health risk data (see individual category descriptions).
- Site-specific project design improvements may help reduce air pollution exposures and should also be considered when siting new sensitive land uses.
- This table does not imply that mixed residential and commercial development in general is incompatible. Rather it focuses on known problems like dry cleaners using Perchloroethylene that can be addressed with reasonable preventative actions.
- A summary of the basis for the distance recommendations can be found in the ARB Handbook.

4.3 APCD-APPROVED DUST SUPPRESSANTS

The following list of dust control suppressants are approved by the SLO County APCD. The approved suppressants must be reapplied at a frequency that ensures that fugitive dust emissions are adequately controlled to below the 20% opacity limit identified in the APCD Rule 401 *Visible Emissions* and to ensure that dust is not emitted offsite. If fugitive dust is not adequately controlled, emissions could result in complaints and a violation of APCD Rule 402 *Nuisance*. The APCD will consider products that are not listed on a case-by-case bases; provide product specifics to APCD by contacting the APCD Planning Division at (805) 781-5912.

Suppressants are often used in combination with other APCD recommended control methods to minimize fugitive dust emissions. Other methods include:
1) Paving and then maintaining to applicable standards thus replacing need for suppressants and other control methods;
2) Implementing and maintaining design standards to ensure vehicles speeds on unpaved areas are physically limited to a posted speed limit of 15 mph or less; and
3) For special events, site parking areas in grass or low cut dense vegetative areas that are adequately irrigated to minimize fugitive dust emissions.

SLO County APCD used a 2002 San Joaquin Valley APCD [1] list of dust suppressants as the starting point for the list presented below. Products that could not be readily found were removed from the list. This SLO County APCD list also streamlines the SJVAPCD list by removing hygroscopic products and all but one of the petroleum based products from the SJVAPCD list. A petroleum based method (chipseal) and three polymer products (Dust Binder, Gorilla-Snot, and Soiltac) were added to the list.

Any chemical or organic material used for stabilizing solids shall not violate the California State Water Quality Control Board standards for use as a soil stabilizer. Any dust suppressant must not be prohibited for use by the US Environmental Protection Agency, the California Air Resources Board, or other applicable law, rule, or regulation.

Table 4-2: Approved Dust Suppressants

Suppressant Category	Suppressant Sub-Category	Product Common Name	Company	Product Web Link
Adhesives	Lignosulfonate	• CalBinder	California-Fresno Oil Co. (209) 486-0220	www.calfresno.com
		• DC-22	Dallas Roadway Products, Inc. SALS Roadway Products (972) 758-7454	www.dallasroadway.com www.salsroadproducts.com
		• Dustac, Dustac-100	Georgia Pacific (866) 447-2436, (800) 283-5547	www.gp.com/chemical
		• Lignin LS-50™	Prince Minerals, Inc. (646) 747-4200	www.princeminerals.com/products/dust_control.php
		• Lignosulfonate	EnviroTech Services (800) 369-3878	www.envirotechservices.com
		• Polybinder	Jim Good Marketing (805) 746-3783	-
	Calcium Lignosulfonate	• Calcium Lignin LS-50™	Prince Minerals, Inc. (646) 747-4200	www.princeminerals.com/products/dust_control.php
		• Dustac® Road Binder	Quatsino Navigation Co. Ltd (916) 442-9089	http://www.bellmarine.com/Dustac.htm
Petroleum Emulsions	-	• PennzSuppress-D [2]	PennzSuppress® Dust Suppressant American Refining Group, Inc. (814) 368-1200	www.arb.ca.gov/eqpr/penzoil/penzoil.htm
Polymer	-	• DC-1000	Desert Mountain (505) 598-5730	www.desertmtncorp.com
		• Dust Binder	Monterey AgResources (559) 499-2100	www.montereyagresources.com

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Suppressant Category	Suppressant Sub-Category	Product Common Name	Company	Product Web Link
		• Earthbound, Earthbound L	Earth Chem, Inc. (800) 764-5726	www.earthchem.com
		• Liquid Dust Control	Enviroseal Corporation (800) 775-9474	www.enviroseal.com/ldc.htm
		• Marloc	Reclamare Co. (206) 824-2385	-
		• PolyPavement	PolyPavement Company (323) 954-2240	www.polypavement.com
		• Soil Master WR	Environmental Soil Systems, Inc. (800) 368-4115	-
		• Soil Seal	Trans Western Chemicals, Inc. (562) 942-1833	www.soilseal.com
		• Soil Sement [2]	Midwest Industrial Supply, Inc. (800) 321-0699	www.arb.ca.gov/eqpr/midwest.htm
		• Soiloc-D	Hercules Soiloc (800) 815-7668	-
		• Soiltac or Gorilla-Snot	Soilworks, LLC (800) 545-5420	www.Soilworks.com
		• TerraBond PolySeal	Fluid Sciences, LLC (888) 356-7847	www.fluidsciences.com
		• Top Shield	Base Seal International, Inc. (800) 729-6985	www.baseseal.com
Oil-Rock Binding Agent	-	• Chipseal [3]	-	-

[1] Re: www.valleyair.org/busind/comply/PM10/Products%20Available%20for%20Controlling%20PM10%20Emissions.htm

[2] "Pre-certified" by the California Air Resources Board; www.arb.ca.gov/eqpr/eqpr.htm

[3] Though chipseal is typically used as a sealant for paved roads, it can also be an effective dust suppressant on unpaved private roads. Project proponents accept liability of potential vehicle or property damage associated with this dust control method.

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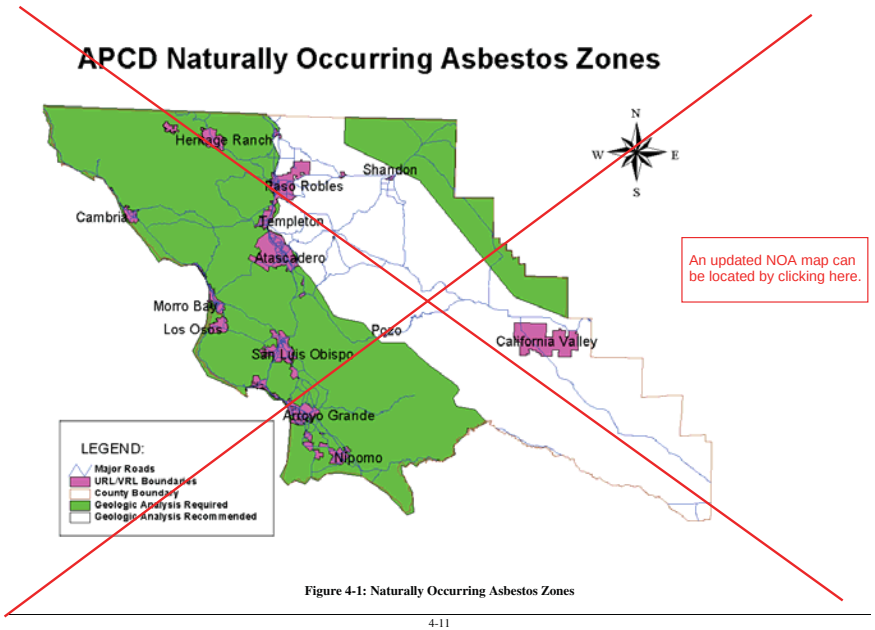
4.4 SLO COUNTY NATURALLY OCCURRING ASBESTOS MAP



An updated NOA map can be located by clicking here.

Figure 4-1: Naturally Occurring Asbestos Zones

4.5 CONSTRUCTION ACTIVITY MANAGEMENT PLAN GUIDELINES

A Construction Activity Management Plan (CAMP) may be required by the Air Pollution Control District (APCD) for construction projects that will result in significant particulate matter (PM) and/or nitrogen oxide (NO_x) emission impacts, such as potentially high emissions of fugitive dust or NO_x, or emissions in areas where potential nuisance concerns are present. The purpose of the CAMP is to specifically define the mitigation measures that will be employed as the project moves forward, in order to ensure all requirements are accounted for in the project budget, included in the contractor bid specifications, and are fully implemented throughout project construction.

The following information is provided as a guide for development of the CAMP. Specific implementation of mitigation measures will vary from project to project. **The CAMP is a comprehensive mitigation plan and will need to specifically identify all of the mitigation measures to be implemented for the project.** The following is a list of potential mitigation measures to include in the CAMP. The CAMP must be submitted to the APCD for approval prior to the start of the project.

Prior to commencement of any construction activities (e.g., site preparation, grading or construction activities) the applicant will notify the appropriate planning agency and the APCD, by letter, of the status of the air quality measures outlined in the CAMP. The letter will state the following: 1) the controls that will be implemented; 2) the reasons why any unimplemented measures are considered infeasible and the measures incorporated to substitute for these measures; 3) when scheduled construction activities will be initiated to allow for APCD inspection of the mitigation measures.

- **SENSITIVE RECEPTORS (NOx and PM)**
  The proximity of the project to the nearest residence and to the nearest sensitive receptor (e.g. school, daycare, hospital or senior center) needs to be documented and the mitigation measures outlined in the CAMP need to be tailored accordingly to provide adequate protection to any nearby sensitive receptors. (e.g. of mitigation measures: Locate construction staging areas away from sensitive receptors such that exhaust and other construction emissions do not enter the fresh air intakes to buildings, air conditioners, and windows).

- **MITIGATION MONITORING (NOx and PM)**
  A person or persons must be designated to monitor the CAMP implementation. This person will be responsible for compliance with the CAMP. Their duties shall include holidays and weekend periods when work may not be in progress. Depending on the site location, a certified visible emissions monitor may be required. The name and telephone number of such persons shall be provided to the APCD prior to the start of any construction activities.

- **DUST CONTROL (PM)**
  Construction activities can generate fugitive dust, which could be a nuisance to local residents and businesses in close proximity to the proposed construction site. Dust complaints could result in a violation of the APCD's 402 "Nuisance" Rule. The following is a list of measures that may be required throughout the duration of the construction activities:
  a. Reduce the amount of the disturbed area where possible.
  b. Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
  c. All dirt stockpile areas should be sprayed daily as needed, covered, or an APCD approved alternative method will be used.
  d. Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities.

  e. Exposed ground areas that will be reworked at dates greater than one month after initial grading should be sown with a fast-germinating non-invasive grass seed and watered until vegetation is established.
  f. All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD.
  g. All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
  h. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
  i. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114.
  j. Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.
  k. Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.

All PM_{10} mitigation measures required should be shown on grading and building plans. In addition, the contractor or builder should designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress. **The name and telephone number of such persons shall be provided to the APCD prior to land use clearance for map recordation and finished grading of the area.**

- **CONSTRUCTION PHASE GREENHOUSE GAS (GHG) EMISSION REDUCTIONS**
  The Attorney General requires GHG impact evaluation and the implementation of feasible mitigation at the project level. As such, the project's Mitigated Negative Declaration should evaluate the project's carbon dioxide (CO_2) emissions as well as other GHG sources converted to carbon dioxide equivalents and should identify feasible mitigation that the project shall implement. The project's overall GHG impact evaluation should include:
  a. The short term GHG impacts from the construction phase amortized over the life of the project (50 years for residential or residential support facilities and 25 years for commercial or industrial facilities) to provide a mechanism for the project to mitigate these impacts by adding these amortized impacts to the operational phase impacts; and
  b. The project's operational phase GHG impacts.

  For the construction phase (operational phase as well) feasible GHG mitigation measures to be implemented should be identified from the California Air Pollution Control Officer Association's (CAPCOA) January 2008 published document entitled "CEQA and Climate Change" or from other proven energy efficiency measures. The document is available online at:
  www.capcoa.org/CEQA/CAPCOA%20White%20Paper.pdf
  In some cases where the available measures are marginally effective, off-site GHG mitigation fees are appropriate.

- **CONSTRUCTION EQUIPMENT EMISSION REDUCTIONS (NOx and PM)**
  To mitigate air quality impacts from the emissions of construction equipment engines, the APCD has project proponents apply various emission reduction methods depending on the magnitude of the project. Below are the methods used:

  Standard Control Measures for Construction Equipment
  The standard mitigation measures for reducing nitrogen oxide (NO_x), reactive organic gases (ROG), and diesel particulate matter (Diesel PM) emissions from construction equipment are listed below:
  (a) Maintain all construction equipment in proper tune according to manufacturer's specifications;
  (b) Fuel all off-road and portable diesel powered equipment with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road);

(c) Use diesel construction equipment meeting ARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State off-Road Regulation;
(d) Use on-road heavy-duty trucks that meet the ARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;
(e) Construction or trucking companies with fleets that that do not have engines in their fleet that meet the engine standards identified in the above two measures (e.g. captive or NO_x exempt area fleets) may be eligible by proving alternative compliance;
(f) All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit;
(g) Diesel idling within 1,000 feet of sensitive receptors is not permitted;
(h) Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
(i) Electrify equipment when feasible;
(j) Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and,
(k) Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.

Best Available Control Technology (BACT) for Construction Equipment

If the estimated construction phase ozone precursor emissions from the actual fleet for a given Phase are expected to exceed the APCD's threshold of significances after the standard mitigation measures are factored into the estimation, then BACT needs to be implemented to further reduce these impacts. The BACT measures can include:

- Further reducing emissions by expanding use of Tier 3 and Tier 4 off-road and 2010 on-road compliant engines;
- Repowering equipment with the cleanest engines available; and
- Installing California Verified Diesel Emission Control Strategies. These strategies are listed at: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm
- Implementing a design measure to minimize emissions from on and off-road equipment associated with the construction phase. This measure should include but not be limited to the following elements:
  - Tabulation of on and off-road construction equipment (type, age, horse-power, engine model year and miles and/or hours of operation);
  - Calculate daily worst case emissions and the quarterly emissions that include the overlapping segments of construction phases
  - Equipment Scheduling (NOx and PM)
    - Schedule activities to minimize the amount of large construction equipment operating simultaneously during any given time period;
    - Locate staging areas at least 1000 feet away from sensitive receptors;
    - Where feasible:
      - Limit the amount of cut and fill to 2,000 cubic yards per day;
      - Limit the length of the construction work-day period; and,
      - Phase construction activities.

On-Road Truck Management (NOx and PM)

- Schedule construction truck trips during non-peak hours to reduce peak hour emissions;
- Locate staging areas at least 1000 feet away from sensitive receptors;
- Proposed truck routes should be evaluated to define routing patterns with the least impact to residential communities and sensitive receptors and identify these receptors in the truck route map;
- To the extent feasible, construction truck trips should be scheduled during non-peak hours to reduce peak hour emissions; and
- Trucks and vehicles should be kept with the engine off when not in use, to reduce vehicle emissions. Signs shall be placed in queuing areas to remind drivers to limit idling to no longer than 5 minutes.

Offsite Mitigation for Construction Equipment

If the estimated construction phase ozone precursor emissions from the actual fleet for a given Phase are expected to exceed the APCD's 6 tons/quarter threshold of significance after the standard and BACT measures are factored into the estimation, then off-site mitigation is appropriate. The current mitigation rate is $16,000 per ton of ozone precursor emission (NO_x + ROG) over the APCD threshold evaluated over the length of the expected exceedance. The applicant may use these funds to implement APCD approved emission reduction projects near the project site or may pay that funding level plus a 15% administration fee to the APCD for the APCD to implement emission reduction projects in close proximity to the project. The applicant shall provide this funding at least two (2) months prior to the start of the project to help facilitate emission offsets that are real-time as possible.

- **CONSTRUCTION WORKER TRIPS (NOx)**
  Implement an APCD approved Trip Reduction Program to reduce construction worker commute trips, which includes carpool matching, vanpooling, transit use, etc. Monitor worker use of alternative transportation throughout the project to ensure compliance.

- **COMPLAINT RESPONSE (NOx and PM)**
  The CAMP should include a section that addresses complaints and complaint handling. At a minimum this section shall include the following:
  - The person(s) responsible for addressing and resolving all complaints regarding the construction activity and their contact information is:
    - Name(s)
    - Company and Title(s)
    - Phone numbers and physical address.
  - A hotline telephone number shall be established and publicized to help facilitate rapid complaint identification and resolution. In addition, Prop 65 notification with regard to toxic diesel emissions shall to be made.
  - An action plan section shall be outlined that includes additional measures or modifications to existing mitigation measures in the event of complaints.
  - All complaints shall be reported immediately to the APCD.

- **PERMITTING REQUIREMENTS**
  Portable equipment, 50 horsepower (hp) or greater, used during construction activities may require California statewide portable equipment registration (issued by the California Air Resources Board) or an APCD permit. Operational sources may also require APCD permits.
  The following list is provided as a guide to equipment and operations that may have permitting requirements, but should not be viewed as exclusive. For a more detailed listing, refer to page A-5 in the APCD's CEQA Handbook.
  - Power screens, conveyors, diesel engines, and/or crushers.
  - Portable generators 50 hp or greater
  - Chemical product processing and or manufacturing
  - Electrical generation plants or the use of standby generator
  - Food and beverage preparation (primarily coffee roasters)
  - Furniture and fixture products
  - Metal industries, fabrication
  - Small scale manufacturing
  - Auto and vehicle repair and painting facilities
  - Fuel dealers
  - Dry cleaning
  - Pipelines
  - Public utility facilities
  - Boilers
  - IC Engines
  - Sterilization units(s) using ethylene oxide and incinerator(s)
  - Cogeneration facilities

- Unconfined abrasive blasting operations
- Concrete batch plants
- Rock and pavement crushing
- Tub grinders trommel screens

To minimize potential delays, prior to the start of the project, please contact the APCD Engineering Division at (805) 781-5912 for specific information regarding permitting requirements.

- **SPECIAL CONDITIONS**

Naturally Occurring Asbestos
If the project site is located in a candidate area for Naturally Occurring Asbestos (NOA), which has been identified as a toxic air contaminant by the California Air Resources Board (ARB) the following requirements apply. Under the ARB Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations, prior to any construction activities at the site, the project proponent shall ensure that a geologic evaluation is conducted to determine if NOA is present within the area that will be disturbed. If NOA is not present, an exemption request must be filed with the APCD. If NOA is found at the site the applicant must comply with all requirements outlined in the Asbestos ATCM. This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the APCD. Please refer to the APCD web page at *http://www.slocleanair.org/business/asbestos.asp* for more information or contact the APCD Enforcement Division at (805) 781-5912.

Demolition of Asbestos Containing Materials
Demolition activities can have potential negative air quality impacts, including issues surrounding proper handling, demolition, and disposal of asbestos containing material (ACM). Asbestos containing materials could be encountered during demolition or remodeling of existing buildings. Asbestos can also be found in utility pipes/pipelines (transite pipes or insulation on pipes). If utility pipelines are scheduled for removal or relocation; or building(s) are removed or renovated this project may be subject to various regulatory jurisdictions, including the requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (40CFR61, Subpart M - asbestos NESHAP). These requirements include but are not limited to: 1) notification requirements to the APCD, 2) asbestos survey conducted by a Certified Asbestos Inspector, and, 3) applicable removal and disposal requirements of identified ACM. Please contact the APCD Enforcement Division at (805) 781-5912 for further information.

Lead During Demolition
Demolition of structures coated with lead based paint is a concern for the APCD. Improper demolition can result in the release of lead containing particles from the site. Sandblasting or removal of paint by heating with a heat gun can result in significant emissions of lead. Therefore, proper abatement of lead before demolition of these structures must be performed in order to prevent the release of lead from the site. Depending on removal method, an APCD permit may be required. Contact the APCD Engineering Division at (805) 781-5912 for more information. Approval of a lead work plan by the APCD is required and must be submitted ten days prior to the start of the demolition. Contact the APCD Enforcement Division at (805) 781-5912 for more information. For additional information regarding lead removal, please contact Cal-OSHA at (805) 654-4581.

4.6 Qualified GHG Plan Level Guidance

This guidance is intended to assist local governments in developing community scale Climate Action Plans. In drafting this guidance, the San Luis Obispo County Air Pollution Control District (APCD) has drawn from established methodologies and practices, rather than creating new protocols or quantification methods. This guidance should be interpreted as recommended approaches rather than a formal protocol. This guidance will be continually updated as new tools, methodologies and protocols are developed and refined.

Any Climate Action Plan (CAP) that aims to support tiering of future development projects for purposes of CEQA review of GHG impacts must include these standard elements.

a. A community-wide GHG emissions inventory and "business-as-usual" forecast of year 2020 community-wide GHG emissions;
b. GHG reduction targets consistent with AB 32;
c. An analysis of local and state policies and actions that may impact GHG emissions within the jurisdiction;
d. Quantification of GHG reduction measures demonstrating that, if fully implemented, the GHG reduction targets will be met;
e. An implementation and monitoring strategy and timeline;
f. An adequate environmental review of the proposed CAP.

Early consultation with APCD staff is essential; the importance of communicating with District staff early in the climate planning process cannot be overemphasized. District staff is available to meet with local government planners, review methodologies, discuss approaches and any other issues throughout the process of preparing the CAP.

An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project; if those requirements are not otherwise binding and enforceable, they must be incorporated as mitigation measures applicable to the project. If there is substantial evidence that the effects of a particular project may be cumulatively considerable, notwithstanding its compliance with the specified requirements in the plan for the reduction of greenhouse gas emissions, an EIR must be prepared for the project.

Qualitative Requirements for Qualified GHG Reduction Strategies

1) The GHG emissions inventory should be complete and comprehensive
Any GHG emissions source addressed in this guidance should be included in the GHG inventory and forecast for the local CAP. If an emissions source is not included (for example, direct access electricity use or wastewater treatment), it should be clearly explained why that source was omitted. District staff will review this explanation as part of the evaluation of the CAP.

2) Calculations and assumptions should be transparent
It is important to emphasize that all methodologies and assumptions should be documented and explained within the CAP document.

3) GHG reduction strategies should rely primarily on mandatory measures
To date, most CAPs have emphasized voluntary GHG reduction measures over mandatory measures, indicated with language like "should promote," and "will encourage," etc. However, because implementation of voluntary measures cannot be guaranteed, their contribution to meeting the GHG reduction target is more speculative than that of mandatory measures. Problems that may result from over-reliance on voluntary measures include the following:

- It could be very difficult for local jurisdictions to demonstrate that GHG reduction targets are being met through voluntary measures.
- This, in turn, will make it difficult for a local government to determine if a project is complying with the adopted CAP in order to appropriately tier off of the CAP CEQA document.
- If the local government cannot document that its CAP is on track to achieve the GHG reduction

target, then the CAP may cease to comply with the "qualified" criteria. In this case subsequent projects would not be eligible to benefit from the tiering provisions of CEQA.

If voluntary measures are included in the CAP, distinctions should be drawn between those that are more or less likely to result in full implementation. For example, incentive-based programs (like AB 811 programs) are usually more likely to achieve results than outreach-based programs. Some CAPs have taken a cautious approach and have not quantified GHG reductions from the latter type of measure, due to their highly speculative nature. The APCD recommends only mandatory measures and strong voluntary measures (such as incentive-based programs) be quantified as contributing toward the GHG reduction target.

4) Build in a margin of safety

Once the CAP enters the implementation phase it is possible that unforeseen issues or obstacles may arise that prevent full implementation of all CAP measures, or the emission reductions achieved for some measures may be less than anticipated. These risks may be heightened by unforeseen economic or political developments that adversely affect implementation of the measures. Therefore, APCD recommends the CAP build in a margin of safety to ensure it can continue to serve as a defensible "Qualified GHG Reduction Strategy." This can be accomplished by:

- Including more GHG mitigation measures than needed to meet the GHG reduction target, thus creating a "buffer" against lower than anticipated results;
- Emphasizing mandatory over voluntary measures;
- Including contingency measures (with quantified emission reduction estimates) that can be activated to fill any gap needed to maintain the expected rate of progress toward achieving the emissions reduction target.

5) Measures should address existing as well as new development

The AB 32 target of reducing GHG emissions to 1990 levels by 2020 represents an initial step toward achieving the longer term goal of Executive Order S-3-05, which calls for reducing GHG emissions to 80% below 1990 levels by 2050; this equates to less than 2 metric tons of GHGs per capita. Reducing GHG emissions from new development alone cannot provide sufficient GHG reductions to achieve this long-term target. Therefore, climate action plans should address energy use and emissions from existing development as well. In its review of climate action plans, the APCD recommends aggressive and innovative strategies to achieve emission reductions from existing as well as new development.

6) Implementation and monitoring should be clearly defined

The parameters for determining if the CAP is being fully implemented, and if development projects are consistent with the CAP, must be clearly laid out. If a local government plans to tier future projects off the environmental review performed on a CAP, the monitoring program should include the following elements:

- *Annual tracking/reporting on implementation of all CAP measures, including measures that address existing development.* The phasing-in of mitigation measures should be addressed (i.e. — have all the measures that were to have been adopted or expanded in the past year actually been adopted/expanded?).
- *Annual reporting of how new development projects have been implementing CAP measures.* Tracking individual project attributes and implementation of mitigation measures should be done on a project-by-project basis. This can be facilitated through the use of a compliance checklist for new development projects to demonstrate consistency with the plan (listing all mandatory and voluntary measures that apply to new development) and whether the project is implementing the measures; the District will request a copy of this checklist (or similar documentation) when reviewing projects for CEQA.
- *Annual review of the State's implementation of measures included in the CAP.* Are state-level policies achieving the reductions anticipated?
- *Periodic update of the GHG inventory*. The APCD recommends updating the community-wide GHG inventory at least once every 5 years. However, updating the inventory on a more

frequent basis may improve the ability to monitor progress toward achieving the GHG reduction target in the CAP.

- *Analysis of whether the CAP is still a "qualified" plan for CEQA purposes.* The analysis should be based on level of implementation and effectiveness of measures.

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4.7 Employees per 1000 sf, Based on Land Use

Table 4-3: Employees Based on Land Use

LAND USE	Employees per 1000sf
Automobile Care Center	2.47
Bank (w/drive-through)	1.59
City Park	0.23
Convenience Market w/gas pumps	2.50
Day-Care Center	1.01
Elementary School	0.55
Fast Food Restaurant w/drive-thru	6.22
Fast Food Restaurant w/o drive-thru	1.74
Gasoline/Service Station	2.22
General Light Industry	1.54
General Office Building	2.52
Golf Course	2.96
Government Office Building	3.63
Hardware/Paint Store	1.56
Health Club	2.47
High Turnover (Sit Down Restaurant)	1.97
Hospital	1.07
Hotel	0.64
Library	0.39
Medical Office Building	3.33
Motel	0.95
Place of Worship	0.80
Quality Restaurant	1.19
Refrigerated Warehouse-No Rail	0.66
Regional Shopping Center	1.39
Strip Mall	2.39
Unrefrigerated Warehouse-No Rail	0.84

Employees Per 1000sf developed from the historical trend analysis based on historical permit data from SLOCOG for the years 2001 to 2010

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EXHIBIT 4

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EXHIBIT B

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EXHIBIT 5

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OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT

Air Toxics Hot Spots Program

Risk Assessment Guidelines

Guidance Manual for Preparation of Health Risk Assessments

February 2015

Air, Community, and Environmental Research Branch
Office of Environmental Health Hazard Assessment
California Environmental Protection Agency

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February 2015

Air Toxics Hot Spots Program Risk Assessment Guidelines

The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments

Office of Environmental Health Hazard Assessment
California Environmental Protection Agency
George V. Alexeeff, Ph.D., Director

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Preface

The draft of the *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (Guidance Manual) is a description of the algorithms, recommended exposure variates, cancer and noncancer health values, and the air modeling protocols needed to perform a health risk assessment (HRA) under the Air Toxics Hot Spots Information and Assessment Act of 1987(Health and Safety Code Section 44300 et seq., see Appendix B). The Children's Environmental Health Protection Act of 1999 (Health and Safety Code Section 39606, also contained in Appendix B), which requires explicit consideration of infants and children in assessing risks from air toxics, necessitated revisions of the methods for both noncancer and cancer risk assessment, and of the exposure variates. This draft version of the Guidance Manual updates the previous version (OEHHA, 2003), and reflects advances in the field of risk assessment along with explicit consideration of infants and children.

The information presented in the draft manual is compiled from three technical support documents (TSDs) released by the Office of Environmental Health Hazard Assessment (OEHHA) for the Hot Spots Program. The three TSDs (which are also revised versions, replacing the original four Hot Spots TSDs adopted between 1999 and 2003) underwent public comment and peer review and were adopted for use in the Air Toxics Hot Spots program by the Director of OEHHA. The Technical Support Document for the Derivation of Noncancer Reference Exposure Levels (June, 2008) addressed the methodology for deriving acute, chronic and eight hour Reference Exposure Levels. The Technical Support Document for Cancer Potency Factors (May 2009) addresses the methodology for deriving cancer potency factors and adjusting cancer potency to account for the increased sensitivity of early-in-life exposure to carcinogens. The Technical Support Document for Exposure Assessment and Stochastic Analysis (June 2012) presents the exposure model for the Hot Spots program and reviews the available literature on exposure and relevant fate and transport variates. All three TSDs are available on OEHHA's web site at: http://www.oehha.ca.gov/air/hot_spots/index.html. Excerpts of these three TSDs are presented in this document. There is relatively little new information in the Guidance Manual since the adoption of the TSDs.

The draft Guidance Manual was released for public review. Public comments were received and changes were made in response to some comments. Responses were developed to all public comments. Both the Guidance Manual and OEHHA's response to comments were then reviewed by the State's Scientific Review Panel on Toxic Air Contaminants (SRP), who previously reviewed the three TSDs upon which this guidance is based. Following review by the SRP, OEHHA finalized this Guidance Manual. This Guidance Manual supersedes the risk assessment methods presented in the Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA, 2003), which in turn replaced earlier guidance provided by the California Air Pollution Control Officer's Association (CAPCOA, 1993). This manual updates health effects values, exposure pathway variates (e.g., breathing rates), and

continues to use a tiered approach for performing HRAs based on current science and policy assessment. The Technical Support Document for Cancer Potency Factors (OEHHA, 2009) recommends a tenfold early-in-life potency factor adjustment for the third trimester and ages zero to less than two, and a threefold adjustment factor for ages two to less than sixteen. In addition, we recommend evaluating residency periods of nine, thirty and seventy years. This means that exposure variates are needed for the third trimester, ages zero to less than two, ages two to less than nine, ages two to less than 16, ages 16 to less than 30, and ages 16 to 70.

The tiered approach presented in this draft manual provides a risk assessor with flexibility and allows consideration of site-specific differences. Furthermore, risk assessors can tailor the level of effort and refinement of an HRA by using the point-estimate exposure variates or the stochastic treatment of distributions of exposure variates. The four-tiered approach to risk assessment primarily applies to residential cancer risk assessment. Compared to the OEHHA 2003 document, the exposure pathways in the Guidance Manual remain the same. The exposure and risk algorithms are similar, but they have been revised to accept new data or variables that are used in the tiered risk assessment approach.

The draft manual also contains example calculations and an outline for a modeling protocol and an HRA report. A software program, the Hot Spots Analysis and Reporting Program (HARP), has been developed by the Air Resources Board in consultation with OEHHA and Air Pollution Control/Air Quality Management District representatives. The HARP software, which is being updated with the new exposure variates and health values, is the recommended model for calculating and presenting HRA results for the Hot Spots Program. Information on obtaining the HARP software can be found on the ARB's web site at *www.arb.ca.gov* under the Hot Spots Program.

The intent of the Guidance Manual and the HARP software is to incorporate children's health concerns, update risk assessment practices, and to provide consistent risk assessment procedures. The use of consistent risk assessment methods and report presentation has many benefits, such as expediting the preparation and review of HRAs, minimizing revision and resubmission of HRAs, allowing a format for facility comparisons, and cost-effective implementation of HRAs and the Hot Spots Program. Risk assessments prepared with this Guidance Manual may be used for permitting new or modified stationary sources, or public notification, and risk reduction requirements of the Hot Spots Program. The use of uniform procedures allows comparison of risks from different facilities and enables identification of facilities that are problematic from a public health perspective. OEHHA reviews the HRAs to insure they are adequate for decision making, but does not play a role in permitting decisions that may result from the HRAs. OEHHA will provide advice to the Districts when requested on any of the risk assessment methods or health values they have used.

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1 - Introduction

1.1 Development of Guidelines

The Air Toxics Hot Spots Information and Assessment Act is designed to provide information to state and local agencies and to the general public on the extent of airborne emissions from stationary sources and the potential public health impacts of those emissions. The Hot Spots Act requires that the Office of Environmental Health Hazard Assessment (OEHHA) develop risk assessment guidelines for the Hot Spots program (Health and Safety Code (HSC) Section 44360(b)(2)) (see Appendix B for the text of the HSC). In addition, the Hot Spots Act specifically requires OEHHA to develop a "likelihood of risks" approach to health risk assessment. In response, OEHHA developed a tiered approach to risk assessment where a point estimate approach is first employed. If a more detailed analysis is needed, OEHHA has developed a stochastic, or probabilistic, approach using exposure factor distributions that can be applied in a stochastic estimate of the exposure. A detailed presentation of the tiered approach, risk assessment algorithms, selected exposure variates (e.g., breathing rate), and distributions with a literature review is presented in the *Air Toxics Hot Spots Program Risk Assessment Guidelines*; *Technical Support Document for Exposure Assessment and Stochastic Analysis* (OEHHA, 2012). A summary of this information can be found in Chapter 5 of this document.

The Technical Support Document for the Derivation of Noncancer Reference Exposure Levels (OEHHA, 2008) addresses dose response relationships for noncancer health effects and the methodology for deriving acute, chronic and 8-hour Reference Exposure Levels (RELs). Currently there are 53 acute RELs, 82 chronic RELs, and 10 eight-hour RELs. Review and revision of RELs to take into account new information and sensitive subpopulations including infants and children is an ongoing process. All draft RELs for individual chemicals revised under the current noncancer methodology will undergo public comment and peer review, as mandated by the Hot Spots Act. The Technical Support Document for Cancer Potency Factors (OEHHA, 2009) addresses the methodology for deriving cancer potency factors and adjusting cancer potency to account for the increased sensitivity to early-in-life exposure to carcinogens. This document contains inhalation cancer potency factors and oral cancer potency factors for 142 toxicants and toxicant compound classes developed by OEHHA or developed by other authoritative bodies and endorsed by OEHHA. The OEHHA website (*www.oehha.ca.gov*) should be consulted for the most current adopted chronic, acute and 8-hour RELs and cancer potency factors. In addition, for a small subset of these substances that are subject to airborne deposition and hence human oral and dermal exposure, oral chronic RELs and oral cancer potency factors have been developed by OEHHA. A summary of cancer and noncancer health effects values can be found in Appendix L and Chapters 6 and 7 of the Guidance Manual. All three Technical Support Documents have undergone public and peer review and have been approved by the state's Scientific Review Panel on Toxic Air Contaminants and adopted by OEHHA. The Guidance Manual is undergoing the same public and peer review process.

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The Guidance Manual contains a description of the algorithms, recommended exposure variates, and cancer and noncancer health values, and modeling protocols needed to perform a Hot Spots risk assessment under the Hot Spots Act (see Appendix B). The information for the Guidance Manual is taken from the three TSDs. The Guidance Manual supersedes the risk assessment methods presented in the Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA, 2003).

The Guidance Manual is intended to address health risks from airborne contaminants released by stationary sources. Some of the methodology used is common to other regulatory risk assessment applications, particularly for California programs. However, if the reader needs to prepare a Health Risk Assessment (HRA) under another program, the HRA may need additional analyses. Therefore, appropriate California and federal agencies should be contacted. For example, if a facility must comply with HRA requirements under the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the California Department of Toxic Substances Control (DTSC) must be contacted to determine if an HRA written to comply with AB 2588 will also satisfy RCRA/CERCLA requirements.

1.2 Use of the Guidance Manual

The intent in developing this Guidance Manual is to provide HRA procedures for use in the Air Toxics Hot Spots Program or for the permitting of existing, new, or modified stationary sources. The Air Resources Board (ARB) website (*www.arb.ca.gov*) provides more information on the Hot Spots Program and risk management guidelines, including recommendations for permitting existing, new, or modified stationary sources. The use of consistent risk assessment procedures and report presentation allows comparison of one facility to another, expedites the review of HRAs by reviewing agencies, and minimizes revision and resubmission of HRAs.

OEHHA recognizes that no one risk assessment procedure or set of exposure variates could perfectly address the many types of stationary facilities in diverse locations in California. Therefore a tiered risk assessment approach was developed to provide flexibility and allow consideration of site-specific differences. The tiered approach to risk assessment is discussed in detail in Chapter 8 of this Guidance.

These guidelines should be used in conjunction with the emission data collected and reported pursuant to requirements of the ARB's *Emission Inventory Criteria and Guidelines Regulations (Title 17, California Code of Regulations, Sections 93300-93300.5*), and the *Emission Inventory Criteria and Guidelines Report for the Air Toxics "Hot Spots" Program* (EICG Report), which is incorporated by reference therein (see ARB's web site: http://www.arb.ca.gov/ab2588/2588guid.htm for the most current version, which was approved on August 27, 2007). This regulation outlines requirements for the collection of emission data, based on an inventory plan, which must be approved by the Air Pollution Control or Air Quality Management District (District). The emissions reported under this program are routine or predictable and include continuous

and intermittent releases and predictable process upsets or leaks. Emissions for unpredictable releases (e.g., accidental catastrophic releases) are not reported under this program.

For landfill sites, these guidelines should be applied to the results of the landfill testing required under Health and Safety Code Section 41805.5 as well as to any emissions reported under the emission inventory requirements of the Air Toxics Hot Spots Act (e.g., from flares or other on-site equipment). Districts should be consulted to determine the specific landfill testing data to be used.

1.3 Who is Required to Conduct a Risk Assessment

The Hot Spots Act requires that each local Air Pollution Control District or Air Quality Management District (hereinafter referred to as District) determine which facilities will prepare an HRA. As defined under the Hot Spots Act, an HRA includes a comprehensive analysis of the dispersion of hazardous substances in the environment, their potential for human exposure, and a quantitative assessment of both individual and population-wide health risks associated with those levels of exposure.

Districts are to determine which facilities will prepare an HRA based on a prioritization process outlined in the law. The process by which Districts identify priority facilities for risk assessment involves consideration of potency, toxicity, quantity of emissions, and proximity to sensitive receptors such as hospitals, daycare centers, schools, work-sites, and residences. The District may also consider other factors that may contribute to an increased potential for significant risk to human receptors. As part of this process Districts categorize facilities as high, intermediate, or low priority. The District prioritization process is described in the *CAPCOA Air Toxics Hot Spots Program Facility Prioritization Guidelines, July 1990* (CAPCOA, 1990), although some Districts may have adopted their own method for prioritizing facilities for the purposes of AB2588, permitting, etc. Consult the District for updates to the Prioritization Guidelines. See the Hot Spots Program on ARB's web site at www.arb.ca.gov for more information on facility prioritization procedures.

Facilities designated by a District as "high priority" are required to submit an HRA to the District within 150 days of designation. Districts may grant a 30-day extension. However, a District may require any facility to prepare and submit an HRA according to the District priorities established for purposes of the Hot Spots Act.

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1.4 The Hot Spots Analysis and Reporting Program (HARP) Software

The ARB and the Districts have identified a critical need for software to assist with the programmatic aspects of the Hot Spots Program. HARP is computer software used by the ARB, OEHHA, Districts, and facility operators to promote statewide consistency, efficiency, and cost-effective implementation of HRAs and the Hot Spots Program. The HARP software package includes: 1) an Emissions Inventory Database Module, 2) an Air Dispersion Modeling Module, and 3) a Risk Analysis Module. The user-friendly Windows-based package provides for:

1. Electronic implementation of the risk assessment methods presented in the OEHHA guidelines (Guidance Manual);
2. Electronic data transfer from facilities and Districts;
3. The production of reports;
4. Facility prioritization;
5. Air dispersion modeling (AERMOD) of multiple emission releases or facilities for cumulative impact evaluations;
6. A summary report of acute, 8-hour, and chronic health hazard quotients or indices, and cancer risk at the point of maximum impact (PMI), maximally exposed individual resident (MEIR), maximally exposed individual worker (MEIW) and other receptors to be evaluated as needed;
7. Mapping displays of facility property boundaries, risk isopleths, and elevation contours;
8. The ability to display combined risk contours from multiple emission sources;
9. Output of data for use in other "off-the-shelf" Geographic Information Systems (GIS) programs for additional types of analysis; and
10. Census data for determining population-related health impacts showing the number of people exposed at various cancer risk levels and cancer burden.

1.5 Risk Assessment Review Process

The Hot Spots Act risk assessments are reviewed by the local District and by OEHHA. The Districts focus their review on the emissions data and the air dispersion modeling. OEHHA provides comments on the HRA's general concordance with the Guidelines Manual and the completeness of the reported health risks. The District, taking into account the comments of OEHHA, approves the HRA or returns it to the facility for revision and resubmission. If the HRA is not revised and resubmitted by the facility within 60 days, the District may modify the HRA and approve it as modified. Based on the approved HRA, the District determines if there is a significant health risk associated with emissions from the facility. If the District determines that facility emissions pose a significant health risk, the facility operator provides notice to all exposed individuals regarding the results of the HRA and may be required to take steps to reduce emissions by implementing a risk reduction audit and plan. Notification is to be made according to

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procedures specified by the District. Each District determines its own levels of significance for cancer and noncancer health effects for notification and risk reduction. See the Hot Spots Program on ARB's web site at www.arb.ca.gov for more information on significance levels selected by each District.

1.6 Uncertainty in Risk Assessment

OEHHA has striven to use the best science available in developing these risk assessment guidelines. However, there is a great deal of uncertainty associated with the process of risk assessment. The uncertainty arises from lack of data in many areas necessitating the use of assumptions. The assumptions used in these guidelines are designed to err on the side of health protection in order to avoid underestimation of risk to the public. Sources of uncertainty, which may overestimate or underestimate risk, include: 1) extrapolation of toxicity data in animals to humans, 2) uncertainty in the estimation of emissions, 3) uncertainty in the air dispersion models, and 4) uncertainty in the exposure estimates. In addition to uncertainty, there is a natural range or variability in measured parameters defining the exposure scenario. Scientific studies with representative sampling and large enough sample sizes can characterize this variability. In the specific context of a Hot Spots risk assessment, the source of variability with the greatest quantitative impact is variation among the human population in such properties as height, weight, food consumption, breathing rates, and susceptibility to chemical toxicants. OEHHA captures at least some of the variability in exposure by developing data driven distributions of intake rates, where feasible, in the TSD for Exposure Assessment (OEHHA, 2012).

Interactive effects of exposure to more than one carcinogen or toxicant are addressed in the risk assessment with default assumptions of additivity. Cancer risks from all carcinogens addressed in the HRA are added. Similarly, non-cancer hazard quotients for substances impacting the same target organ/system are added to determine the hazard index (HI). Although such effects of multiple chemicals are assumed to be additive by default, several examples of synergism (interactive effects greater than additive) are known. For substances that act synergistically, the HRA could underestimate the risks. Some substances may have antagonistic effects (lessen the toxic effects produced by another substance). For substances that act antagonistically, the HRA could overestimate the risks.

Other sources of uncertainty, which may underestimate or overestimate risk, can be found in exposure estimates where little or no data are available (e.g., soil half-life and dermal penetration of some substances from a soil matrix).

The differences among species and within human populations usually cannot be easily quantified and incorporated into risk assessments. Factors including metabolism, target site sensitivity, diet, immunological responses, and genetics may influence the response to toxicants. The human population is much more diverse both genetically and culturally (e.g., lifestyle, diet) than inbred experimental animals. The intraspecies variability among humans is expected to be much greater than in laboratory animals.

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In most cases, cancer potency values have been estimated only for the single most affected tumor site. This represents a source of uncertainty in the cancer risk assessment. Adjustment for tumors at multiple sites induced by some carcinogens may result in a higher potency. Some recent assessments of carcinogens include such adjustments. Other uncertainties arise 1) in the assumptions underlying the dose-response model used, and 2) in extrapolating from large experimental doses, where other toxic effects may compromise the assessment of carcinogenic potential, to usually much smaller environmental doses.

When occupational epidemiological data are used to generate a carcinogenic potency or a health protective level for a non-carcinogen, less uncertainty is involved in the extrapolation from workplace exposures to environmental exposures. When using human data, no interspecies extrapolation is necessary eliminating a significant source of uncertainty. However, children are a subpopulation with hematological, nervous, endocrine, and immune systems that are still developing and may be more sensitive to the effects of toxicants. The worker population and risk estimates based on occupational epidemiological data are more uncertain for children than adults. Current risk assessment guidelines include procedures designed to address the possibly greater sensitivity of infants and children, but there are only a few compounds for which these effects have actually been measured experimentally. In most cases, the adjustment relies on default assumptions which may either underestimate or overestimate the true risks faced by infants and children exposed to toxic substances or carcinogens.

Risk estimates generated by an HRA should not be interpreted as the expected rates of disease in the exposed population but rather as estimates of potential for disease, based on current knowledge and a number of assumptions.

In the Hot Spots program, cancer risk is often expressed as the maximum number of new cases of cancer projected to occur in a population of one million people due to exposure to the cancer-causing substance over a 30-year residential period. However, there is uncertainty associated with the cancer risk estimate. An individual's risk of contracting cancer from exposure to facility emissions may be less or more than the risk calculated in the risk assessment. An individual's risk not only depends on the individual's exposure to a specific chemical but also on his or her genetic background, health, diet, lifestyle choices and other environmental and workplace exposures. OEHHA uses health-protective exposure assumptions to avoid underestimating risk. For example, the risk estimate for airborne exposure to chemical emissions uses the health-protective assumption that the individual has a high breathing rate and exposure began early in life when cancer risk is highest.

A Reference Exposure Level (REL) is the concentration level at or below which no adverse non-cancer health effects are anticipated for the specified exposure duration. RELs are based on the most sensitive, relevant, adverse health effect reported in the medical and toxicological literature. RELs are designed to protect the most sensitive individuals in the population by the inclusion of factors that account for uncertainties as well as individual differences in human susceptibility to chemical exposures. The factors used in the calculation of RELs are meant to err on the side of public health

protection in order to avoid underestimation of non-cancer hazards. Exceeding the REL does not automatically indicate an adverse health impact. However, increasing concentrations above the REL value increases the likelihood that the health effect will occur.

Risk assessments under the Hot Spots program are often used to compare one source with another and to prioritize concerns. Consistent approaches to risk assessment are necessary to fulfill this function.

1.7 Tiered Approach to Risk Assessment

OEHHA developed a tiered approach to accommodate consideration of site-specific data that may be more appropriate for a given facility than the default variate. The first tier is the simplest point estimate approach to estimating exposure to facility emissions. Tier 1 is the first step in conducting a comprehensive risk assessment using algorithms and point estimates of input values described in the *Technical Support Document for Exposure Assessment and Stochastic Analysis*. (OEHHA, 2012) Each facility conducts a Tier 1 risk assessment to promote consistency across the state in facility risk assessments and facilitate comparisons across facilities. To be health-protective, high-end estimates for the key intake exposure variates are used for the dominant exposure pathways.

Tier 2 allows use of site-specific point estimates of exposure variates as long as these estimates can be justified. For example, if there are data indicating that consumption of fish from an impacted body of water is lower than the OEHHA-recommended fish consumption rate, then the facility can use that data to generate a point estimate for sport-fish consumption from that body of water. The risk assessor must supply the data and methods used for the site-specific estimates, and the site-specific estimates must be reproducible and approved by both the District and OEHHA.

Tier 3 risk assessment involves stochastic analysis of exposure using data-based distributions for the key exposure variates compiled in the OEHHA (2012) *Technical Support Document*. Since a stochastic approach to risk assessment provides more information about the range of risk estimates based on the range of exposures, Tier 3 can serve as a useful supplement to the Tier 1 and 2 approaches. Variance propagation methods (e.g., Monte Carlo analysis) are used to derive a range of cancer risk estimates reflecting the known variability in the inputs. Finally, a Tier 4 approach would use distributions of exposure variates that may be more appropriate for a site, such as the distribution of fish consumption rates for a specific body of water impacted by a facility. As in a Tier 2 approach, the risk assessment must supply the data and methods used for the site-specific distributions for exposure variates, and the site-specific estimates must be justified to and reproducible by the Districts and OEHHA.

1.8 References

CAPCOA, 1990. *CAPCOA Air Toxics Hot Spots Program Facility Prioritization Guidelines.* California Air Pollution Control Officers Association, July 1990.

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2 - Overview of Health Risk Assessment

2.1 The Model for Risk Assessment

The standard approach currently used for health risk assessment (HRA) was originally proposed by the National Academy of Sciences in the 1983 book: *Risk Assessment in the Federal Government: Managing the Process* (NAS, 1983) and was updated in the Academy's 1994 book: *Science and Judgment in Risk Assessment* (NAS, 1994). In 2009 the National Academy published *Science and Decisions: Advancing Risk Assessment* (NAS, 2009), in which a number of recommendations are made on improving the risk assessment process and expanding it to include community concerns and cumulative risks. The four steps involved in the risk assessment process are 1) hazard identification, 2) exposure assessment, 3) dose-response assessment, and 4) risk characterization. These four steps are briefly discussed below.

2.2 Hazard Identification

For air toxics sources, hazard identification involves the pollutant(s) of concern emitted by a facility, and the types of adverse health effects associated with exposure to the chemical(s), including whether a pollutant is a potential human carcinogen or is associated with other types of adverse health effects. For the Air Toxics Hot Spots Program (Hot Spots), the emitted substances that are addressed in a risk assessment are found in the list of substances designated in the ARB's *Emission Inventory Criteria and Guidelines Regulations (Title 17, California Code of Regulations, Sections 93300-93300.5), and the Emission Inventory Criteria and Guidelines Report* (EICG Report), which is incorporated by reference therein (ARB, 2007*)*. This list of substances is contained in Appendix A of this document and the EICG Report. The list of substances also identifies those substances that are considered human carcinogens or potential human carcinogens.

2.3 Exposure Assessment

The purpose of the exposure assessment is to estimate the extent of public exposure to emitted substances. For the Hot spots program, in practice this means estimating exposures for those emitted substances for which potential cancer risk or noncancer health hazards for acute, repeated 8-hour, and chronic exposures will be evaluated. This involves emission quantification, modeling of environmental transport, evaluation of environmental fate, identification of exposure routes, identification of exposed populations, and estimation of short-term (e.g., 1-hour maximum), 8-hour average, and long-term (annual) exposure levels. These activities are described in Chapters 4 and 5. Chapter 5 also discusses the tiered approach to risk assessment.

The ARB's Emission Inventory Criteria and Guidelines (EICG) Report provides assistance in determining those substances that must be evaluated in an HRA and the reporting requirements of facilities, while the Hot Spots Analysis and Reporting Program (HARP) software can be used to model ground level concentrations at specific off-site

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locations resulting from facility emissions. The United States Environmental Protection Agency (U.S. EPA) has adopted the AERMOD air dispersion model into its list of regulatory approved models, in place of the previously used ISCST3 model. AERMOD is a steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain (U.S. EPA, 2009). The Air Resources Board recommends AERMOD for Hot Spots risk assessments. The AERMOD air modeling software will be incorporated into the HARP software, which allows the user to input all dispersion parameters directly into the program to generate air dispersion data. Alternatively, the air dispersion data may be generated separately from HARP using other air dispersion models, and then imported into HARP to generate risk estimates. Data imported into HARP must already be in the format required by HARP. HARP has the flexibility to generate a summary of the risk data necessary for an HRA by either of the above approaches.

Most of the toxicants assessed under the Hot Spots program are volatile organic compounds that remain as gases when emitted into the air. These chemicals are not subject to appreciable deposition to soil, surface waters, or plants. Therefore, human exposure via ingestion or dermal exposure, at least at concentrations typically encountered in the ambient air, is not considered for volatile organic compounds in the Hot Spots risk assessments. While some models indicate potential for dermal exposure to certain volatile organic compounds, at this time, the Hot spots program does not consider this pathway. Significant exposure to volatile organic toxicants emitted into the air occurs through the inhalation pathway, and this pathway is the primary consideration in the Hot Spots risk assessments. A small subset of Hot Spots substances consists of semi-volatile organic and metal toxicants emitted partially or totally as particles subject to deposition. Ingestion and dermal pathways as well as the inhalation pathway must be evaluated for these chemicals. A few of these semi-volatile organic and metal toxicants must also include the breast milk ingestion pathway. Additional ingestion pathways may also need to be evaluated depending on the pathways of exposure for the specific receptor of interest. Table 5.1 in Chapter 5, Table 6.4 in Chapter 6, and Table 7.1 in Chapter 7 list the substances that must be evaluated for multipathway impacts. HARP is designed to assess potential health impacts posed by substances that must be analyzed by a multipathway approach.

2.4 Dose-Response Assessment

Dose-response assessment is the process of characterizing the relationship between exposure to an agent and incidence of an adverse health effect in exposed populations. In quantitative carcinogenic risk assessment, the dose-response relationship is expressed in terms of a potency slope that is used to calculate the probability or risk of cancer associated with an estimated exposure. Cancer potency factors are expressed as the 95^{th} percent upper confidence limit of the slope of the dose response curve estimated assuming continuous lifetime exposure to a substance. Typically, potency factors are expressed as units of inverse dose (e.g., $(mg/kg\ BW/day)^{-1}$) or inverse concentration (e.g., $(\mu g/m^3)^{-1}$). It is assumed in cancer risk assessments that risk is directly proportional to dose and that there is no threshold for carcinogenesis.

The Office of Environmental Health Hazard Assessment (OEHHA) has compiled cancer potency factors, which should be used in risk assessments for the Hot Spots program, in Table 7.1. Cancer potency factors listed in Table 7.1 were derived either by the U.S. EPA or by OEHHA, underwent public and peer-review, and were adopted for use in the program. Chapter 8 describes procedures for use of potency values in estimating excess cancer risk. For a detailed description of cancer potency factors, refer to the *Technical Support Document for Cancer Potency Factors* (OEHHA, 2009).

For noncarcinogenic effects, dose-response data developed from animal or human studies are used to develop acute, 8-hour, and chronic noncancer Reference Exposure Levels (RELs). The acute, 8-hour and chronic RELs are defined as the concentration at which no adverse noncancer health effects are anticipated even in sensitive members of the general population, with infrequent one hour exposures, repeated 8-hour exposures over a significant fraction of a lifetime, or continuous exposure over a significant fraction of a lifetime, respectively. The most sensitive health effect is chosen to develop the REL if the chemical affects multiple organ systems. Unlike cancer health effects, noncancer health effects are generally assumed to have thresholds for adverse effects. In other words, injury from a pollutant will not occur until exposure to that pollutant has reached or exceeded a certain concentration (i.e., threshold) and/or dose. The acute, 8-hour, and chronic RELs are air concentrations intended to be below the threshold for health effects for the general population.

The actual threshold for health effects in the general population is generally not known with any precision. Uncertainty factors are applied to the Lowest Observed Adverse Effects Level (LOAEL) or No Observed Adverse Effects Level (NOAEL) or Benchmark Concentration values from animal or human studies to help ensure that the chronic, 8-hour and acute REL values are below the threshold for human health for nearly all individuals. This guidance manual provides the acute, 8-hour, and chronic Reference Exposure Levels in Tables 6.1 through 6.3. Some substances that pose a chronic or repeated 8-hour inhalation hazard may also present a chronic hazard via non-inhalation routes of exposure (e.g., ingestion of contaminated water, foods, or soils, and dermal absorption). The oral RELs for these substances are presented in Table 6.4. The methodology and derivations for acute, 8-hour, and chronic, RELs are described in the *Technical Support Document for the Derivation of Noncancer Reference Exposure Levels* (OEHHA, 2008).

2.5 Risk Characterization

This is the final step of risk assessment. In this step, modeled concentrations and exposure information, which are determined through exposure assessment, are combined with potency factors and RELs that are developed through dose-response assessment. The use of cancer potency factors to assess total cancer risk and the use of the hazard index approach for evaluating the potential for noncarcinogenic health effects are described in Chapter 8. Example calculations for determining (inhalation) cancer risk and noncancer acute, 8-hour, and chronic hazard quotients and hazard indices are presented in Appendix I. Chapter 9 provides an outline that specifies the content and recommended format of HRA results.

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Under the Hot Spots Act, health risk assessments are to quantify both individual and population-wide health impacts (Health and Safety Code, Section 44306) (Appendix B). The health risk assessments are facility specific and the calculated risk should be combined for all pollutants emitted by a single facility. For example, cancer risk from multiple carcinogens is considered additive. For exposures to multiple non-carcinogen pollutants, a hazard index approach is applied for air contaminants affecting the same organ system. All substances emitted by the facility that are on the Hot Spots Act list of substances must be identified in the HRA, including those on the list that do not have a potency value or REL.

For assessing risk, OEHHA has developed two methods for determining dose via inhalation, dermal absorption, and ingestion pathways. These two methods, the point estimate approach and the stochastic exposure assessment approach, are described below and in Chapters 5 and 8. Detailed presentations of these methods can be found in*: Technical Support Document for Exposure Assessment and Stochastic Analysis* (OEHHA, 2012*)*.

2.5.1 *Point Estimate Approach*

OEHHA provides information in this document on average and high-end values for key exposure pathways (e.g., breathing rate for the inhalation exposure pathway). The average and high-end of point estimates in this document are defined in terms of the probability distribution of values for that variate. The mean represents the average values for point estimates and the 95th percentiles represent the high-end point estimates from the distributions identified in OEHHA (2012). Thus, within the limitations of the data, average and high-end point estimates are supported by the distribution.

Tier 1 of the tiered approach to risk assessment, which is briefly discussed in Section 2.5.3 and presented in more detail in Chapter 8, utilizes a combination of the average and high-end point estimates to more realistically estimate exposure in multipathway risk assessments. This method uses high-end exposure estimates for the pathways that are the main drivers of exposure and the average point estimate for the other non-driving exposure pathways. This approach will lessen the issue of compounding high-end exposure estimates, while retaining a health-protective approach for the more important exposure pathways. It is unlikely that an individual receptor would be on the high-end of exposure for all exposure pathways. See Chapter 8 for detailed discussions of how this multipathway methodology is applied to cancer and noncancer calculations. The HARP software can perform this analysis (referred to as the derived approach in the HARP software).

In addition to using an estimate of average and high-end consumption rates, cancer risk evaluations at individual receptors are presented for 9, 30, and 70-year exposure durations. The 9 and 30-year durations correspond to the average and high-end of residency time recommended by U.S. EPA (1997). The California data presented in Appendix L of the Exposure TSD (OEHHA, 2012) are generally supportive of the nationwide data. The 9 and 70-year exposure durations present potential impacts over the range of residency periods, while the 30-year exposure duration is recommended

for use as the basis for estimating cancer risk at the MEIR in all HRAs. Population-wide impacts should use the 70-year exposure duration.

The parameters used for all exposure durations assume exposure begins in the last trimester of pregnancy and progresses through the exposure duration of interest (e.g., 9, 30, or 70 years). These assumptions are thus protective of children. Children have higher intake rates on a per kilogram body weight basis (e.g., they breathe, drink and eat more per kg body weight than adults) and thus receive a higher dose from contaminated media. See Chapter 5 for the point estimates that can be used to estimate impacts for children. Chapters 5 and 8 discuss how to calculate cancer risk based on various exposure durations and point estimates. Appendix I contains an example calculation and Chapter 9 clarifies how to present the findings in an HRA.

2.5.2 *Stochastic Exposure Assessment*

OEHHA was directed under the Air Toxics "Hot Spots" program (SB 1731, Calderon, stat. 1992; Health and Safety Code Section 44360(b)(2)) to develop a "likelihood of risk" approach to risk assessment. To satisfy this requirement, OEHHA developed a stochastic approach to risk assessment that utilizes distributions for exposure variates such as breathing rate and water consumption rate rather than a single point estimate. The variability in exposure can be propagated through the risk assessment model using the distributions as input and a Monte Carlo or similar method. The result of such an analysis is a range of risks that at least partially characterizes variability in exposure.

Distributions of key exposure variates that are presented in the *Technical Support Document for Exposure Assessment and Stochastic Analysis* (OEHHA, 2012) were taken from the literature, if adequate, or developed from raw data of original studies. Intake variates such as vegetable consumption are relatively data rich; for these variates reasonable probability distributions can be constructed. However, the data necessary to characterize the variability in risk assessment variates are not always available. For example, for the fate and transport variates (e.g., fish bioaccumulation factors), there are only a few measurements for a given chemical available which precludes the adequate characterization of a probability distribution. We only developed distributions for those key exposure variates that were adequately characterized by data. Development of distributions is described in detail in the *Technical Support Document for Exposure Assessment and Stochastic Analysis* (OEHHA, 2012).

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2.5.3 *Tiered Approach to Risk Assessment*

OEHHA recommends using a tiered approach to risk assessment. Tier 1 is a standard point estimate approach using the recommended point estimates presented in this document. If site-specific information is available to modify some point estimates developed in the *Technical Support Document for Exposure Assessment and Stochastic Analysis* (OEHHA, 2012) and is more appropriate to use than the recommended point estimates in this document, then Tier 2 allows use of that site-specific information. Site-specific information should be presented to the District before being used. The District may contact OEHHA for additional advice. Note that all non-default variates need to be adequately justified to OEHHA and the Districts to be used. In Tier 3, a stochastic approach to exposure assessment is used with the data distributions developed in the TSD (OEHHA, 2012) and presented in this document. Tier 4 is also a stochastic approach but allows for utilization of site-specific distributions, if they are justifiable (to OEHHA and the Districts) and more appropriate for the site under evaluation than those recommended in this document. Persons preparing an HRA that has a Tier 2 through Tier 4 evaluation must also include the results of a Tier 1 evaluation. Tier 1 evaluations are required for all HRAs prepared for the Hot Spots Program to promote consistency across the state for all facility risk assessments and allow comparisons across facilities. Chapter 8 provides a summary of the tiered approach and the TSD (OEHHA, 2012) discusses it in detail. Chapter 9 provides an outline that specifies the content and recommended format of HRA results.

2.6 References

ARB, 2007. *Emission Inventory Criteria and Guidelines Regulations (Title 17, California Code of Regulations, Sections 93300-93300.5), and the Emission Inventory Criteria and Guidelines Report* (EICG Report).

NAS, 1983. National Academy of Sciences. *Risk Assessment in the Federal Government: Managing the Process*. National Research Council. National Academy Press, Washington D.C.

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OEHHA, 2008. Air Toxics Hot Spots Risk Assessment Guidelines Technical Support Document for the Derivation of Noncancer Reference Exposure Levels. Available online at: http://www.oehha.ca.gov

OEHHA, 2009. Technical Support Document for Cancer Potency Factors: Methodologies for derivation, listing of available values, and adjustments to allow for early life stage exposures. May 2009. Available online at: http://www.oehha.ca.gov

OEHHA, 2012. *Air Toxics Hot Spots Program Risk Assessment Guidelines; Technical Support Document for Exposure Assessment and Stochastic Analysis*. Available online at http://www.oehha.ca.gov

U.S. EPA (2009). AERMOD Implementation Guide. Last Revised: March 19, 2009.

U.S. EPA, 1997. *Exposure Factors Handbook, Volume I, General Factors*. EPA/600/P-95/002Fa.

AERMOD Implementation Workgroup, U. S. Environmental Protection Agency. Online at: http://www.epa.gov/ttn/scram/7thconf/aermod/aermod_implmtn_guide_19March2009.pdf

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3 - Hazard Identification - Air Toxics Hot Spots Emissions

3.1 The Air Toxics Hot Spots List of Substances and Emissions Inventory

For air toxics sources, hazard identification involves identifying pollutants of concern and whether these pollutants are potential human carcinogens or associated with other types of adverse health effects. For the Air Toxics Hot Spots (Hot Spots) Program, the emitted substances that are addressed in a health risk assessment (HRA) are found in the list of hazardous substances designated in the Air Resources Board's (ARB's) *Emission Inventory Criteria and Guidelines Regulations (Title 17, California Code of Regulations, Sections 93300-93300.5), and the Emission Inventory Criteria and Guidelines Report* (EICG Report), which is incorporated by reference therein (ARB, 2007). This list of substances is contained in both Appendix A of this document and the EICG Report. The list of substances also identifies those substances that are considered human carcinogens or potential human carcinogens.

The substances included on the Hot Spots Program list of substances are defined in the statute as those substances found on lists developed by the following sources:

- International Agency for Research on Cancer (IARC);
- U.S. Environmental Protection Agency (U.S. EPA);
- U.S. National Toxicology Program (NTP);
- ARB Toxic Air Contaminant Identification Program List;
- Hazard Evaluation System and Information Service (HESIS) (State of California);
- Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986) list of carcinogens and reproductive toxicants (State of California);
- Any additional substance recognized by the State Board as presenting a chronic or acute threat to public health when present in the ambient air.

All substances emitted by the facility that are on the Hot Spots Act list of substances must be identified in the HRA.

The ARB EICG Report (ARB, 2007) specifies that each facility subject to the Hot Spots Act must submit an Emission Inventory Report to the local air pollution control or air quality management district. This Emission Inventory Report must identify and account for all listed substances used, manufactured, formulated, or released by the facility. All routine, predictable releases must be reported. These inventory reports include the emission data necessary to estimate off-site levels of facility-released Hot Spots substances. These inventory reports will be discussed in further detail in Chapter 4. See Chapter 9 for an outline that specifies the content and recommended format for presenting the air dispersion modeling and HRA results. As presented in Appendix A, the EICG Report divides the list into three groups for reporting purposes. Potency or severity of toxic effects and potential for facility emission were considered in placing compounds into the three groups.

For the first group (listed in these guidelines in Appendix A-I), all emissions of these substances must be quantified in the HRA. For substances in the second group (listed in these guidelines in Appendix A-II), emissions are not quantified; however, facilities must report whether the substance is used, produced, or otherwise present on-site (i.e., these substances are simply listed in a table in the HRA). Lastly, substances in the third group (Appendix A-III) also only need to be reported in a table in the HRA if they are manufactured by the reporting facility.

Facilities that must comply with the Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation and Liability Act (RCRA/CERCLA) requirements for risk assessment need to consult the California Department of Toxic Substances Control (DTSC) Remedial Project Manager to determine which substances must be evaluated in their risk assessment. Some RCRA/CERCLA facilities may emit substances which are not currently listed under the Hot Spots Program but which may require evaluation in a RCRA/CERCLA risk assessment.

3.2 References

ARB, 2007. *Emission Inventory Criteria and Guidelines Regulations (Title 17, California Code of Regulations, Sections 93300-93300.5), and the Emission Inventory Criteria and Guidelines Report* (EICG Report).

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4 - Air Dispersion Modeling

The information contained in this section is primarily an abbreviated version of the material found in Chapter 2 of the Air Toxics Hot Spots Risk Assessment Guidelines; Exposure Assessment and Stochastic Analysis Technical Support Document (OEHHA, 2012). Several references have been included in this section to indicate those areas that are covered in more detail in Chapter 2 of the Technical Support Document. However, some air dispersion concepts and procedures have been added to assist the reader in the health risk assessment (HRA) process. In particular, a brief summary of the Hot Spots Analysis and Reporting Program (HARP) software applicability to air dispersion analysis has been included. The HARP software has been developed by the Air Resources Board (ARB), in consultation with OEHHA and Air Pollution Control or Air Quality Management District (District) representatives. The HARP software is the recommended model for calculating and presenting HRA results for the Air Toxics Hot Spots Program (Hot Spots). Information on obtaining the HARP software can be found under the Hot Spots Program on the ARB's web site at www.arb.ca.gov. See Chapter 9 for an outline that specifies the content and recommended format for presenting the air dispersion modeling and HRA results.

The U.S. EPA has adopted the AERMOD air dispersion model into their list of regulatory approved models, in place of the previously used ISCST3 model. AERMOD is a steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain (U.S. EPA, 2009). The Air Resources Board recommends AERMOD for Hot Spots risk assessments.

4.1 Air Dispersion Modeling in Exposure Assessment: Overview

Estimates of air concentrations of emitted toxicants in the surrounding community from a facility's air emissions are needed in order to determine cancer and noncancer risks. One approach to determining the concentration of air pollutants emitted from the facility is to do air monitoring in the surrounding community. However, there are a number of disadvantages to this approach. Ambient air monitoring is costly because good estimates of an annual average concentration typically require monitoring at least one day in six over a year. Because it is costly, monitoring is usually limited to a select number of pollutants, and a limited number of sites. There can be significant risks from some chemicals at or even below the monitoring detection limit, which can add considerable uncertainty to risk estimates if many of the measurements are below or near the detection limit. Monitoring measures not only facility emissions but also general ambient background as well. It can be difficult and expensive to distinguish between the two using monitoring, particularly if general ambient background levels are high relative to the contribution of facility emissions. These limitations often make it impractical to use monitoring in a program such as the Air Toxics Hot Spots program with hundreds of facilities.

Air dispersion models have several advantages over monitoring. Modeling can provide greater spatial detail and the costs are relatively cheap by comparison. For example, dispersion models can estimate the pollutant concentration in air at many receptor locations (hundreds to thousands) and for a multitude of averaging periods. Air dispersion models have been validated using air monitoring.

There are, however, uncertainties associated with the typical usage of air dispersion modeling. The use of meteorological data from the nearest airport may not ideally be the best representation of localized conditions. Gaussian plume air dispersion models ignore calm hours. This can bias model predictions towards underestimation. Some dispersion models offer limited chemical reactions within the algorithms; however, we generally assume the pollutant is inert for the near-field atmospheric travel time. This may bias estimated concentrations towards over-prediction for those pollutants that are highly reactive in the atmosphere. Air dispersion model results are only as good as the emissions estimates and emissions estimates can be uncertain. However, on the whole, the advantages of air dispersion modeling for a program like the Air Toxics Hot Spots far outweigh the disadvantages.

Professional judgment is required throughout the dispersion modeling process. The local air quality district has final authority on modeling protocols. The following guidance is intended to assist in the understanding of dispersion modeling for risk assessments.

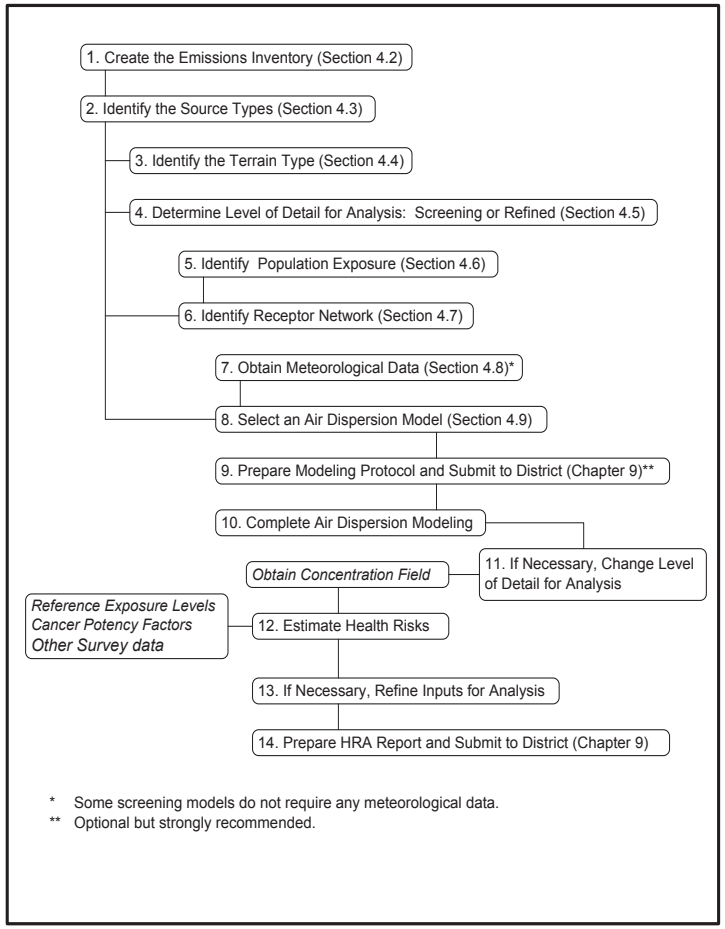
Air dispersion modeling includes the following steps (see Figure 1):

1. Create an emission inventory of the toxic releases (Section 4.2)
2. Identify the source types (Section 4.3)
3. Identify the terrain type and land use (Section 4.4)
4. Determine the detail needed for the analysis: screening or refined (Section 4.5)
5. Identify the population exposure (Section 4.6)
6. Identify the receptor network (Section 4.7)
7. Obtain meteorological data (for refined air dispersion modeling only) (Section 4.8)
8. Select an air dispersion model (Section 4.9)
9. Prepare a modeling protocol and submit to the local Air District (hereafter referred to as “the District”) (Section 4.14)
10. Complete the air dispersion analysis
11. If necessary, redefine the receptor network and return to Step 10

12. Complete the risk assessment
13. If necessary, refine the inputs and/or the model selection and return to Step 8
14. Present the HRA results (Chapter 9 provides an outline that specifies the content and recommended format of HRA results).

The output of the air dispersion modeling analysis includes a receptor field of ground level concentrations of the pollutant in ambient air. These concentrations can be used to estimate an inhaled or ingested dose for the estimation of multipathway cancer risk, or used to determine a hazard index for acute (inhalation), and chronic noncancer multipathway risks. It should be noted that in the Air Toxics “Hot Spots” program, facilities simulate the dispersion of the chemical emitted as an inert compound, and do not model any atmospheric transformations or dispersion of products from such reactions. The U.S. EPA Guideline on Air Quality Models (U.S. EPA, 2005) should be consulted when evaluating reactive pollutants for other regulatory purposes.

Figure 1 Overview of the Air Dispersion Modeling Process.



4.2 Emission Inventories

The Emission Inventory Reports (Inventory Reports) developed under the Hot Spots Program provide data to be used in the HRA and in the air dispersion modeling process. The Inventory Reports contain information regarding emission sources, emitted substances, emission rates, emission factors, process rates, and release parameters (area and volume sources may require additional release data beyond that generally available in Emissions Inventory reports). This information is developed according to the ARB's *Emission Inventory Criteria and Guidelines Regulations (Title 17, California Code of Regulations, Sections 93300-93300.5)*, and the *Emission Inventory Criteria and Guidelines Report* (EICG Report), which is incorporated by reference therein (ARB, 2007*)*.

Updated emission data for process changes, emission factor changes, material/fuel changes, or shutdown must be approved by the District prior to the submittal of the health risk assessment (HRA). Ideally, the District review of updated emissions could be completed within the modeling protocol. In addition, it must be stated clearly in the risk assessment if the emission estimates are based on updated or revised emissions (e.g., emission reductions). This section summarizes the requirements that apply to the emission data which are used for Air Toxics "Hot Spots" Act risk assessments.

4.2.1 *Air Toxics Hot Spots Emissions*

As noted in Chapter 3, Hazard Identification, the HRA should identify all substances emitted by the facility, which are on the Hot Spots Act list of substances (see Appendix A of the Guidance Manual or the EICG Report). The EICG Report specifies that Inventory Reports must identify and account for all listed substances used, manufactured, formulated, or released by the facility. All routine, predictable releases must be reported. Under the regulations, the list is divided into three groups for reporting purposes. The first group (listed in Appendix A-I of the Inventory Guidelines Report) has all pollutants whose emissions must be quantified. The second group (listed in Appendix A-II of the Inventory Guidelines Report) includes substances where emissions do not need to be quantified; however, facilities must report whether the substance is used, produced, or otherwise present on-site. The third group (listed in Appendix A-III of the Emissions Inventory Guidelines Report) includes substances whose emissions need not be reported unless the substance is manufactured by the facility. Chemicals or substances in the second and third groups should be listed in a table in the risk assessment.

Facilities that must comply with the Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation and Liability Act (RCRA/CERCLA) requirements for risk assessment need to consult the Department of Toxic Substances Control (DTSC) Remedial Project Manager to determine which substances must be evaluated in their risk assessment in addition to the list of "Hot Spots" chemicals. Some RCRA/CERCLA facilities may emit chemicals that are not currently listed under the "Hot Spots" Program. Chapter 9 provides an outline that specifies the content and recommended format of HRA results.

4.2.1.1 Emission Estimates Used in the Risk Assessment

The HRA must include emission estimates for all substances that are required to be quantified in the facility's emission inventory report. Specifically, HRAs should include both annual average emissions and maximum 1-hour emissions for each pollutant. Maximum 1-hour emissions are used for acute noncancer health impacts while annual emissions are used for chronic exposures (i.e., chronic and 8-hour noncancer health impacts or cancer risk assessment).

Emissions for each substance must be reported for individual emitting processes associated with unique devices within a facility. Total facility emissions for an individual air contaminant will be the sum of emissions, reported by process, for that facility. Information on daily and annual hours of operation, and relative monthly activity, must be reported for each emitting process. Devices and emitting processes must be clearly identified and described and must be consistent with those reported in the emissions inventory report.

The HRA should include tables that present the emission information (i.e., emission rates for each substance released from each process) in a clear and concise manner. The District may allow the facility operator to base the HRA on more current emission estimates than those presented in the previously submitted emission inventory report (i.e., actual enforceable emission reductions realized by the time the HRA is submitted to the District). If the District allows the use of more current emission estimates, the District must review and approve the new emissions estimates prior to use in the HRA. The HRA report must clearly state what emissions are being used and when any reductions became effective. Specifically, a table presenting emission estimates included in the previously submitted emission inventory report as well as those used for the HRA should be presented. The District should be consulted concerning the specific format for presenting the emission information. Chapter 9 provides an outline that specifies the content and recommended format of HRA results. A revised emission inventory report must be submitted to the District prior to submitting the HRA and forwarded by the District to the ARB, if revised emission data are used.

4.2.1.1.1 Molecular Weight Adjustments for the Emissions of Metal Compounds

For most of the Hot Spots toxic metals, the OEHHA cancer potency factors, acute and chronic RELs apply to the weight of the toxic metal atom contained in the overall compound. Some of the Hot Spots compounds contain various elements along with the toxic metal atom (e.g., "Nickel hydroxide", CAS number 12054-48-7, has a formula of H_2NiO_2). Therefore, an adjustment to the reported pounds of the overall compound is needed before applying the OEHHA cancer potency factor for "Nickel and compounds" to such a compound. This ensures that the cancer potency factor, acute or chronic REL is applied only to the fraction of the overall weight of the emissions that are associated with health effects of the metal. In other cases, the Hot Spots metals are already reported as the metal atom equivalent (e.g., CAS 7440-02-0, "Nickel"), and these cases do not use any further molecular weight adjustment. (Refer to Note [7] in Appendix A,

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List of Substances in the EICG Report for further information on how the emissions of various Hot Spots metal compounds are reported.)

The appropriate molecular weight adjustment factors (MWAF) to be used along with the OEHHA cancer potency factors, acute and chronic RELs for Hot Spots metals can be found in the MWAF column[1] of the table containing OEHHA/ARB Approved Health Values for use in Hot Spots Facility Risk Assessments that is in Appendix L of this document.

As an example, the compound "Nickel hydroxide" has a molecular formula of H_2NiO_2. The atomic weight of each of the elements in this compound, and the fraction they represent of the total weight, are therefore as follows:

Element	Number of atoms	Atomic Weight	Fraction of Total Weight = MWAF
1 x Nickel (Ni)	1 x	58.70	58.70 / 92.714 = **0.6332** (MWAF for Nickel)
2 x Oxygen (O)	2 x	15.999	
2 x Hydrogen (H)	2 x	1.008	
Total Molecular Weight of H_2NiO_2:		92.714	

So, for example, assume that 100 pounds of "Nickel hydroxide" emissions are reported under CAS number 12054-48-7. To get the Nickel atom equivalent of these emissions, multiply by the listed MWAF (0.6332) for Nickel hydroxide:

- 100 pounds x 0.6332 = 63.32 pounds of Nickel atom equivalent.

This step should be completed prior to applying the OEHHA cancer potency factor for "Nickel and compounds" in a calculation for a prioritization score or risk assessment calculation. (Note - The HARP software automatically applies the appropriate MWAF for each Hot Spots chemical (by CAS number), so the emissions should not be manually adjusted when using HARP. Therefore, if using HARP, you would use 100 pounds for Nickel hydroxide and HARP will make the MWAF adjustment for you. If not using HARP, you would use 63.32 pounds.)

[1] The value listed in the MWAF column for Asbestos is not a molecular weight adjustment. This is a conversion factor for adjusting mass and fibers or structures. See Appendix C for more information on Asbestos reporting and risk assessment information or see the EICG report for reporting guidance.

4.2.1.2 Release Parameters

Emission release parameters (e.g., stack height and inside diameter, stack gas exit velocity, release temperature and emission source location in UTM coordinates) are needed as inputs to the air dispersion model. The Inventory Guidelines specify the release parameters that must be reported for each stack, vent, ducted building, exhaust site, or other site of exhaust release. Additional information may be required to characterize releases from non-stack (volume and area) sources; see U.S. EPA dispersion modeling guidelines or specific user's manuals. This information should also be included in the air dispersion section of the risk assessment. This information must be presented in tables included in the risk assessment. Note that some dimensional units needed for the dispersion model may require conversion from the units reported in the Inventory Report (e.g., Kelvin (K) vs. degrees Fahrenheit (°F)). Chapter 9 provides an outline that specifies the content and recommended format of HRA results.

4.2.1.3 Operation Schedule

The HRA should include a discussion of the facility operation schedule and daily emission patterns. For AB2588 purposes, emissions should be reported based on routine and predictable operations. Weekly or seasonal emission patterns may vary and should be discussed. This is especially important in a refined HRA. Diurnal emission patterns should be simulated in the air dispersion model because of diurnal nature of meteorological observations. Diurnal evaluations are important to include since diurnal weather patterns and emission releases may cause significant differences in the concentration at a receptor of interest.

A table should be included listing the emission schedule on an hourly and yearly basis. In addition, the emission schedule and exposure schedule should corroborate any exposure adjustment factors used for approximating an inhaled dose. For more information about exposure adjustment factors, see Section 4.8.1. Alternatively, exposure adjustments can be made through refining the air dispersion analysis. See Section 4.11.1.2(h) for special case modeling or Appendix M. An alternative to including modeling that addresses diurnal influences would be to include a sensitivity study showing, and/or text explaining, the reason(s) why there are no significant differences due to diurnal influences on the emissions from the facility or at the receptor(s) of interest. For more guidance, you can contact the district or reviewing authority. Chapter 9 provides an outline that specifies the content and recommended format of HRA results.

4.2.1.4 Emission Controls

The HRA should include a description of control equipment, the emitting processes it serves, and its efficiency in reducing emissions of substances on the Air Toxics “Hot Spots” list. The EICG Report requires that this information be included in the Inventory Reports, along with the emission data for each emitting process. If the control equipment did not operate full-time throughout the year, then the reported overall control efficiency must be adjusted to account for any predictable downtime of the

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control equipment. Any entrainment of toxic substances to the atmosphere from control equipment should be accounted for; this includes fugitive releases during maintenance and cleaning of control devices (e.g., baghouses and cyclones). Contact the District for guidance with control equipment adjustments. Recommended default deposition rates that are used when calculating potential noninhalation health impacts are listed in Section 5.3.2. Chapter 9 provides an outline that specifies the content and recommended format of HRA results.

4.2.2 *Landfill Emissions*

Emission estimates for landfill sites should be based on testing required under Health and Safety Code, Section (HSC) 41805.5 (AB 3374, Calderon) and any supplemental AB 2588 source tests or emission estimates used to characterize air toxics emissions from landfill surfaces or through off-site migration. The District should be consulted to determine the specific Calderon data to be used in the HRA. The “Hot Spots” Program HRA for landfills should also include emissions of listed substances for all applicable power generation and maintenance equipment at the landfill site. Processes that need to be addressed include stationary internal combustion engines, flares, evaporation ponds, composting operations, boilers, and gasoline dispensing systems.

4.3 Source Characterization

Pollutants are released into the atmosphere in many different ways. The release conditions need to be properly identified and characterized to appropriately use the air dispersion models.

4.3.1 *Source Type*

Source types can be identified as point, line, area, or volume sources for input to the air dispersion model. Several air dispersion models have the capability to simulate more than one source type.

4.3.1.1 Point Sources

Point sources are probably the most common type of source and most air dispersion models have the capability to simulate them. Typical examples of point sources include exhaust stacks. Isolated vents from buildings are special examples of point sources.

4.3.1.2 Line Sources

The version 12345 or newer of the AERMOD can accommodate line sources. Line sources can be also treated as a special case of either an area or a volume source. Examples of line sources include: conveyor belts and rail lines, freeways, and busy roadways. Not all mobile sources may be subject to the Hot Spots program; however, non-motor vehicles that operate within a facility (e.g., ships, trains, and cranes, etc.) are subject to the Hot Spots program. For more information, see the ARB’s Emission Inventory and Criteria Guidelines document or ARB’s interpretation and guidance

memorandum to CAPCOA regarding mobile sources which are subject to the "Hot Spots" program. This memo can be found at http://www.arb.ca.gov/ab2588/motorv.pdf.

Mobile sources and rail lines are required to be evaluated under SB 352. SB 352 requires a risk assessment performed under the Hot Spots risk assessment guidance for proposed school sites within 500 feet of a busy roadway. Dedicated air dispersion models are available for motor vehicle emissions from roadways which are a special type of line source. These models (i.e., CALINE3, CAL3QHCR, and CALINE4) are designed to simulate the mechanical turbulence and thermal plume rise due to the motor vehicle activity on the roadway. However, these dedicated models use the Pasquill-Gifford dispersion stability classes for dispersion; the AERMOD dispersion model uses a more advanced continuous stability estimation method based on observations. The limitation with AERMOD is that the user needs to estimate initial mixing (Szo and Syo) for mechanical turbulence and thermal plume rise. Consult with the District prior to conducting roadway modeling to determine model use.

For practical information on how to simulate roadway emission dispersion using these models, see the California Air Pollution Control Officer's Association (CAPCOA) website at http://www.capcoa.org or the Sacramento Metropolitan AQMD (SMAQMD) website at http://www.airquality.org/ceqa/RoadwayProtocol.shtml. The SMAQMD has a document titled, "Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways"(January, 2010). The ARB recommends this document for SB-352 risk assessments.

4.3.1.3 Area Sources

Emissions that are to be modeled as area sources are typical of fugitive sources characterized by non-buoyant emissions containing negligible vertical extent (e.g., no plume rise or emissions distributed over a large horizontal area).

Fugitive particulate (PM2.5, PM10, TSP) emission sources include areas of disturbed ground (e.g., open pits, parking lots) which may be present during operational phases of a facility's life. Also included are areas of exposed material (e.g., storage piles and slag dumps) and segments of material transport where potential fugitive emissions may occur (uncovered haul trucks or rail cars, emissions from unpaved roads). Fugitive emissions may also occur during stages of material handling where particulate material is exposed to the atmosphere (uncovered conveyors, hoppers, and crushers).

Other fugitive emissions emanating from many points of release may be modeled as area sources. Examples include fugitive emissions from valves, flanges, venting, and other connections that occur at ground level or at an elevated level or deck if on a building or structure. Modern dispersion models include an option for an initial vertical extent (Szo) where needed.

Modeling portable equipment as an area source is a case-by-case situation that should be discussed with the District or reviewing authority. Situations may exist where this type of operation is best represented as another type of release.

4.3.1.4 Volume Sources

Non-point sources with emissions containing an initial vertical extent should be modeled as volume sources. The initial vertical extent may be due to plume rise or a vertical distribution of numerous smaller sources over a given area. Examples of volume sources include buildings with natural fugitive or passive ventilation, and line sources such as conveyor belts and rail lines.

4.3.2 *Quantity of Sources*

The number of sources at a facility may influence the selection of the air dispersion model. Some dispersion models are capable of simulating only one source at a time, and are therefore referred to as single-source models (e.g., AERSCREEN).

In some cases, for screening purposes, single-source models may be used in situations involving more than one source using one of the following approaches:

- Combining all sources into one single "representative" source

In order to be able to combine all sources into one single source, the individual sources must have similar release parameters. For example, when modeling more than one stack as a single "representative" stack, the stack gas exit velocities and temperatures must be similar. In order to obtain a conservative estimate, the values leading to the higher concentration estimates should typically be used (e.g., the lowest stack gas exit velocity and temperature, the height of the shortest stack, and a receptor distance and spacing that will provide maximum concentrations, etc.).

- Running the model for each individual source and superimposing results

Superimposition of results of single sources of emissions is the actual approach followed by all the Gaussian models capable of simulating more than one source. Simulating sources in this manner may lead to conservative estimates if worst-case meteorological data are used or if the approach is used with a model that automatically selects worst-case meteorological conditions, especially wind direction. The approach will typically be more conservative the farther apart the sources are because each run would use a different worst-case wind direction.

Additional guidance regarding source merging is provided by the U.S. EPA (1995a). It should be noted that depending upon the population distribution, the total burden can actually increase when pollutants are more widely dispersed. If the total burden from the facility or zone of impact (see Section 4.6.1) could increase for the simplifying modeling assumptions described above, the District should be consulted.

4.4 Terrain Type

Two types of terrain characterizations are required to select the appropriate model. One classification is made according to land type and another one according to terrain topography.

4.4.1 *Terrain Type – Land Use*

Some air dispersion models (e.g., CALINE) use different dispersion coefficients (sigmas) depending on the land use over which the pollutants are being transported. The land use type is also used by some models to select appropriate wind profile exponents. Traditionally, the land type has been categorized into two broad divisions for the purposes of dispersion modeling: urban and rural. Accepted procedures for determining the appropriate category are those suggested by Irwin (1978): one based on land use classification and the other based on population.

The land use procedure is generally considered more definitive. Population density should be used with caution and should not be applied to highly industrialized areas where the population density may be low. For example, in low population density areas a rural classification would be indicated, but if the area is sufficiently industrialized the classification should already be "urban" and urban dispersion parameters should be used.

If the facility is located in an area where land use or terrain changes abruptly, for example, on the coast, the District should be consulted concerning the classification. If need be, the model should be run in both urban and rural modes and the District may require a classification that biases estimated concentrations towards over prediction. As an alternative, the District may require that receptors be grouped according to the terrain between source and receptor.

AERMOD is the U.S. EPA's preferred dispersion model for a wide range of applications in rural or urban conditions. The users should refer to section 5.0 of the AERMOD Implementation Guide to determine urban or rural conditions.

The Land Use and the Population Density Procedures discussed above are described as follows.

4.4.1.1 Land Use Procedure

(1) Classify the land use within the total area A, circumscribed by a 3 km radius circle centered at the source using the meteorological land use typing scheme proposed by Auer (1978) and shown in Table 4.1.

(2) If land use types I1, I2, C1, R2 and R3 account for 50 percent or more of the total area *A* described in (1), use urban dispersion coefficients. Otherwise, use appropriate rural dispersion coefficients.

4.4.1.2 Population Density Procedure

(1) Compute the average population density (*p*) per square kilometer with *A* as defined in the Land Use procedure described above. (Population estimates are also required to determine the exposed population; for more information see Section 4.6.3.)

(2) If *p* is greater than 750 people/km^2 use urban dispersion coefficients, otherwise, use appropriate rural dispersion coefficients.

Table 4.1 Identification and classification of land use types (Auer, 1978)

Used to define rural and urban dispersion coefficients in certain models.

Type	Use and Structures	Vegetation
I1	*Heavy Industrial* Major chemical, steel and fabrication industries; generally 3-5 story buildings, flat roofs	Grass and tree growth extremely rare; <5% vegetation
I2	*Light-moderate industrial* Rail yards, truck depots, warehouses, industrial parks, minor fabrications; generally 1-3 story buildings, flat roofs	Very limited grass, trees almost totally absent; <5% vegetation
C1	*Commercial* Office and apartment buildings, hotels; >10 story heights, flat roofs	Limited grass and trees; <15% vegetation
R1	*Common residential* Single family dwelling with normal easements; generally one story, pitched roof structures; frequent driveways	Abundant grass lawns and light-moderately wooded; >70% vegetation
R2	*Compact residential* Single, some multiple, family dwelling with close spacing; generally <2 story, pitched roof structures; garages (via alley), no driveways	Limited lawn sizes and shade trees; <30% vegetation
R3	*Compact residential* Old multi-family dwellings with close (<2 m) lateral separation; generally 2 story, flat roof structures; garages (via alley) and ashpits, no driveways	Limited lawn sizes, old established shade trees; <35% vegetation
R4	*Estate residential* Expansive family dwelling on multi-acre tracts	Abundant grass lawns and lightly wooded; >80% vegetation
A1	*Metropolitan natural* Major municipal, state, or federal parks, golf courses, cemeteries, campuses; occasional single story structures	Nearly total grass and lightly wooded; >95% vegetation
A2	Agricultural rural	Local crops (e.g., corn, soybean); >95% vegetation
A3	*Undeveloped* Uncultivated; wasteland	Mostly wild grasses and weeds, lightly wooded; >90% vegetation
A4	Undeveloped rural	Heavily wooded; >95% vegetation
A5	*Water surfaces* Rivers, lakes	

4.4.2 *Terrain Type - Topography*

Surface conditions and topographic features generate turbulence, modify vertical and horizontal winds, and change the temperature and humidity distributions in the boundary layer of the atmosphere. These in turn affect pollutant dispersion and models differ in their need to take these factors into account.

The classification according to terrain topography should ultimately be based on the topography at the receptor location with careful consideration of the topographical features between the receptor and the source. Differentiation of simple versus complex terrain is unnecessary with AERMOD. In complex terrain, AERMOD employs the well-known dividing-streamline concept in a simplified simulation of the effects of plume-terrain interactions. For other plume models, topography can be classified as follows:

4.4.2.1 Simple Terrain (also referred to as "Rolling Terrain")

Simple terrain is all terrain located below stack height including gradually rising terrain (i.e., rolling terrain). Note that *Flat Terrain* also falls in the category of simple terrain.

4.4.2.2 Intermediate Terrain

Intermediate terrain is terrain located above stack height and below plume height. The recommended procedure to estimate concentrations for receptors in intermediate terrain is to perform an hour-by-hour comparison of concentrations predicted by simple and complex terrain models. The higher of the two concentrations should be reported and used in the risk assessment.

4.4.2.3 Complex Terrain

Complex terrain is terrain located above plume height. Complex terrain models are necessarily more complicated than simple terrain models. There may be situations in which a facility is "overall" located in complex terrain but in which the nearby surroundings of the facility can be considered simple terrain. In such cases, receptors close to the facility in this area of simple terrain will "dominate" the risk analysis and there may be no need to use a complex terrain model. It is unnecessary to determine which terrain dominates the risk analysis for users of AERMOD.

4.5 Level of Detail: Screening vs. Refined Analysis

Air dispersion models can be classified according to the level of detail which is used in the assessment of the concentration estimates as "screening" or "refined". Refined air dispersion models use more robust algorithms capable of using representative meteorological data to predict more representative and usually less conservative estimates. Refined air dispersion models are, however, more resource intensive than their screening counterparts. It is advisable to first use a screening model to obtain conservative concentration estimates and calculate health risks. If the health risks are estimated to be above the threshold of concern, then use of a refined model to calculate

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more representative concentration and health risk estimates would be warranted. There are situations when screening models represent the only viable alternative (e.g., when representative meteorological data are not available). The district or reviewing authority should be consulted to determine the appropriate method for determining the level of detail in the modeling analysis. The HARP software will incorporate the capability of using either representative meteorological data from AERMOD or the default meteorological conditions from the AERSCREEN model.

It is acceptable to use a refined air dispersion model in a "screening" mode for this program's health risk assessments. In this case, a refined air dispersion model is used:

- with worst-case meteorology instead of representative meteorology;
- with a conservative averaging period conversion factor to calculate longer term concentration estimates (see Section 4.10 for more discussion on screening air dispersion models and adjustments factors).

Note that use of worst case meteorology in a refined model is not the normal practice in New Source Review or Ambient Air Quality Standard evaluation modeling.

4.6 Population Exposure

The level of detail required for the analysis (e.g., screening or refined), and the procedures to be used in determining geographic resolution and exposed population require case-by-case analysis and professional judgment. The District should be consulted before beginning the population exposure estimates, and as results are generated, further consultation may be necessary. Some suggested approaches and methods for handling the breakdown of population and performance of a screening or detailed risk analysis are provided in this section.

In addition to estimating individual cancer risk at specific points such as the MEI (maximally exposed individual), OEHHA recommends determining the number of people who reside within the 1×10^{-6}, 1×10^{-5}, 1×10^{-4}, and higher cancer risk isopleths. For noncancer population evaluations, the number of people who reside within the 0.5, one, five, or higher hazard index isopleths should be reported. The HARP software can provide population exposure estimates as cancer burden or as the number of persons exposed to a selected (user identified) health risk/impact level. Information on obtaining the HARP software can be found under the Hot Spots Program on the ARB's web site at www.arb.ca.gov. Chapter 9 provides an outline that specifies the content and recommended format of HRA results.

4.6.1 *Zone(s) of Impact*

As part of the estimation of the population exposure for the cancer risk analysis, it is necessary to determine the geographic area affected by the facility's emissions. An initial approach to define a "zone of impact" surrounding the source is to generate an isopleth where the total excess lifetime cancer risk from inhalation exposure to all emitted carcinogens is greater than 10^{-6} (one in 1,000,000).

For noncarcinogens, a second, third, and fourth isopleth (to represent the chronic, 8-hour, and acute impacts) should be created to define the zone of impact for the hazard index from both inhalation and noninhalation pathways greater than or equal to 1.0. For clarity these isopleths may need to be presented on separate maps in the HRA.

Contact the District or reviewing authority to discuss inclusion of isopleth maps if all potential health risks fall within the facility boundary and no receptors have, or will ever, be present within the boundary (also see Section 4.7.1 for a discussion of on-site receptors).

The initial "zone of impact" can be determined as follows:

- Use a screening dispersion model (e.g., AERSCREEN) to obtain concentration estimates for each emitted pollutant at varying receptor distances from the source. Several screening models feature the generation of an automatic array of receptors which is particularly useful for determining the zone of impact. In order for the model to generate the array of receptors the user needs to provide some information normally consisting of starting distance, increment and number of intervals.

- Calculate total cancer risk and hazard index (HI) for each receptor location by using the methods provided in the risk characterization sections in Chapter 8 of the Air Toxics Hot Spots Risk Assessment Guidance Manual.

- Find the distance where the total inhalation cancer risk is equal to 10^{-6}; this may require redefining the receptor array in order to have two receptor locations that bound a total cancer risk of 10^{-6}. Next, find the distance where the chronic, 8-hour, and acute health hazard indices are declared significant by the District (e.g., acute, 8-hour, or chronic HI = 1.0).

Some Districts may prefer to use a cancer risk of 10^{-7} or an HI of 0.5 as the zone of impact. Therefore, the District should be consulted before modeling efforts are initiated. If the zone of impact is greater than 25 km from the facility at any point, then the District should be consulted. The District may specify limits on the area of the zone of impact. Ideally, these preferences would be presented in the modeling protocol (see Section 4.14).

Note that when depicting the risk assessment results, risk isopleths must present the total cancer and noncancer risk from both inhalation and noninhalation pathways. The zone of impact should be clearly shown on a map with geographic markers of adequate resolution (see Section 4.6.3.1). The text below discusses methodology for defining the zone of impact and has format recommendations. Chapter 9 provides an outline that specifies the content and recommended format of all HRA results.

The zone of impact can be defined once the exposure assessment (air dispersion modeling) process has determined the pollutant concentrations at each designated off-site receptor and a risk analysis (see Chapter 8) has been performed. For clarity, the cancer and noncancer zone(s) of impact should be presented on separate maps. A

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map illustrating the carcinogenic zone of impact is required. The District may at its discretion ask for the map illustrating the potential carcinogenic zone of impact to identify the zone of impact for the minimum exposure pathways (inhalation, soil, dermal, and mother's milk) and the zone of impact for all applicable pathways of exposure (minimum pathways plus site/route dependent pathways). Two maps may be needed to accomplish this. The legend of these maps should state the level(s) used for the zone of impact and identify the exposure pathways that were included in the assessment.

The noncancer maps should also clearly identify the noncancer zones of impact. These include the acute (inhalation) zone of impact, 8-hour (inhalation) zone of impact and the chronic (including both inhalation, multipathway) zone of impact. The District may at its discretion require separate chronic inhalation and chronic multipathway zones of impact maps. For clarity, presentation of the two chronic zones of impact may also require two or more maps. The legend of these maps should state the level(s) used for the zone of impact and identify the exposure pathways (and target organs) that were included in the assessment. Further information regarding the methods for determination of hazard indices and cancer risk are discussed in Chapter 8 and Appendix I.

4.6.2 *Screening Population Estimates for Risk Assessments*

A screening risk assessment should include an estimate of the maximum exposed population. For screening risk assessments, a detailed description of the exposed population is not required. The impact area to be considered should be selected to be health protective (i.e., will not underestimate the number of exposed individuals). A health-protective assumption is to assume that all individuals within a large radius of the facility are exposed to the maximum concentration. If a facility must also comply with the RCRA/CERCLA risk assessment requirements, health effects to on-site workers may also need to be addressed. The DTSC's Remedial Project Manager should be consulted on this issue. The District should be consulted to determine the population estimate that should be used for screening purposes. Guidance for one screening method is presented here.

1. Use a screening dispersion model (e.g., AERSCREEN) to obtain concentration estimates for each emitted pollutant at varying receptor distances from the source. Several screening models feature the generation of an automatic array of receptors that is particularly useful for determining the zone of impact. In order for the model to generate the array of receptors, the user needs to provide some information normally consisting of starting distance, increment, and number of intervals.

2. Calculate the potential cancer risk and hazard index for each receptor location by using the methods provided in the risk characterization sections of this document (Chapter 8).

3. Find the distance where the potential cancer risk is equal to District specified levels (e.g., 10^{-6}); this may require redefining the receptor array in order to have

two receptor locations that bound a total cancer risk of 10^{-6}. This exercise should be repeated for the noncancer health impacts.

4. Calculate cancer burden by estimating the number of people in the grid and stipulate that all are exposed at the highest level.

4.6.3 *Refined Population Estimates for Risk Assessments*

The refined HRA requires a detailed analysis of the population exposed to emissions from the facility. Where possible, a detailed population exposure analysis provides estimates of the number of individuals in residences and offsite workplaces, as well as at sensitive receptor sites such as schools, daycare centers and hospitals. The District may require that locations with high densities of sensitive individuals be identified (e.g., schools, daycare centers, hospitals). These population analyses can include exposure estimates for workers and residents through the use of land use maps or other tools. The overall exposed residential and worker populations should be apportioned into smaller geographic subareas. The information needed for each subarea is:

1. The number of exposed persons, and
2. The receptor location at which the calculated ambient air concentration is assumed to be representative of the exposure to the entire population in the subarea.

A multi-tiered approach is suggested for the population analysis. Census tracts, which the facility could significantly impact, should be identified (see Section 4.6.3.1). A census tract should be divided into smaller subareas if it is close to the facility where ambient concentrations vary widely. The District may determine that census tracts provide sufficient resolution near the facility to adequately characterize population exposure or they may prefer the census information to be evaluated using smaller blocks. Further downwind where ambient concentrations are less variable, the census tract level may be acceptable to the District. The District may determine that the aggregation of census tracts (e.g., when the census tracts making up a city are combined) is appropriate for receptors that are considerable distances from the facility.

If a facility must also comply with the RCRA/CERCLA HRA requirements, health effects to on-site workers may also need to be addressed. The DTSC's Remedial Project Manager should be consulted on this issue. In some cases it may be appropriate to evaluate risks to on-site receptors. The district should be consulted about special cases for which evaluation of on-site receptors is appropriate, such as facilities frequented by the public or where people may reside (e.g., military facilities).

4.6.3.1 Census Tracts

For a refined risk assessment, the boundaries of census tracts can be used to define the geographic area to be included in the population exposure analysis. Digital maps showing the census tract boundaries in California can be obtained from "The Thomas

Guide"® on the World Wide Web. Statistics for each census tract can be obtained from the U.S. Census Bureau. The website address for the U.S. Census Bureau is http://www.census.gov. Numerous additional publicly accessible or commercially available sources of census data can be found on the World Wide Web. A specific example of a census tract is given in Appendix K. The HARP software includes U.S. census data and is a recommended tool for performing population exposure estimates.

The two basic steps in defining the area under analysis are:

(1) Identify the "zone of impact" (as defined previously in Section 4.6.1) on a map detailed enough to provide for resolution of the population to the subcensus tract level. (The U.S. Geological Survey (USGS) 7.5-minute series maps and the maps within the HARP software provide sufficient detail.) This is necessary to clearly identify the zone of impact, location of the facility, and sensitive receptors within the zone of impact. If significant development has occurred since the USGS survey, this should be indicated. A specific example of a 7.5-minute series map is given in Appendix K.

(2) Identify all census tracts within the zone of impact using a U.S. Bureau of Census or equivalent map (e.g., Thomas Brothers, HARP Software). If only a portion of the census tract lies within the zone of impact, then only the population that falls within the isopleth should be used in the population estimate or burden calculation. To determine this level of detail, local planning and zoning information may need to be collected. When this more detailed information is not available, then a less refined approach is to include the census data if the centroid of the census block falls within the isopleths of interest. The census tract boundaries should be transferred to a map, such as a USGS map (referred to hereafter as the "base map".)

An alternative approach for estimating population exposure in heavily populated urban areas is to apportion census tracts to a Cartesian grid cell coordinate system. This method allows a Cartesian coordinate receptor concentration field to be merged with the population grid cells. This process can be computerized and minimizes manual mapping of centroids and census tracts. The HARP software includes this function and will provide population estimates that are consistent with the methodology discussed here.

The District may determine that aggregation of census tracts (e.g., which census tracts making up a city can be combined) is appropriate for receptors that are located at considerable distances from the facility. If the District permits such an approach, it is suggested that the census tract used to represent the aggregate be selected in a manner to ensure that the approach is health protective. For example, the census tract included in the aggregate that is nearest (downwind) to the facility should be used to represent the aggregate.

4.6.3.1.1 Subcensus Tract

Within each census tract are smaller population units. These units [urban block groups (BG) and rural enumeration districts (ED)] contain about 1,100 persons. BGs are

further broken down into statistical units called blocks. Blocks are generally bounded by four streets and contain an average of 70 to 100 persons. However, this range in population is an average and population units may vary significantly. In some cases, the EDs are very large and identical to a census tract.

The area requiring detailed (subcensus tract) resolution of the exposed residential and worker population will need to be determined on a case-by-case basis through consultation with the District. The District may determine that census tracts provide sufficient resolution near the facility to adequately characterize population exposure.

Employment population data can be obtained at the census tract level from the U.S. Census Bureau or from local planning agencies. This degree of resolution will generally not be sufficient for most risk assessments. For the area requiring detailed analysis, zoning maps, general plans, and other planning documents should be consulted to identify subareas with worker populations.

The boundaries of each residential and employment population area should be transferred to the base map.

4.6.4 *Sensitive Receptor Locations*

Individuals who may be more sensitive to toxic exposures than the general population are distributed throughout the total population. Sensitive populations may include young children and chronically ill individuals. The District may require that locations with high densities of sensitive individuals be identified (e.g., schools, nursing homes, residential care facilities, daycare centers, and hospitals). The HRA should state what the District requirements are regarding identification of sensitive receptor locations.

Although protection of sensitive individuals is incorporated into OEHHA's risk assessment methodology in both cancer risk and noncancer risk assessment, the assessment of risk at the specific location of such sensitive individuals (e.g., schools, hospitals, or nursing homes) may be useful to assure the public that such individuals are being considered in the analysis. For some chemicals (e.g., mercury and manganese) children have been specifically identified as the sensitive subpopulation for noncancer health impacts, so it can be particularly appropriate to assess school sites.

4.7 Receptor Siting

4.7.1 *Receptor Points*

The modeling analysis should contain a network of receptor points with sufficient detail (in number and density) to permit the estimation of the maximum concentrations. Locations that must be identified include:

- The maximum estimated off-site impact or point of maximum impact (PMI),
- The maximum exposed individual at an existing residential receptor (MEIR),
- The maximum exposed individual at an existing occupational worker receptor (MEIW).

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Note that some situations may also require that on-site receptor (worker or residential) locations be evaluated. The risk assessor can contact the District or reviewing authority for guidance if on-site exposure situations are present at the emitting facility. However, these on-site locations should be included in the HRA. Some examples where the health impacts of on-site receptors may be appropriate could be military base housing, prisons, universities, day care facilities, or locations where the public may have regular access for the appropriate exposure period (e.g., a lunch time café or museum for acute exposures). When a receptor lives and works on the facility, site, or property, then these receptors should be evaluated and reported under both residential and worker scenarios and the one that is most health protective should be used for risk management decisions. The cancer risk estimates for the onsite residents may use a 30-year exposure duration while the 25-year exposure duration is used for a worker. Under a Tier 2 analysis, alternate exposure durations may be evaluated and presented with all assumptions supported.

All of these locations (i.e., PMI, MEIR, and MEIW) must be identified for potential multipathway carcinogenic and noncarcinogenic effects. It is possible that the estimated PMI, MEIR, and MEIW risk for cancer, chronic noncancer, 8-hour, and acute noncarcinogenic risks occur at different locations or that some of these evaluations may not be necessary (e.g., the receptor does not exist). For example, some facilities will not have off-site workers in the vicinity of the facility and will not need to evaluate worker exposure, or the exposure situation may only require the evaluation of short-term carcinogenic or acute noncancer impacts (see Section 8.2.10 for a discussion of short-term projects). The approval to revise the exposure assessment for a receptor, or to omit the MEIW receptor, should be verified in writing with the District or reviewing authority and included in the HRA.

Other sensitive receptor locations may also be of interest and required to be included in the HRA. The District or reviewing authority should be consulted to determine which sensitive receptor locations must be included.

The results from a screening model (if available) can be used to identify the area(s) where the maximum concentrations are likely to occur. Receptor points should also be located at the population centroids (see Section 4.7.2) and sensitive receptor locations (see Section 4.6.4). The exact configuration of the receptor array used in an analysis will depend on the topography, population distribution patterns, and other site-specific factors. All receptor locations should be identified in the HRA using UTM (Universal Transverse Mercator) coordinates and receptor number. The receptor numbers in the summary tables should match receptor numbers in the computer output (e.g., HARP output files). In addition to actual UTM coordinates, the block/street locations (i.e., north side of 3,000 block of Smith Street) should be provided in the HRA for the PMI, MEIR, and MEIW for carcinogenic and noncarcinogenic health effects. Chapter 9 provides an outline that specifies the content and recommended format of HRA results.

4.7.1.1 Receptor Height

To evaluate localized impacts, receptor height should be taken into account at the point of maximum impact on a case-by-case basis. For example, receptor heights may have to be included to account for receptors significantly above ground level. Flagpole receptors at the height of the breathing zone of a person may need to be considered when the source receptor distance is less than a few hundred meters. Consideration must also be given to the noninhalation pathway analysis which requires modeling of chemical deposition onto soil or water at ground level. For the inhalation pathway, a health protective approach is to select a receptor height from 0 meters to 1.8 meters that will result in the highest predicted downwind concentration. Final approval of this part of the modeling protocol should be with the District or reviewing authority.

4.7.2 *Centroid Locations*

For each subarea analyzed, a centroid location (the location at which a calculated ambient concentration is assumed to represent the entire subarea) should be determined. When population is uniformly distributed within a population unit, a geographic centroid based on the shape of the population unit can be used. If only a portion of the census tract lies within the isopleth or area of interest, then only the population that falls within the isopleth should be used in the calculation for population exposure. To determine this level of detail, local planning and zoning information may need to be collected. Where populations are not uniformly distributed, a population-weighted centroid may be used. Another alternative uses the concentration at the point of maximum impact within that census tract as the concentration to which the entire population of that census tract is exposed. While this less refined approach is commonly accepted, Districts should be contacted to approve this method prior to its use in a risk assessment.

The centroids represent locations that should be included as receptor points in the dispersion modeling analysis. Annual average concentrations should be calculated at each centroid using the modeling procedures presented in this chapter.

For census tracts and BG/EDs, judgments can be made using census tracts maps and street maps to determine the centroid location. At the block level, a geographic centroid is sufficient.

4.7.3 *Spatial Averaging*

Since the inception of the “Hot Spots” and California’s Air Toxics Programs, HRA results for an individual receptor have typically been based on air dispersion modeling results at a single point or location. With a few exceptions, this method has been traditionally used for all types of receptors (e.g., PMI, MEIR, MEIW, pathway receptors, etc.). The assumptions used in risk assessment are designed to prevent underestimation of health impacts to the public resulting in a health protective approach. However, basing risk estimates on a single highest point (PMI, MEIR, or MEIW) does not take into account that a person does not remain at one location on their property, or in one location at the

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workplace over an extended period of time. Therefore, the average air concentration over a small area is likely to be more representative than using the air concentration at a single point, particularly in those situations where concentrations fall off rapidly around that single point. The concept of averaging air concentrations over a small area is known as spatial averaging.

In order to understand how spatial averaging can impact air dispersion modeling results with various types of facilities, the ARB, in conjunction with the OEHHA, performed sensitivity analyses to evaluate the impacts of spatially averaging air dispersion modeling results (see Appendix C of the Air Toxics Hot Spots Program Risk Assessment Guidelines: Technical Support Document for Exposure Assessment and Stochastic Analysis (EASA)). Based on these sensitivity analyses, it is reasonable and appropriate to include spatial averaging techniques in air toxic risk assessments as supplemental information to Tier 1 information (i.e., modeling results that are based on the air concentration from a single point or location). While all risk assessments must include results based on Tier 1 methodology, the spatially averaged concentrations around the point of interest (e.g., PMI, MEIR, MEIW, multipathway exposure evaluations, etc.) could also be included as an option in risk assessments and acceptable for risk management decisions subject to approval by the District or reviewing agency. Spatial averaging is an option for the purpose of additional refinement to the risk assessment.

A few reasons that support the inclusion of spatially averaged modeled concentrations in risk assessment include the following:

- Averaging results over a small domain will give a more representative picture of individual exposure and risk than an estimate based on one single location within their property.
- Spatial averaging will allow air dispersion modeling and risk assessment results to be characterized as the estimated concentration and risk in a discrete area of interest, rather than an exact value for a single location.
- From a risk communication standpoint, the ARB and OEHHA feel it is more appropriate to present the modeling output and the calculated health impacts as the potential impacts within a small or discrete area, rather than an exact value at a specific point on a grid or map.
- Spatial averaging is the recommended procedure in ARB’s Lead Risk Management Guidelines (2001) and has been used in several complex source HRAs [e.g., Roseville Railyard (2004), Ports of LA/LB (2006), Port of Oakland (2008)].
- Spatially averaging the deposition concentrations over pasture land, a garden, or a water body for multipathway exposure scenarios is a planned upgrade for the HARP Software. This will provide an option that will refine multipathway exposure assessments. Average deposition on these types of areas (e.g., a water body) is not necessarily well represented by the single highest point of deposition, or deposition at the geographic center of the water body. Likewise, since produce is grown over the entire surface of the garden and cows graze the

entire pasture, deposition is better estimated by evaluating the entire area rather than using a single point.

4.7.3.1 Spatial Averaging Methodology

The spatial averaging sensitivity study in Appendix C of the EASA is based on simulating emissions from point, volume, area, and line sources. Most source types (e.g., point) are simulated as a small, medium or large source. Line sources are only simulated as small and large. In addition, meteorological data collected at five different locations in California were used. Nested spatial average grids of various domains were used to study the differences on the spatial average concentration. In the case of the 20 meter by 20 meter spatial average nested grid, the spatial average concentration showed little change over the PMI for medium and large sources. In the case for small sources, the spatial average concentration is approximately 45% to 80% of the PMI concentration. Individual source type and meteorological conditions will cause variations in these results.

The results of the spatial averaging sensitivity study in Appendix C of the EASA shows that sources with low plume rise that result in a PMI, MEIW, or MEIR located at or near the property fence line are most sensitive to spatial averaging. Source types with high plume rise (e.g., tall stacks) show a PMI far downwind where the concentration gradient is more gradual and therefore spatial averaging has a lesser effect. While spatial averaging can be used regardless of source size or the location of the PMI, the following conditions generally apply when a source is a good candidate for spatial averaging:

- The MEIR, MEIW, or PMI is located at the fence line or close to the emission source.
- The concentration gradient is high near the PMI. This is more associated with low level plumes such as fugitive, volume, area, or short stacks.
- A long term average is being calculated to represent a multi-year risk analysis based on one to five years of meteorological data. Note that spatial averaging should **not** be used for short term (acute) calculations.

In general, the method for calculating the spatial average in air toxic risk assessments includes the following steps:

1. Locate the point(s) of interest and receptor(s) (i.e., PMI, MEIW, MEIR, and any additional receptor locations of interest or concern) with a grid resolution spacing of no greater than five meters. To achieve this, two or more modeling runs with successively finer nested grid resolutions may be needed to find the final location where the nested grid that will be used for spatial averaging will be placed.

2. Center the spatial average nested grid on the each receptor's location of interest determined in step 1. Limit the nested grid to no larger than 20 meters by 20 meters or 400 square meters. Note that if a portion of the centered and nested grid falls within the facility boundary and the receptor location of interest is outside of the boundary, then adjustments to the nested grid to obtain the spatially-averaged concentration for the offsite receptor are reasonable. This may be done by either repositioning the nested grid to cover 400 square meters of off-boundary area surrounding the receptor or center the nested grid and delete any on-site grid points so that only the offsite grid points surrounding the receptor are used in the spatially averaged concentration. The grid resolution spacing should be no greater than five meters. With a five meter grid resolution, the 20 meter by 20 meter domain will result in 25 receptors. The size, shape, and placement of the domain and the resolution of points are subject to approval by the District, ARB, or other reviewing authority. See the Sections 4.7.3.1.2 and 4.7.3.1.3 below for additional discussion on domain sizing and grid spacing at worksites, pastures, gardens, and water bodies.
3. Some configurations of source activity and meteorological conditions result in a predominant downwind plume center line that is significantly askew from one of the four ordinate directions. In this case, a tilted nested grid is necessary to coincide with the dominant plume centerline. Polar receptors are easier to implement than a tilted rectangular grid. The domain of the polar receptor field should be limited to a 15 meter radius. See Appendix C of the EASA for detailed instructions on tilted polar receptors.
4. Calculate the arithmetic mean of the long term period average concentration (e.g., annual average) of the nested grid of receptors to represent the spatial average. This average is used in the risk calculations.
5. Document and include all methods, assumptions, data, maps, and files used in the spatial averaging analysis and clearly present this information in the risk assessment following the requirements of the District or reviewing authority. Note that in the update to the HARP software, functionality will be included that will assist with spatial averaging and the methodology discussed.

The following sections discuss the use of spatial averaging for various receptor types and exposure pathways.

4.7.3.1.1 Residential Receptors

Follow the steps in Section 4.7.3 outlining the spatial averaging methodology. To remain health protective when evaluating a residential receptor, spatial averaging should not take place using large nested domains. The domain used for spatial averaging should be no larger than 20 meters by 20 meters with a maximum grid spacing resolution of equal to or less than five meters. This domain represents an area

that is approximately the size of a small urban lot. The size of the domain and resolution of points shall be subject to approval by the District, ARB, or other reviewing authority.

4.7.3.1.2 Worker Receptors

Offsite worker locations (e.g. MEIW) may also be a candidate for spatial averaging. However, workers can be at the same location during almost their entire daily work shift (e.g., desk/office workers). When this is the situation, then the traditional method of using a single location and corresponding modeled concentration is appropriate. If spatial averaging is used, care should be taken to determine the proper domain size and grid resolution. Follow the steps in Section 4.7.3 outlining the spatial averaging methodology. To be consistent with the residential receptor assumptions and remain health protective, a modeling domain size no larger than 20 meters by 20 meters is recommended with a grid spacing resolution of equal to or less than five meters. However, if workers routinely and continuously move throughout the worksite over a space greater than 20 meters by 20 meters, then a larger domain may be considered.

The HRA or modeling protocol shall support all assumptions used, including, but not limited to, documentation for all workers showing the area where each worker routinely performs their duties and the percentage of time spent in those areas. The final domain size should not be greater than the smallest area of worker movement. Other considerations for determining domain size and grid spacing resolution may include an evaluation of the concentration gradients across the worker area. The grid spacing used within the domain to find the concentration that will be used to calculate health impacts should be sufficient in number and detail to obtain a representative concentration across the area of interest. The size of the domain and resolution of points shall be subject to approval by the District, ARB, or other reviewing authority.

4.7.3.1.3 Pastures, Gardens, or Water Bodies

The simplified approach of using the concentration (deposition rate) at the centroid, a specific point of interest, or the PMI location for an area being evaluated for noninhalation exposures (e.g., a body of water used for fishing, a pasture used for grazing, area of a garden, etc.) is acceptable for use in HRA. However, evaluating deposition concentrations over pasture land, a garden, or a water body for multipathway exposure scenarios using spatial averaging could give more representative estimates of the overall deposition rate. Use of spatial averaging in this application is subject to approval by the District, ARB, or other reviewing authority.

If spatial averaging will be done, follow the steps in Section 4.7.3.1 outlining the spatial averaging methodology. When using spatial averaging over the deposition area, care should be taken to determine the proper domain size to make sure it includes all reasonable areas of potential deposition. The size and shape of the area of interest (e.g., pasture or water body) should be identified and used for the modeling domain. The grid spacing or resolution used within the domain should be sufficient in detail to obtain a representative deposition concentration across the area of interest. One way

to determine the grid resolution is to include an evaluation of the concentration gradients across the deposition area. The HRA or modeling protocol shall support all assumptions used, including, but not limited to, documentation of the deposition area (e.g., size and shape of the pasture, garden, or water body, maps, representative coordinates, grid resolution, concentration gradients, etc.). The size of the domain and grid resolution is subject to approval by the reviewing authority.

In lieu of following the details in the paragraph above, the approach used for the other receptors (e.g., MEIR, MEIW) that uses a domain size not greater than 20 meters by 20 meters, located on the PMI within the area of interest, with a maximum grid spacing resolution of five meters, can be used. This default refined approach would apply to deposition areas greater than 20 meters by 20 meters. For smaller deposition areas, the simplified approach of using the PMI for the area, the concentration at the centroid or a specific point of interest, or averaging over the actual smaller domain can be used. This again is subject to approval by the reviewing authority.

The HRA or modeling protocol shall support all assumptions used, including, but not limited to, documentation of the deposition area (e.g., size and shape of the water body, pasture, or garden; all data; maps; representative coordinates, and etc.), and the details clarifying how and where the averaging was done (e.g., location and magnitude of concentration gradients, the grid spacing used).

4.8 Meteorological Data

Refined air dispersion models require hourly meteorological data. The first step in obtaining meteorological data should be to check with the District and the ARB for data availability. Other sources of data include the National Weather Service (NWS), National Climatic Data Center (NCDC), Asheville, North Carolina, ARB meteorological database (METDB), military stations and private networks. Meteorological data for a subset of NWS stations are available from the U.S. EPA Support Center for Regulatory Air Models (SCRAM). The SCRAM can be accessed at www.epa.gov/scram001/main.htm. All meteorological data sources should be approved by the District. Data not obtained directly from the District or the ARB should be checked for quality, representativeness, and completeness. It should be approved by the District before use. U.S. EPA provides guidance (U.S. EPA, 1995e) for these data. Meteorological data may need further processing. Data users can consult with the District or the ARB on how to process the raw meteorological data. The risk assessment should indicate if the District required the use of a specified meteorological data set. All memos indicating District approval of meteorological data should be attached in an appendix. If no representative meteorological data are available, screening procedures should be used as indicated in Section 4.10.

The analyst should acquire enough meteorological data to ensure that the worst-case meteorological conditions are represented in the model results. The US-EPA Guideline on Air Quality Models (U.S. EPA 2005) prefers that the latest five years of consecutive meteorological data be used to represent long term averages (i.e., cancer and chronic impacts). Previous OEHHA guidance allowed the use of the worst-case year to save

computer time. The processing speed of modern computers has increased to the point where processing five years of data over one year is no longer burdensome. However, the District may determine that one year of representative meteorological data is sufficient to adequately characterize the facility's impact. This may especially be the case when five years of quality consecutive data are not available.

To determine long term average concentrations the data can be averaged. For calculation of the one-hour maximum concentrations needed to evaluate acute effects, the worst-case year should be used in conjunction with the maximum hourly emission rate. For example, the long term average concentration and one-hour maximum concentration at a single receptor for five years of meteorological data are calculated below:

Year	Annual Average ($\mu g/m^3$)	Maximum One-Hour ($\mu g/m^3$)
1	7	100
2	5	80
3	9	90
4	8	110
5	6	90
5-year average	7	

In the above example, the long-term average concentration over five years is 7 $\mu g/m^3$. Therefore, 7 $\mu g/m^3$ should be used to evaluate carcinogenic and chronic effects (i.e., annual average concentration). The one-hour maximum concentration is the highest one-hour concentration in the five-year period. Therefore, 110 $\mu g/m^3$ is the peak one-hour concentration that should be used to evaluate acute effects.

The higher hourly concentration usually occurs when meteorological dispersion conditions become worse, such as, calm or light wind, inversion, etc. Inversion usually happens in late afternoon through early morning. As the sun goes down, the atmospheric temperature near surface starts to fall, usually faster than the temperature in the upper atmosphere causing a temperature inversion layer to form and extend downward. This inversion layer usually sustains throughout the night, and remains until early morning. Because of the inversion (cold air sitting on warm air at the top of the inversion layer), pollutant vertical mixing is very low in the morning.

When predicted concentrations are high and the mixing height is very low for the corresponding averaging period, the modeling results deserve additional consideration. For receptors in the near field, it is within the model formulation to accept a very low mixing height for short durations. However, it would be unlikely that the very low mixing height would persist long enough for the pollutants to travel into the far field. In the

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event that the analyst identifies any of these time periods, they should be discussed with the District on a case-by-case basis.

4.8.1 *Meteorological Data Formats*

Most short-term dispersion models require input of hourly meteorological data in a format which depends on the model. U.S. EPA provides software for processing meteorological data for use in U.S. EPA recommended dispersion models. U.S. EPA recommended meteorological processors include the Meteorological Processor for Regulatory Models (MPRM), PCRAMMET, and AERMET. Use of these processors will ensure that the meteorological data used in an U.S. EPA recommended dispersion model will be processed in a manner consistent with the requirements of the model.

Meteorological data for a subset of NWS stations are available on the World Wide Web at the U.S. EPA SCRAM address, http://www.epa.gov/scram001.

4.8.2 *Treatment of Calms*

Calms are hours when the wind speed is below the starting threshold of the anemometer. Gaussian plume models require a wind speed and direction to estimate plume dispersion in the downwind direction.

U.S. EPA's policy is to disregard calms until such time as an appropriate analytical approach is available. The recommended U.S. EPA models contain a routine that eliminates the effect of the calms by nullifying concentrations during calm hours and recalculating short-term and annual average concentrations. Certain models lacking this built-in feature can have their output processed by U.S. EPA's CALMPRO program (U.S. EPA, 1984a) to achieve the same effect. Because the adjustments to the concentrations for calms are made by either the models or the postprocessor, actual measured on-site wind speeds should always be input to the preprocessor. These actual wind speeds should then be adjusted as appropriate under the current U.S. EPA guidance by the preprocessor.

Following the U.S. EPA methodology, measured on-site wind speeds of less than 1.0 m/s, but above the instrument threshold, should be set equal to 1.0 m/s by the preprocessor when used as input to Gaussian models. Calms are identified in the preprocessed data file by a wind speed of 1.0 m/s and a wind direction equal to the previous hour. For input to AERMOD, no adjustment should be made to the site specific wind data. AERMOD can produce model estimates for conditions when the wind speed may be less than 1 m/s but still greater than the instrument threshold. Some air districts provide pre-processed meteorological data for use in their district that treats calms differently. Local air districts should be consulted for available meteorological data. In addition, to reduce the number of calms and missing winds in the surface data, EPA has developed a pre-processor – AERMINUTE – to process 1-minute ASOS wind data for generating hourly average wind speed and directions for input to AERMET in Stage 2. The details can be found in the EPA's AERMINUTE User's Instructions at:

http://www.epa.gov/ttn/scram/models/aermod/aerminute_userguide_v11059_draft.pdf

If the fraction of calm hours is excessive, then an alternative approach may need to be considered to characterize dispersion. The Calpuff model modeling system can simulate calm winds as well as complex wind flow and therefore is a viable alternative. The local air district should be consulted for alternative approaches.

4.8.3 *Treatment of Missing Data*

Missing data refer to those hours for which no meteorological data are available from the primary on-site source for the variable in question. When missing values arise, they should be handled in one of the following ways listed below, in the following order of preference:

(1) If there are other on-site data, such as measurements at another height, they may be used when the primary data are missing. If the height differences are significant, corrections based on established vertical profiles should be made. Site-specific vertical profiles based on historical on-site data may also be appropriate to use if their determination is approved by the reviewing authority. If there is question as to the representativeness of the other on-site data, they should not be used.

(2) If there are only one or two missing hours, then linear interpolation of missing data may be acceptable, however, caution should be used when the missing hour(s) occur(s) during day/night transition periods.

(3) If representative off-site data exist, they may be used. In many cases this approach may be acceptable for cloud cover, ceiling height, mixing height, and temperature. This approach will rarely be acceptable for wind speed and direction. The representativeness of off-site data should be discussed and agreed upon in advance with the reviewing authority.

(4) An imputation methodology may be acceptable, provided it is well-documented, sufficiently justified, and properly applied.

(5) Failing any of the above, the data field should be coded as missing using missing data codes appropriate to the applicable meteorological pre-processor.

Appropriate model options for treating missing data, if available in the model, should be employed. Substitutions for missing data should only be made in order to complete the data set for modeling applications, and should not be used to attain the “regulatory completeness” requirement of 90%. That is, the meteorological data base must be 90% complete on a monthly basis (before substitution) in order to be acceptable for use in air dispersion modeling. The use of any data substitution technique should be thoroughly documented to provide the District or reviewing authority with all the information necessary to determine its approvability.

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If the recommended methods for addressing missing meteorological data cannot be achieved as described, then alternative approaches should be discussed and developed in conjunction with the District or reviewing authority.

4.8.4 *Representativeness of Meteorological Data*

The atmospheric dispersion characteristics at an emission source need to be evaluated to determine if the collected meteorological data can be used to adequately represent atmospheric dispersion for the project.

Such determinations are required when the available meteorological data are acquired at a location other than that of the proposed source. In some instances, even though meteorological data are acquired at the location of the pollutant source, they still may not correctly characterize the important atmospheric dispersion conditions.

Considerations of representativeness are always made in atmospheric dispersion modeling whether the data base is "on-site" or "off-site." These considerations call for the judgment of a meteorologist or an equivalent professional with expertise in atmospheric dispersion modeling. If in doubt, the District should be consulted.

4.8.4.1 Spatial Dependence

The location where the meteorological data are acquired should be compared to the source location for similarity of terrain features. For example, in complex terrain, the following considerations should be addressed in consultation with the District:

- Aspect ratio of terrain, i.e., ratio of:
  - Height of valley walls to width of valley;
  - Height of ridge to length of ridge; and
  - Height of isolated hill to width of hill at its base
- Slope of terrain
- Ratio of terrain height to stack/plume height
- Distance of source from terrain (i.e., how close to valley wall, ridge, isolated hill)
- Correlation of terrain feature to prevailing meteorological conditions

Likewise, if the source is located on a plateau or plain, the source of meteorological data used should be from a similar plateau or plain.

Judgments of representativeness should be made only when sites are climatologically similar. Sites in nearby, but different air sheds, often exhibit different weather patterns. For instance, meteorological data acquired along a shoreline are not normally representative of inland sites and vice versa.

Meteorological data collected need to be examined to determine if drainage, transition, and synoptic flow patterns are characteristics of the source, especially those critical to the regulatory application. Consideration of orientation, temperature, and ground cover should be included in the review.

An important aspect of space dependence is height above the ground. Where practical, meteorological data should be acquired at the release height, as well as above or below, depending on the buoyancy of the source's emissions. AERMOD at a minimum requires wind observations at a height above ground between seven times the local surface roughness height and 100 meters.

4.8.4.2 Temporal Dependence

To be representative, meteorological data must be of sufficient duration to define the range of sequential atmospheric conditions anticipated at a site. As a minimum, one full year of on-site meteorological data is necessary to prescribe this time series. Multiple years of data are used to describe variations in annual and short-term impacts. Consecutive years from the most recent, readily available 5-year period are preferred to represent these yearly variations.

4.8.4.3 Further Considerations

It may be necessary to recognize the non-homogeneity of meteorological variables in the air mass in which pollutants disperse. This non-homogeneity may be essential in correctly describing the dispersion phenomena. Therefore, measurements of meteorological variables at multiple locations and heights may be required to correctly represent these meteorological fields. Such measurements are generally required in complex terrain or near large land-water body interfaces.

It is important to recognize that, although certain meteorological variables may be considered unrepresentative of another site (for instance, wind direction or wind speed), other variables may be representative (such as temperature, dew point, cloud cover). Exclusion of one variable does not necessarily exclude all. For instance, one can argue that weather observations made at different locations are likely to be similar if the observers at each location are within sight of one another - a stronger argument can be made for some types of observations (e.g., cloud cover) than others. Although by no means a sufficient condition, the fact that two observers can “see” one another supports a conclusion that they would observe similar weather conditions.

Other factors affecting representativeness include change in surface roughness, topography and atmospheric stability. Currently there are no established analytical or statistical techniques to determine representativeness of meteorological data. The establishment and maintenance of an on-site data collection program generally fulfills the requirement for “representative” data. If in doubt, the District should be consulted.

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4.8.5 *Alternative Meteorological Data Sources*

It is necessary, in the consideration of most air pollution problems, to obtain data on site-specific atmospheric dispersion. Frequently, an on-site measurement program must be initiated. As discussed in Section 4.8.3, representative off-site data may be used to substitute for missing periods of on-site data. There are also situations where current or past meteorological records from a National Weather Service station may suffice. These considerations call for the judgment of a meteorologist or an equivalent professional with expertise in atmospheric dispersion modeling. More information on Weather Stations including: National Weather Service (NWS), military observations, supplementary airways reporting stations, upper air and private networks, is provided in “On-Site Meteorological Program Guidance for Regulatory Modeling Applications” (U.S. EPA, 1995e).

4.8.5.1 Recommendations

On-site meteorological data should be processed to provide input data in a format consistent with the particular models being used. The input format for U.S. EPA short-term regulatory models is defined in U.S. EPA’s MPRM. The input format for AERMOD is defined in the AERMET meteorological pre-processor. Processors are available on the SCRAM web site. The actual wind speeds should be coded on the original input data set. Wind speeds less than 1.0 m/s but above the instrument threshold should be set equal to 1.0 m/s by the preprocessor when used as input to Gaussian models. Wind speeds below the instrument threshold of the cup or vane, whichever is greater, should be considered calm, and are identified in the preprocessed data file by a wind speed of 1.0 m/s and a wind direction equal to the previous hour. For input to AERMOD, no adjustment should be made to the site specific wind data. AERMOD can produce model estimates for conditions when the wind speed may be less than 1 m/s but still greater than the instrument threshold.

If data are missing from the primary source, they should be handled as follows, in order of preference: (1) substitution of other representative on-site data; (2) linear interpolation of one or two missing hours; (3) substitution of representative off-site data; (4) use of a well-documented and justified imputation methodology; or (5) coding as a missing data field, according to the discussions in Section 4.8.3. The use of any data substitution technique should be thoroughly documented to provide the District or reviewing authority with all the information necessary to determine its approvability.

If the data processing recommendations in this section cannot be achieved, then alternative approaches should be discussed and developed in conjunction with the District or reviewing authority.

4.8.6 *Quality Assurance and Control*

The purpose of quality assurance and maintenance is the generation of a representative amount (90% of hourly values for a year on a monthly basis) of valid data. For more information on data validation consult reference U.S. EPA (1995e). Maintenance may

be considered the physical activity necessary to keep the measurement system operating as it should. Quality assurance is the management effort to achieve the goal of valid data through plans of action and documentation of compliance with the plans.

Quality assurance (QA) will be most effective when following a QA Plan which has been signed-off by appropriate project or organizational authority. The QA Plan should contain the following information (paraphrased and particularized to meteorology from Lockhart):

1. Project description - how meteorology data are to be used
2. Project organization - how data validity is supported
3. QA objective - how QA will document validity claims
4. Calibration method and frequency - for data
5. Data flow - from samples to archived valid values
6. Validation and reporting methods - for data
7. Audits - performance and system
8. Preventive maintenance
9. Procedures to implement QA objectives - details
10. Management support - corrective action and reports

It is important for the person providing the quality assurance (QA) function to be independent of the organization responsible for the collection of the data and the maintenance of the measurement systems. Ideally, the QA auditor works for a separate company.

4.9 Model Selection

There are several air dispersion models that can be used to estimate pollutant concentrations and new ones are likely to be developed. U.S. EPA added AERMOD, which incorporates the PRIME downwash algorithm, to the list of preferred models in 2005 as a replacement to ISCST3. CalPuff was added in 2003. The latest version of the U.S. EPA recommended models can be found at the SCRAM Bulletin board located at http://www.epa.gov/scram001. However, any model, whether a U.S. EPA guideline model or otherwise, must be approved for use by the local air district. Recommended models and guidelines for using alternative models are presented in this section. All air dispersion models used to estimate pollutant concentrations for risk assessment analyses must be in the public domain. Classification according to terrain, source type and level of analysis is necessary before selecting a model (see Section 4.4). The selection of averaging times in the modeling analysis is based on the health effects of concern. Annual average concentrations are required for an analysis of carcinogenic or other chronic effects. One-hour maximum concentrations are required for analysis of acute effects.

4.9.1 *Recommended Models*

Recommended air dispersion models to estimate concentrations for risk assessment analyses are generally referenced in US EPA's Guideline on Air Quality Models

available at http://www.epa.gov/scram001. Currently AERMOD is recommended for most refined risk assessments in flat or complex terrain and in rural or urban environments[1]. In addition, CalPuff is available where spatial wind fields are highly variable or transport distances are large (e.g., 50 km). AERSCREEN is a screening model based on AERMOD. AERSCREEN can be used when representative meteorological data are unavailable. CTSCREEN is available for screening risk assessments in complex terrain. The most current version of the models should be used for risk assessment analysis. Some facilities may also require models capable of special circumstances such as dispersion near coastal areas. For more information on modeling special cases see Sections 4.12 and 4.13.

Most air dispersion models contain provisions that allow the user to select among alternative algorithms to calculate pollutant concentrations. Only some of these algorithms are approved for regulatory application such as the preparation of health risk assessments. The sections in this guideline that provide a description of each recommended model contain information on the specific switches and/or algorithms that must be selected for regulatory application.

To further facilitate the model selection, the District should be consulted for additional recommendations on the appropriate model(s) or a protocol submitted for District review and approval (see Section 4.14.1).

4.9.2 *Alternative Models*

Alternative models are acceptable if applicability is demonstrated or if they produce results identical or superior to those obtained using one of the preferred models referenced in Section 4.9.1. For more information on the applicability of alternative models refer to the following documents:

- U.S. EPA (2005). "Guideline on Air Quality Models" Section 3.2.2
- U.S. EPA (1992). "Protocol for Determining the Best Performing Model"
- U.S. EPA (1985a). "Interim Procedures for Evaluating Air Quality Models – Experience with Implementation"
- U.S. EPA (1984b). "Interim Procedures for Evaluating Air Quality Models (Revised)"

4.10 Screening Air Dispersion Models

A screening model may be used to provide a maximum concentration that is biased toward overestimation of public exposure. Use of screening models in place of refined modeling procedures is optional unless the District specifically requires the use of a refined model. Screening models are normally used when no representative meteorological data are available and may be used as a preliminary estimate to determine if a more detailed assessment is warranted.

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[1] AERMOD was promulgated by U.S. EPA as a replacement to ISCST3 on November 9, 2006.

Some screening models provide only 1-hour average concentration estimates. Other averaging periods can be estimated based on the maximum 1-hour average concentration in consultation and approval of the responsible air district. Because of variations in local meteorology, the exact factor selected may vary from one district to another. Table 4.2 provides guidance on the range and typical values applied. The conversion factors are designed to bias predicted longer term averaging periods towards overestimation.

Table 4.2 Recommended Factors to Convert Maximum 1-hour Avg. Concentrations to Other Averaging Periods (U.S. EPA, 2011, 1995a; ARB, 1994).

Averaging Time	Range	Typical SCREEN3 Recommended	AERSCREEN Recommended
3 hours	0.8 - 1.0	0.9	1.0
8 hours	0.5 - 0.9	0.7	0.9
24 hours	0.2 - 0.6	0.4	0.6
30 days	0.2 - 0.3	0.3	
Annual	0.06 - 0.1	0.08	0.1

AERSCREEN automatically provides the converted concentration for longer than 1-hour averaging periods. For area sources, the AERSCREEN 3, 8, and 24-hour average concentration are equal to the 1-hour concentration. No annual average concentration is calculated. SCREEN3 values are shown for comparison purposes.

4.10.1 *AERSCREEN*

The AERSCREEN (U.S. EPA, 2011) model is now available and should be used in lieu of SCREEN3 with approval of the local District. AERSCREEN is a screening level air quality model based on AERMOD. AERSCREEN does not require the gathering of hourly meteorological data. Rather, AERSCREEN requires the use of the MAKEMET program which generates a site specific matrix of meteorological conditions for input to the AERMOD model. MAKEMET generates a matrix of meteorological conditions based on local surface characteristics, ambient temperatures, minimum wind speed, and anemometer height.

AERSCREEN is currently limited to modeling a single point, capped stack, horizontal stack, rectangular area, circular area, flare, or volume source. More than one source may be modeled by consolidating the emissions into one emission source.

4.10.2 *Valley Screening*

The Valley model is designed to simulate a specific worst-case condition in complex terrain, namely that of a plume impaction on terrain under stable atmospheric conditions. The algorithms of the VALLEY model are included in other models such as SCREEN3 and their use is recommended in place of the VALLEY model. The usefulness of the VALLEY model and its algorithms is limited to pollutants for which only long-term average concentrations are required. For more information on the Valley model consult the user's guide (Burt, 1977).

4.10.2.1 Regulatory Options

Regulatory application of the Valley model requires the setting of the following values during a model run:

- Class F Stability (rural) and Class E Stability (urban)
- Wind Speed = 2.5 m/s
- 6 hours of occurrence of a single wind direction (not exceeding a 22.5 deg sector)
- 2.6 stable plume rise factor

4.10.3 *CTSCREEN*

The CTSCREEN model (Perry et al., 1990) is the screening mode of the Complex Terrain Dispersion Model (CTDMPLUS). CTSCREEN can be used to model single point sources only. It may be used in a screening mode for multiple sources on a case by case basis in consultation with the District. CTSCREEN is designed to provide conservative, yet theoretically sounder, worst-case 1-hour concentration estimates for receptors located on terrain above stack height. Internally-coded time-scaling factors are applied to obtain other averages (see Table 4.3). These factors were developed by comparing the results of simulations between CTSCREEN and CTDMPLUS for a variety of scenarios and provide conservative estimates (Perry et al., 1990). CTSCREEN produces identical results as CTDMPLUS if the same meteorology is used in both models. CTSCREEN accounts for the three-dimensional nature of the plume and terrain interaction and requires detailed terrain data representative of the modeling domain. A summary of the input parameters required to run CTSCREEN is given in Table 4.4. The input parameters are provided in three separate text files. The terrain topography file (TERRAIN) and the receptor information file (RECEPTOR) may be generated with a preprocessor that is included in the CTSCREEN package. In order to generate the terrain topography file the analyst must have digitized contour information.

Table 4.3 Time-scaling factors internally coded in CTSCREEN

Averaging Period	Scaling Factor
3 hours	0.7
24 hour	0.15
Annual	0.03

Table 4.4 Input Parameters Required to Run CTSCREEN

Parameter	File
Miscellaneous program switches	CTDM.IN
Site Latitude and Longitude (degrees)	CTDM.IN
Site TIME ZONE	CTDM.IN
Meteorology Tower Coordinates (user units)	CTDM.IN
Source Coordinates: x and y (user units)	CTDM.IN
Source Base Elevation (user units)	CTDM.IN
Stack Height (m)	CTDM.IN
Stack Diameter (m)	CTDM.IN
Stack Gas Temperature (K)	CTDM.IN
Stack Gas Exit Velocity (m/s)	CTDM.IN
Emission Rate (g/s)	CTDM.IN
Surface Roughness for each Hill (m)	CTDM.IN
Meteorology: Wind Direction (optional)	CTDM.IN
Terrain Topography	TERRAIN
Receptor Information (coordinates and associated hill number)	RECEPTOR

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4.11 Refined Air Dispersion Models

Refined air dispersion models are designed to provide more representative concentration estimates than screening models. In general, the algorithms of refined models are more robust and have the capability to account for site-specific meteorological conditions. For more information regarding general aspects of model selection see Section 4.9.

4.11.1 *AERMOD*

For a wide variety of applications in all types of terrain, the recommended model is AERMOD. AERMOD is a steady-state plume dispersion model for assessment of pollutant concentrations from a variety of sources. AERMOD simulates transport and dispersion from multiple point, area, or volume sources based on an up-to-date characterization of the atmospheric boundary layer. Sources may be located in rural or urban areas and receptors may be located in simple or complex terrain. AERMOD accounts for building wake effects (i.e., plume downwash) based on the PRIME building downwash algorithms. The model employs hourly sequential preprocessed meteorological data to estimate concentrations for averaging times from one hour to one year (also multiple years). AERMOD is designed to operate in concert with two pre-processor codes: AERMET processes meteorological data for input to AERMOD, and AERMAP processes terrain elevation data and generates receptor information for input to AERMOD. Guidance on input requirements may be found in the AERMOD Users Guide.

4.11.1.1 Regulatory Options

U.S. EPA regulatory application of AERMOD requires the selection of specific switches (i.e., algorithms) during a model run. All the regulatory options can be set by selecting the DFAULT keyword. The U.S. EPA regulatory options, automatically selected when the DFAULT keyword is used, are:

- Stack-tip downwash
- Incorporates the effects of elevated terrain
- Includes calms and missing data processing routines
- Does not allow for exponential decay for applications other than a 4-hour half life for SO_2

Additional information on these options is available in the AERMOD User's Guide.

4.11.1.2 Special Cases

a. Building Downwash:
AERMOD automatically determines if the plume is affected by the wake region of buildings when their dimensions are given. The specification of building dimensions does not necessarily mean that there will be downwash. See

Section 4.13.1 for guidance on how to determine when downwash is likely to occur.

b. Area Sources:
The area source algorithm in AERMOD estimates source emission strength by integrating an area upwind of the receptor location. Receptors may be placed within the area itself, downwind of the area or adjacent to the area. However, since the vertical distribution parameter (σ_z) goes to zero as the downwind distance goes to zero, the plume function solution is infinite for a downwind receptor distance of zero. In order to avoid such singularity in the plume function solution, the AERMOD model arbitrarily sets the plume function to zero when the receptor distance is less than one meter. As a result, the area source algorithm will not provide reliable solutions for receptors located within or adjacent to very small areas, with dimensions on the order of a few meters across. In these cases, the receptor should be placed at least one meter outside of the area.

c. Volume Sources:
The volume source algorithms in AERMOD require an estimate of the initial distribution of the emission source. The initial distribution of emissions for a volume source is in the horizontal and vertical directions. When modeling volume source emissions, one needs to provide initial horizontal (σ_{y0}) and vertical (σ_{z0}) dimensions as accurate as possible so that pollutant buoyancy and dispersion are also calculated accurately. US EPA's AERMOD User Guide provides suggested procedures to estimate these initial dimensions based on source type (Table 3-1) (U.S. EPA, 2004a).

d. Line Sources:
Examples of line sources include conveyor belts or roads. Depending on the source, these can be modeled three ways; as a line source, as a series of volume sources, or as an elongated area source. Where the emission source is neutrally buoyant, such as a conveyor belt, AERMOD can be used according to the user guide. In the event that the line source is a roadway, then additional considerations are required.

At the present time, CALINE (CALINE3, CAL3QHCR, and CALINE4) is the only model dedicated to modeling the enhanced mechanical and thermal turbulence created by motor vehicles traveling on a roadway. Of these, CAL3QHCR is the only model that accepts hourly meteorological data and can estimate annual average concentrations. However, CALINE uses the Pasquill-Gifford stability categories which are used in the ISCST model. AERMOD is now the preferred plume model over ISCST3 with continuous plume dispersion calculations based on observations but AERMOD does not include the enhanced roadway turbulence. Therefore, in the case where roadway emissions dominate the risk assessment, it may be most important to simulate the enhanced thermal and mechanical turbulence from motor vehicles with the CAL3QHCR model.

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In the case where roadway emissions are a subset of all emissions for the risk assessment, including roadway emissions along with facility emissions, it may be best to use AERMOD for all emissions, roadway and facility, in order to maintain continuity with one dispersion model for the risk assessment. If AERMOD is used, it is important to consider that a major freeway may act similar to a large building which can cause some mixing and therefore initial vertical dispersion. This dispersion could be estimated with sensitivity studies based on wind speed, wind angle, roadway orientation, roadway width, and etc. This could be a complex estimation and needs very adept modeling skills. Roadway modeling should be evaluated on a case-by-case basis in consultation with the District or the reviewing authority.

Line sources inputs include a composite fleetwide emission factor, roadway geometry, hourly vehicle activity (i.e., diurnal vehicle per hour pattern), hourly meteorological data, and receptor placement. For practical information on how to simulate roadway emissions using these models, see CAPCOA's website at http://www.capcoa.org or the Sacramento Metropolitan AQMD (SMAQMD) website at http://www.airquality.org/ceqa/RoadwayProtocol.shtml. The SMAQMD has a document titled, "Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways"(January, 2010).

e. Complex Terrain:
AERMOD uses the Dividing Streamline (Hc) concept for complex terrain. Above Hc, the plume is assumed to be "terrain following" in the convective boundary layer. Below Hc, the plume is assumed to be "terrain impacting" in the stable boundary layer. AERMOD computes the concentration at any receptor as a weighted function between the two plume states (U.S. EPA, 2004b).

f. Deposition:
AERMOD contains algorithms to model settling and deposition and requires additional information to do so including particle size distribution. For more information consult the AERMOD User's Guide (U.S. EPA, 2004a).

g. Diurnal Considerations:
Systematic diurnal changes in atmospheric conditions are expected along the coast (or any large body of water) or in substantially hilly terrain. The wind speed and direction are highly dependent on time of day as the sun rises and begins to heat the Earth. The sun heats the surface of the land faster than the water surface. Therefore the air above the land warms up sooner than over water. This creates a buoyant effect of warm air rising over land and the cool air from over water moves in to fill the void. Near large bodies of water (e.g., the ocean) this is known as a sea breeze. In complex terrain this is known as upslope flow as the hot air follows the terrain upwards. When the sun sets and the surface of the land begins to cool, the air above also cools and creates a draining effect. Near the water this is the land breeze; in complex terrain this is known as downslope or drainage flow. In addition, for the sea breeze, the atmospheric

conditions change rapidly from neutral or stable conditions over water to unstable conditions over land.

Near the large bodies of water the sea breeze is typical in the afternoon and the land breeze is typical for the early morning before sunrise. In complex terrain upslope flow is typical in the afternoon, while drainage flow is typical at night. Diurnal profiles need to be evaluated in conjunction with the facility emissions since sources can have varied emission profiles (e.g., some sources are continuously emitting while others are intermittent). These intermittent emission profiles may be influenced by diurnal patterns; therefore, they need to be evaluated to properly estimate potential exposures. For these reasons, it is especially important to simulate facility emissions with a hourly diurnal pattern reflective of source activity so that the risk assessment is representative of daily conditions.

h. 8-hour Modeling for the Offsite Worker's Exposure and Residential Exposure: If the ground level air concentrations from a facility operating 5 days a week, 8 hours per day have been estimated by a 24 hour per day annual average, an adjustment factor can be applied to estimate the air concentration that an offsite worker with the same schedule would be exposed to. The 24-hour annual average concentration is multiplied times 4.2.

If the meteorology during the time that the facility is emitting is used, hourly model simulations need to be post-processed to cull out the data needed for the offsite worker exposure. See Appendix M for information on how to calculate the refined offsite worker concentrations using the hourly raw results from the AERMOD air dispersion model. For more discussion on worker exposure, see Section 4.8.1.

Eight-hour exposure modeling can be used to evaluate the potential for health impacts (including effects of repeated exposures) in children and teachers exposed during school hours. Although not required in the HRA, 8-hour exposure modeling could also be performed at the discretion of the District to a residential scenario (i.e., the MEIR) where a facility operates only a portion of the day and exposure to residences are not adequately reflected by averaging concentrations over a 24 hour day.

4.11.1.3 HARP Dispersion Analysis

It is highly recommended that air dispersion analysis be performed using the HARP software. HARP can perform refined dispersion analysis by utilizing the U.S. EPA standard program AERMOD. In the future, the updated version of HARP will link the AERMOD outputs with risk assessment modules.

4.11.2 *CTDMPLUS*

CTDMPLUS is a Gaussian air quality model for use in all stability conditions in complex terrain. In comparison with other models, CTDMPLUS requires considerably more

detailed meteorological data and terrain information that must be supplied using specifically designed preprocessors. CTDMPLUS was designed to handle up to 40 point sources.

4.12 Modeling to Obtain Concentrations used for Various Health Impacts

The following section outlines how emissions and air dispersion modeling results are used or adjusted for a receptor that is exposed to either a non-continuous or continuously emitting source.

4.12.1 *Emission Rates for Cancer, Chronic, and Acute Health Impacts*

As discussed in Section 4.2.1.1, the HRA should include both annual average emissions and maximum 1-hour emissions for each pollutant emitted by the facility. Maximum 1-hour emissions are used for acute noncancer health impacts while annual emissions are used for chronic exposures (i.e., chronic and 8-hour noncancer health impacts or cancer risk assessment). When applying the emission rates in the air dispersion analysis, it is important not to artificially inflate or deplete the reported emission inventory.

For annual average emissions, the emissions are spread evenly over the entire year for continuous emitting sources. However, for sources where the emission patterns vary (i.e., non-continuous emitting sources), the emission rate should also account for the facility's emission schedule. If appropriate, the variable emissions rate option (e.g., hour-of-day) should be used in the air dispersion analysis. For more information consult the AERMOD User's Guide (U.S. EPA, 2004a). Also, when calculating emission rates for acute health impacts, it is important the emission rates never exceed the reported maximum 1-hour emissions.

4.12.2 *Modeling and Adjustments for Inhalation Cancer Risk at a Worksite*

Modeled long-term averages are typically used for cancer risk assessments for residents and workers. In an inhalation cancer risk assessment for an offsite worker, the long-term average should represent what the worker breathes during their work shift. However, the long-term averages calculated from AERMOD typically represent exposures for receptors that were present 24 hours a day and seven days per week (i.e., the schedule of a residential receptor). To estimate the offsite worker's concentration, there are two approaches. The more refined, complex, and time consuming approach is to post-process the hourly raw dispersion model output and examine the hourly concentrations that fall within the offsite worker's shift. See Appendix M for information on how to simulate the long-term concentration for the offsite worker that can be used to estimate inhalation cancer risk.

In lieu of post-processing the hourly dispersion model output, the more typical approach is to obtain the long-term average concentration as you would for modeling a residential receptor and approximate the worker's inhalation exposure using an adjustment factor. The actual adjustment factor that is used to adjust the concentration may differ from the example below based on the specifics of the source and worker receptor

(e.g., work-shift overlap). Once the worker's inhalation concentration is determined, the inhalation dose is calculated using additional exposure frequency and duration adjustments. See Chapter 5 for more information on the inhalation dose equation.

4.12.2.1 Non-Continuous Sources

When modeling a non-continuously emitting source (e.g., operating for eight hours per day and five days per week), the modeled long-term average concentrations are based on 24 hours a day and seven days per week for the period of the meteorological data set. Even though the emitting source is modeled using a non-continuous emissions schedule, the long-term concentration is still based on 24 hours a day and seven days per week. Thus, this concentration includes the zero hours when the source was not operating. For the offsite worker inhalation risk, we want to determine the long-term concentration the worker is breathing during their work shift. Therefore, the long-term concentration needs to be adjusted so it is based only on the hours when the worker is present. For example, assuming the emitting source and worker's schedules are the same, the adjustment factor is 4.2 = (24 hours per day/8 hours per shift)x(7 days in a week/5 days in a work week). In this example, the long term residential exposure is adjusted upward to represent the exposure to a worker. Additional concentration adjustments may be appropriate depending on the work shift overlap. These adjustments are discussed below.

The calculation of the adjustment factor from a non-continuous emitting source is summarized in the following steps.

a. Obtain the long-term concentrations from air dispersion modeling as is typical for residential receptors (all hours of a year for the entire period of the meteorological data set).

b. Determine the coincident hours per day and days per week between the source's emission schedule and the offsite worker's schedule.

c. Calculate the worker adjustment factor (WAF) using Equation 4.1. When assessing inhalation cancer health impacts, a discount factor (*DF*) may also be applied if the offsite worker's schedule partially overlaps with the source's emission schedule. The discount factor is based on the number of coincident hours per day and days per week between the source's emission schedule and the offsite worker's schedule (see Equation 4.2). The DF is always less than or equal to one.

Please note that worker adjustment factor does not apply if the source's emission schedule and the offsite worker's schedule do not overlap. Since the worker is not present during the time that the source is emitting, the worker is not exposed to the source's emission (i.e., the DF in Equation 4.2 becomes 0).

$$WAF = \frac{H_{residentid}}{H_{source}} \times \frac{D_{residentid}}{D_{source}} \times DF \qquad \text{Eq. 4.1}$$

Where:
WAF = the worker adjustment factor
$H_{residential}$ = the number of hours per day the long-term residential concentration is based on (always 24 hours)
H_{source} = the number of hours the source operates per day
$D_{residential}$ = the number of days per week the long-term residential concentration is based on (always 7 days)
D_{source} = the number of days the source operates per week
DF = a discount factor for when the offsite worker's schedule partially overlaps the source's emission schedule. Use 1 if the offsite worker's schedule occurs within the source's emission schedule. If the offsite worker's schedule partially overlaps with the source's emission schedule, then calculate the discount factor using Equation 4.2 below.

$$DF = \frac{H_{coincident}}{H_{worker}} \times \frac{D_{coincident}}{D_{worker}} \qquad \text{Eq. 4.2}$$

Where:
DF = the discount factor for assessing cancer impacts
$H_{coincident}$ = the number of hours per day the offsite worker's schedule and the source's emission schedule overlap
$D_{coincident}$ = the number of days per week the offsite worker's schedule and the source's emission schedule overlap
H_{worker} = the number of hours the offsite worker works per day
D_{worker} = the number of days the offsite worker works per week

d. The final step is to estimate the offsite worker's inhalation concentration by multiplying the worker adjustment factor with the long-term residential concentration. The worker's concentration is then plugged into the dose equation and risk calculation.

The HARP software has the ability to calculate worker impacts using an approximation factor and, in the future, it will have the ability to post-process refined worker concentrations using the hourly raw results from an air dispersion analysis.

4.12.2.2 Continuous Sources

If the source is continuously emitting, then the worker is assumed to breathe the long-term annual average concentration during their work shift. Equation 4.1 becomes one and no concentration adjustments are necessary in this situation when estimating the inhalation cancer risk. Note however, if an assessor does not wish to apply the assumption the worker breathes the long-term annual average concentration during the work shift, then a refined concentration can be post-processed as described in Appendix M. All alternative assumptions should be approved by the reviewing authority and supported in the presentation of results.

4.12.3 *Modeling and Adjustments for Noncancer 8-Hour RELs*

For 8-hour noncancer health impacts, we evaluate if the receptor (e.g., worker or resident) is exposed to an 8 hour average concentration, occurring daily, that exceeds the 8-hour REL. The 8 hour RELs were derived primarily for the offsite worker scenario. Although not required in an HRA, residential receptors can be evaluated with an 8-hour

REL at the discretion of the District or Reviewing authority. For ease, we use a worker receptor in this discussion and in the discussion below for a non-continuously emitting source. The daily average concentration is intended to represent the long-term average concentration the worker is breathing during the work shift. In general, there are two approaches for estimating the concentration used for the 8-hour hazard index. The more refined, complex, and time consuming approach is to post-process the hourly dispersion model output and use only the hourly concentrations that are coincident with the offsite worker hours to obtain the long-term concentration. See Appendix M for information on how to simulate the daily average concentration through air dispersion modeling.

Before proceeding through a refined analysis described in Appendix M, the assessor may wish to approximate the long-term concentration, as described below, and calculate the 8-hour hazard index. In lieu of post-processing the hourly dispersion model output described in Appendix M, the more typical approach is to obtain the long-term average concentration as you would for modeling a residential receptor and approximate the worker's inhalation concentration using an adjustment factor. The method for applying the adjustment factor is described in the section below.

The results from the 8-hour hazard index calculations should not be combined with the chronic or acute hazard indices. Each of the potential noncancer health impacts should be reported independently. See Chapter 8 for more discussion on calculating health impacts.

4.12.3.1 Non-Continuous Sources

When modeling a non-continuously emitting source (e.g., operating for eight hours per day and five days per week), the modeled long-term average concentrations are based on 24 hours a day and seven days per week for the period of the meteorological data set. Even though the emitting source is modeled using a non-continuous emissions schedule, the long-term concentration is still based on 24 hours a day and seven days per week. Thus, this concentration includes the zero hours when the source was not operating. For the offsite worker 8-hour hazard index, we want to determine the long-term average daily concentration the worker may be breathing during their work shift. This is similar to the cancer approximation adjustment method with one difference; there is no adjustment for partial overlap between the worker's schedule and the source's emission schedule. The reason for this difference in methodology is because the 8-hour REL health factors are designed for repeated 8-hour exposures and cannot readily be adjusted to other durations of exposure. The 8-hour RELs should be used for typical daily work shifts of 8-9 hours. For further questions, assessors should contact OEHHA, the District, or reviewing authority to determine if the 8-hour RELs should be used in your HRA. Any discussions or directions to exclude the 8-hour REL evaluation should be documented in the HRA.

When calculating the long-term average daily concentration for the 8-hour REL comparison, the long-term residential concentration needs to be adjusted so it is based only on the operating hours of the emitting source with the assumption the offsite

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worker's shift falls within the emitting source's schedule. For example, assuming the emitting source operates 8 hours per day, 5 days per week and the offsite worker's schedules falls anywhere within this period of emissions, then the adjustment factor is 4.2 = (24 hours per day/8 hours of emissions per day)x(7 days in a week/5 days of emissions per week). In this example, the long term residential exposure is adjusted upward to represent the 8-hour exposure to a worker. No adjustments are applied for partial work shift overlap with the emitting source. If the source emits at night, then see Appendix N for additional recommendations.

Using the approximation factor is a screening method. If the 8-hour hazard index is above a threshold of concern with this method, the district or assessor should contact OEHHA for further guidance regarding the substance of concern. If necessary, further evaluation can be performed using the refined daily average modeling methodology discussed in Appendix M.

The calculation of the adjustment factor from a non-continuous emitting source is summarized in the following steps.

b. Obtain the long-term concentrations from air dispersion modeling as is typical for residential receptors (all hours of a year for the entire period of the meteorological data set).

c. Calculate the worker adjustment factor (WAF) using Equation 4.3. The source's emission schedule is assumed to overlap offsite worker's schedule. Note that the worker adjustment factor and the 8-hour inhalation REL do not apply if the source's emission schedule and the offsite worker's schedule do not overlap at some point.

$$WAF = \frac{H_{residentid}}{H_{source}} \times \frac{D_{residentid}}{D_{source}} \qquad \text{Eq. 4.3}$$

Where:

WAF = the worker adjustment factor
$H_{residential}$ = the number of hours per day the long-term residential concentration is based on (always 24 hours)
H_{source} = the number of hours the source operates per day
$D_{residential}$ = the number of days per week the long-term residential concentration is based on (always 7 days).
D_{source} = the number of days the source operates per week.

d. The final step is to estimate the offsite worker's daily average inhalation concentration by multiplying the WAF with the long-term residential concentration. The worker's concentration is then used to calculate the 8-hour hazard index. This method using the approximation factor is a screening method. If the 8-hour hazard index is above a threshold of concern, the district or assessor should contact OEHHA for further guidance regarding the substance of concern.

In the future, the HARP software will have the ability to use 8-hour RELs, calculate worker impacts using an approximation factor, and to post-process worker concentrations using the hourly raw results from an air dispersion analysis.

4.12.3.2 Continuous Sources

If the source is continuously emitting, then the worker is assumed to breathe the long-term annual average concentration during their work shift and no concentration adjustments are made when estimating 8-hour health impacts. Note however, if an assessor does not wish to assume the worker breathes the long-term annual average concentration during the work shift, then a refined concentration can be post-processed as described in Appendix M. All alternative assumptions should be approved by the reviewing authority and supported in the presentation of results.

Note that 8-hour RELs are not typically used for continuously emitting sources for residential receptors. In this situation it is only necessary to estimate a chronic Hazard Index using the annual average concentrations and chronic RELs. However, there may be situations where the District may wish to assess an 8-hour Hazard Index, for example, where there are significant differences in modeled concentration of emissions during the day due to diurnal wind patterns.

4.12.4 *Modeling and Adjustment Factors for Noncancer Chronic RELs*

Potential chronic noncancer health impacts use the long-term annual average concentration regardless of the emitting facility's schedule. No adjustment factors should be used to adjust this concentration. Chronic RELs are used to assess not only residential health impacts, but in many cases worker health impacts as well. There are currently only a limited number of substances with an 8-hour inhalation REL, and a facility may emit only, or mostly, substances that currently have just a chronic REL. Until there are 8-hour RELs for all the Hot Spots substances emitted from a specified facility, we recommend determining the chronic HI for the MEIW to adequately protect the offsite worker.

The results from the chronic hazard index calculations are not combined with the 8-hour or acute hazard indices. All potential noncancer results should be reported independently. See Chapter 8 for more discussion on calculating health impacts.

4.12.5 *Modeling and Adjustments for Oral Cancer Potencies and Oral RELs*

When estimating the cancer risk or noncancer health impacts from noninhalation pathways, no adjustment is made to the long-term annual average concentration regardless of the emitting facility's schedule. Since the media (e.g., soil) at the receptor location where deposition takes place for noninhalation pathways is continuously present, the concentrations used for all noninhalation pathways are not adjusted (up or down) by an adjustment factor. However, some adjustments are made to the concentration once the pollutants reach the media, for example, pollutants undergo decay in soils. In addition, when the dose for each pathway is calculated, exposure adjustments may also be made. See Chapter 5 of this document and the Technical

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Support Document for Exposure Assessment and Stochastic Analysis (OEHHA, 2012) to get more information on these types of adjustments. Oral cancer potencies and oral RELs are used to assess both residential or worker health impacts.

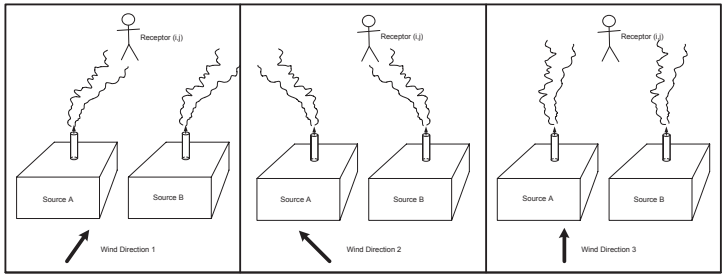
4.12.6 *Modeling One-Hour Concentrations using Simple and Refined Acute Calculations*

Modeled one-hour concentrations are needed for the acute health hazard index calculations. HARP has two methods to calculate this concentration: Simple and Refined. As an aid to understanding the differences between Simple and Refined, Figure 2 shows three possible conditions showing how wind direction may vary and impact a downwind receptor (i,j) differently from just two sources (A and B).

For the Simple calculation, HARP stores only the maximum one-hour concentration at each receptor (i,j) from each source (A and B) as the dispersion model marches down each hour of the simulation (e.g., one to five years of hourly data). At the end of the simulation period, HARP reports back only the maximum impacts at each receptor from each source regardless of which hour of the simulation period this occurred. For example, the Simple Maximum Acute Impacts would be the summation of Source A impacts from Wind Direction 1 and Source B impacts from Wind Direction 2 as shown in Figure 2.

For the Refined simulation, HARP stores each hourly concentration at each receptor (i,j) from each source. At the end of the simulation period, HARP evaluates the coincident impact at each receptor from all sources for each hour of the simulation period. In this case the maximum impacts will be identified by a particular hour of the period with associated wind speed, direction, and atmospheric conditions. For example, the Refined Maximum Acute impact from Sources A and B on receptor (i,j) could be from any wind direction (1,2, or 3) as shown in Figure 2. Since HARP stores all simulations for all sources – at all receptors – for all hours to calculate the refined impacts, there is great potential to fill large amounts of disk storage space. The Refined simulation provides a more representative picture of the maximum acute hazard index from a facility. The Simple calculation will provide an upper bound to the acute hazard index.

Figure 2 Acute Scenarios



4.13 Modeling Special Cases; Specialized Models

Special situations arise in modeling some sources that require considerable professional judgment; a few are outlined below. It is recommended that the reader consider retaining professional consultation services if the procedures are unfamiliar. The following sections, taken mostly from the document "On-Site Meteorological Program Guidance for Regulatory Modeling Applications" (U.S. EPA, 1995e), provide general information on data formats and representativeness. Some Districts may have slightly different recommendations from those given here.

4.13.1 *Building Downwash*

The entrainment of a plume in the wake of a building can result in the "downwash" of the plume to the ground. This effect can increase the maximum ground-level concentration downwind of the source. Therefore, stack sources must be evaluated to determine whether building downwash is a factor in the calculation of maximum ground-level concentrations.

The PRIME algorithm, included with AERMOD, has several advances in modeling building downwash effects including enhanced dispersion in the wake, reduced plume rise due to streamline deflection and increased turbulence, and continuous treatment of the near and far wakes (Schulman, 2000).

Complicated situations involving more than one building may necessitate the use of the Building Profile Input Program (BPIP) which can be used to generate the building dimension section of the input file of the ISC models (U.S. EPA, 1993). The BPIP program calculates each building's direction-specific projected width. The Building Profile Input Program for PRIME (BPIPPRM) is the same as BPIP but includes an algorithm for calculating downwash values for input into the PRIME algorithm which is contained in such models as AERMOD. The input structure of BPIPPRM is the same as that of BPIP.

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4.13.2 *Deposition*

There are two types of deposition: wet deposition and dry deposition. Wet deposition is the incorporation of gases and particles into rain-, fog- or cloud water followed by a precipitation event and also rain scavenging of particles during a precipitation event. Wet deposition of gases is therefore more important for water soluble chemicals; particles (and hence particle-phase chemicals) are efficiently removed by precipitation events (Bidleman, 1988). Dry deposition refers to the removal of gases and particles from the atmosphere.

In the Air Toxics "Hot Spots" program, deposition is quantified for particle-bound pollutants and not gases. Wet deposition of water-soluble gas phase chemicals is thus not considered. When calculating pollutant mass deposited to surfaces without including depletion of pollutant mass from the plume, airborne concentrations remaining in the plume and deposition to surfaces can be overestimated, thereby resulting in overestimates of both the inhalation and multi-pathway risk estimates. However, neglecting deposition in the air dispersion model, while accounting for it in the multipathway health risk assessment, is a conservative, health protective approach (CAPCOA, 1987; Croes, 1988). Misapplication of plume depletion can also lead to possible underestimates of multi-pathway risk and for that reason no depletion is the default assumption. If plume depletion is incorporated, then some consideration for possible resuspension is warranted. An alternative modeling methodology accounting for plume depletion can be discussed with the Air District and used in an approved modeling protocol.

Although not generally used, several air dispersion models can provide downwind concentration estimates that take into account the upwind deposition of pollutants to surfaces and the consequential reduction of mass remaining in the plume. Air dispersion models having deposition and plume depletion algorithms require particle distribution data that are not always readily available. These variables include particle size, mass fraction, and density for input to AERMOD. In addition, the meteorological fields need to include additional parameters including relative humidity, precipitation, cloud cover, and surface pressure. Consequently, depletion of pollutant mass from the plume often is not taken into account.

In conclusion, multipathway risk assessment analyses normally incorporate deposition to surfaces in a screening mode, specifically by assigning a default deposition velocity of 2 cm/s for controlled sources and 5 cm/s for uncontrolled sources in lieu of actual measured size distributions (ARB, 1989). For particles (and particle-phase chemicals), the deposition velocity depends on particle size and is minimal for particles of diameter approximately 0.1-1 micrometer; smaller and larger particles are removed more rapidly.

4.13.3 *Short Duration Emissions*

Short-duration emissions (i.e., much less than an hour) require special consideration. In general, "puff models" provide a better characterization of the dispersion of pollutants having short-duration emissions. Continuous Gaussian plume models have traditionally

been used for averaging periods as short as about 10 minutes and are not recommended for modeling sources having shorter continuous emission duration.

4.13.4 ***Fumigation***

Fumigation occurs when a plume that was originally emitted into a stable layer in the atmosphere is mixed rapidly to ground-level when unstable air below the plume reaches plume level. Fumigation can cause very high ground-level concentrations. Typical situations in which fumigation occurs are:

- Breaking up of a nocturnal radiation inversion by solar warming of the ground surface (rising warm unstable air); note that the break-up of a nocturnal radiation inversion is a short-lived event and should be modeled accordingly.
- Shoreline fumigation caused by advection of pollutants from a stable marine environment to an unstable inland environment
- Advection of pollutants from a stable rural environment to a turbulent urban environment

SCREEN3 incorporates concentrations due to inversion break-up and shoreline fumigation and is limited to maximum hourly evaluations. The Offshore and Coastal Dispersion Model incorporates overwater plume transport and dispersion as well as changes that occur as the plume crosses the shoreline – hourly meteorological data are needed from both offshore and onshore locations.

4.13.5 ***Raincap on Stack***

The presence of a raincap or any obstacle at the top of the stack hinders the momentum of the exiting gas. The extent of the effect is a function of the distance from the stack exit to the obstruction and of the dimensions and shape of the obstruction.

On the conservative side, the stack could be modeled as having a non-zero, but negligible exiting velocity, effectively eliminating any momentum rise. Such an approach would result in final plume heights closer to the ground and therefore higher concentrations nearby. There are situations where such a procedure might lower the actual population-dose and a comparison with and without reduced exit velocity should be examined.

Plume buoyancy is not strongly reduced by the occurrence of a raincap. Therefore, if the plume rise is dominated by buoyancy, it is not necessary to adjust the stack conditions. (The air dispersion models determine plume rise by either buoyancy or momentum, whichever is greater.)

The stack conditions should be modified when the plume rise is dominated by momentum and in the presence of a raincap or a horizontal stack. Sensitivity studies with the SCREEN3 model, on a case-by-case basis, can be used to determine whether

plume rise is dominated by buoyancy or momentum. The District should be consulted before applying these procedures.

- Set exit velocity to 0.001 m/sec
- Turn stack tip downwash off
- Reduce stack height by 3 times the stack diameter

Stack tip downwash is a function of stack diameter, exit velocity, and wind speed. The maximum stack tip downwash is limited to three times the stack diameter in the AERMOD air dispersion model. In the event of a horizontal stack, stack tip downwash should be turned off and no stack height adjustments should be made. Note: This approach may not be valid for large (several meter) diameter stacks.

An alternative, more refined, approach could be considered for stack gas temperatures which are slightly above ambient (e.g., ten to twenty degrees Fahrenheit above ambient). In this approach, the buoyancy and the volume of the plume remain constant and the momentum is minimized.

- Turn stack tip downwash off
- Reduce stack height by 3 times the stack diameter ($3D_o$)
- Set the stack diameter (D_b) to a large value (e.g., 10 meters)
- Set the stack velocity to $V_b = V_o (D_o/D_b)^2$

Where V_o and D_o are the original stack velocity and diameter and V_b and D_b are the alternative stack velocity and diameter for constant buoyancy. This approach is advantageous when $D_b >> D_o$ and $V_b << V_o$ and should only be used with District approval.

In the presence of building downwash and in the event that PRIME downwash is being utilized in AERMOD, an alternative approach is recommended. PRIME algorithms use the stack diameter to define initial plume radius and to solve conservation laws. The user should input the actual stack diameter and exit temperature but set the exit velocity to a nominally low value (e.g., 0.001 m/s). Also since PRIME does not explicitly consider stack-tip downwash, no adjustments to stack height should be made.

Currently U.S. EPA is BETA testing options for capped and horizontal releases in AERMOD. It is expected that these options will replace the above guidance when BETA testing is complete.

4.13.6 ***Landfill Sites***

Landfills should be modeled as area sources. The possibility of non-uniform emission rates throughout the landfill area should be investigated. A potential cause of non-uniform emission rates would be the existence of cracks or fissures in the landfill cap (where emissions may be much larger). If non-uniform emissions exist, the landfill should be modeled with several smaller areas assigning an appropriate emission factor to each one of them, especially if there are nearby receptors (distances on the same order as the dimensions of the landfill).

4.14 Specialized Models

Some models have been developed for application to very specific conditions. Examples include models capable of simulating sources where both land and water surfaces affect the dispersion of pollutants and models designed to simulate emissions from specific industries.

4.14.1 *Buoyant Line and Point Source Dispersion Model (BLP)*

BLP is a Gaussian plume dispersion model designed for the unique modeling problems associated with aluminum reduction plants, and other industrial sources where plume rise and downwash effects from stationary line sources are important.

4.14.1.1 Regulatory Application

Regulatory application of BLP model requires the selection of the following options:

- rural (IRU=I) mixing height option;
- default (no selection) for all of the following: plume rise wind shear (LSHEAR), transitional point source plume rise (LTRANS), vertical potential temperature gradient (DTHTA), vertical wind speed power law profile exponents (PEXP), maximum variation in number of stability classes per hour (IDELS), pollutant decay (DECFAC), the constant in Briggs' stable plume rise equation (CONST2), constant in Briggs' neutral plume rise equation (CONST3), convergence criterion for the line source calculations (CRIT), and maximum iterations allowed for line source calculations (MAXIT); and
- terrain option (TERAN) set equal to 0.0, 0.0, 0.0, 0.0, 0.0, 0.0.

For more information on the BLP model consult the user's guide (Schulman and Scire, 1980).

4.14.2 *Offshore and Coastal Dispersion Model (OCD)*

OCD (DiCristofaro and Hanna, 1989) is a straight-line Gaussian model developed to determine the impact of offshore emissions from point, area or line sources on the air quality of coastal regions. OCD incorporates "over-water" plume transport and dispersion as well as changes that occur as the plume crosses the shoreline. Hourly meteorological data are needed from both offshore and onshore locations. Additional data needed for OCD are water surface temperature, over-water air temperature, mixing height, and relative humidity.

Some of the key features include platform building downwash, partial plume penetration into elevated inversions, direct use of turbulence intensities for plume dispersion, interaction with the overland internal boundary layer, and continuous shoreline fumigation.

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4.14.2.1 Regulatory Application

OCD has been recommended for use by the Minerals Management Service for emissions located on the Outer Continental Shelf (50 FR 12248; 28 March 1985). OCD is applicable for over-water sources where onshore receptors are below the lowest source height. Where onshore receptors are above the lowest source height, offshore plume transport and dispersion may be modeled on a case-by-case basis in consultation with the District.

4.14.3 *Shoreline Dispersion Model (SDM)*

SDM (PEI, 1988) is a hybrid multipoint Gaussian dispersion model that calculates source impact for those hours during the year when fumigation events are expected using a special fumigation algorithm and the MPTER regulatory model for the remaining hours.

SDM may be used on a case-by-case basis for the following applications:

- tall stationary point sources located at a shoreline of any large body of water;
- rural or urban areas;
- flat terrain;
- transport distances less than 50 km;
- 1-hour to 1-year averaging times.

4.15 Interaction with the District

The risk assessor must contact the District to determine if there are any specific requirements. Examples of such requirements may include, but are not limited to: specific receptor location guidance, specific usage of meteorological data, and specific report format (input and output). See Chapter 9 for more information on the format and content of modeling protocols and HRAs.

4.15.1 *Submittal of Modeling Protocol*

It is strongly recommended that a modeling protocol be submitted to the District for review and approval prior to extensive analysis with an air dispersion model. The modeling protocol is a plan of the steps to be taken during the air dispersion modeling process. Following is an example of the format that may be followed in the preparation of the modeling protocol. **Consult with the District to confirm format and content requirements or to determine the availability of District modeling guidelines before submitting the protocol.**

Outline for a Modeling Protocol

I. Introduction

Include the facility name, address, and a brief overview describing the facility's operations.

- Provide a description of the terrain and topography surrounding the facility and potential receptors.
- Indicate the format in which data will be provided. Ideally, the report and summary of data will be on paper and all data and model input and output files will be provided electronically (e.g., compact disk or CD).
- Identify the guidelines used to prepare the protocol (e.g., District Guidelines).

II. Emissions

For each pollutant and process whose emissions are required to be quantified in the HRA, list the annual average emissions (pounds/year and grams/second) and the maximum one-hour emissions (pounds/hour and grams/second)[2]. Maximum 1-hour emissions are used for acute noncancer health impacts while annual emissions are used for chronic exposures (i.e., chronic and 8-hour noncancer health impacts or cancer risk assessment).

- Identify the reference and method(s) used to determine emissions (e.g., source tests, emission factors, etc.). Clearly indicate any emission data that are not reflected in the previously submitted emission inventory report. In this event, a revised emission inventory report will need to be submitted to the District.
- Identify if this will be a multipathway assessment based on emitted substances.

III. Models / Modeling Assumptions

Specify the model and modeling assumptions

- Identify the model(s) to be used, including the version number.
- Identify the model options that will be used in the analysis.

[2] Except radionuclides, for which annual and hourly emissions are reported in Curies/year and millicuries/hour, respectively.

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- Identify the modeling domain(s) and the spacing of receptor grid(s). Grid spacing should be sufficient in number and detail to capture the concentration at all of the receptors of interest.
- Indicate complex terrain options that may be used, if applicable.
- Identify the source type(s) that will be used to represent the facility's operations (e.g., point, area, or volume sources, flare options or other).
- Indicate the preliminary source characteristics (e.g., stack height, gas temperature, exit velocity, dimensions of volume source, etc.).
- Identify and support the use of urban or rural dispersion coefficients for those models that require dispersion coefficients. For other models, identify and support the parameters required to characterize the atmospheric dispersion due to land characteristics (e.g., surface roughness, Monin-Obukhov length).

IV. Meteorological Data

Specify the type, source, and year(s) of hourly meteorological data (e.g., hourly surface data, upper air mixing height information).

- State how the data are representative for the facility site.
- Describe QA/QC procedures.
- Identify any gaps in the data; if gaps exist, describe how the data gaps are filled.

V. Deposition

- Specify the method to calculate deposition (if applicable).

VI. Receptors

Specify the type and location of receptors. Include all relevant information describing how the individual and population-related receptors will be evaluated.

- Identify and describe the location(s) of known or anticipated potential sensitive receptors, the point of maximum impact (PMI), and the maximum exposed individual residential (MEIR) and worker (MEIW) receptors. Identify any special considerations or grids that will be used to model these receptors. This information should correspond with information provided in Section III (e.g., fine receptor spacing of 20 meters at the fence line and centered on the maximum impacts; coarse receptor spacing of 100 meters out to 2,000 meters; extra coarse spacing of 1,000 meters out to 20,000 meters).

- Identify if spatial averaging will be used. Include necessary background information on each receptor including how the domain and spacing will be determined for each receptor or exposure pathway.
- Describe how the cancer burden or population impact estimates are calculated. Clarify the same information for the presentation of noncancer population impacts (e.g., centroids of the census tracts in the area within the zone of impact).
- Specify that actual UTM coordinates and the block/street locations (i.e., north side of 3,000 block of Smith Street), where possible, will be provided for specified receptor locations.
- Identify and support the use of any exposure adjustments (e.g., time a location, diurnal).
- Include the list of anticipated exposure pathways that will be included and indicate which substance will be evaluated in the multipathway assessment. Identify if sensitive receptors are present and which receptors will be evaluated in the HRA.

VII. Maps

Identify how the information will be graphically presented.

- Indicate which cancer risk isopleths will be plotted for the cancer zone of impact (e.g., 10^{-7}, 10^{-6} see Section 4.6.1).
- Indicate the hazard quotients or hazard indices to be plotted for the noncancer acute, 8 hour, and chronic zones of impact (e.g., 0.5, 1.0, etc.).

4.16 Health Risk Assessment Report

This section describes the information related to the air dispersion modeling process that needs to be reported in the risk assessment. This section is also presented in Chapter 9, Summary of the Requirements for a Modeling Protocol and a Health Risk Assessment Report, in Section 9.2. The District may have specific requirements regarding format and content (see Section 4.15). Sample calculations should be provided at each step to indicate how reported emissions data were used. Reviewing agencies must receive input, output, and supporting files of various model analyses on computer-readable media (e.g., CD).

4.16.1 *Information on the Facility and its Surroundings*

Report the following information regarding the facility and its surroundings:

- Facility Name

- Location (UTM coordinates and street address)
- Land use type (see Section 2.4)
- Local topography
- Facility plot plan identifying:
  - source locations
  - property line
  - horizontal scale
  - building heights
  - emission sources

4.16.2 *Source and Emission Inventory Information*[3]

4.16.2.1 Release Parameters

Report the following information for each release location in table format:

- Release location identification number
- Release name
- Release type (e.g., point, volume, area, line, pit, etc.)
- Source identification number(s) used by the facility that emit out of this release location
- Release location using UTM coordinates
- Release parameters by release type (e.g., shown for point source):
  - Stack height (m), stack diameter (building dimensions for downwash), exhaust gas exit velocity (m/s), exhaust gas volumetric flow rate (ACFM), exhaust gas exit temperature (K), etc.

4.16.2.2 Source Description and Operating Schedule

The description and operating schedule for each source should be reported in table form including the following information:

- Source identification number used by the facility
- Source name
- Number of operating hours per day and per year (e.g., 0800-1700, 2700 hr/yr)
- Number of operating days per week (e.g., Mon-Sat)
- Number of operating days or weeks per year (e.g., 52 wk/yr excluding major holidays)
- Release point identification number(s) for where source emissions are released

[3] Health and Safety Code section 44346 authorizes facility operators to designate certain "Hot Spots" information as trade secret. Section 44361(a) requires districts to make health risk assessments available for public review upon request. Section 44346 specifies procedures to be followed upon receipt of a request for the release of trade secret information. See also the Inventory Guidelines Report regarding the designation of trade secret information in the Inventory Reports.

- Fraction of source emissions emitted at each release point by release point ID number

4.16.2.3 Emission Control Equipment and Efficiency

Report emission control equipment and efficiency by source and by substance

4.16.2.4 Emissions Data Grouped By Source

Report emission rates for each toxic substance, grouped by source (i.e., emitting device or process identified in Inventory Report), in table form including the following information:

- Source name
- Source identification number
- Substance name and CAS number (from Inventory Guidelines)
- Annual average emissions for each substance (lb/yr)
- Hourly maximum emissions for each substance (lb/hr)

4.16.2.5 Emissions Data Grouped by Substance

Report facility total emission rate by substance for all emitted substances listed in the Air Toxics "Hot Spots" Program including the following information:

- Substance name and CAS number (from Inventory Guidelines)
- Annual average emissions for each substance (lb/yr)
- Hourly maximum emissions for each substance (lb/hr)

4.16.2.6 Emission Estimation Methods

Report the methods used in obtaining the emissions data indicating whether emissions were measured or estimated. Clearly indicate any emission data that are not reflected in the previously submitted emission inventory report and submit a revised emission inventory report to the district. A reader should be able to reproduce the risk assessment without the need for clarification.

4.16.2.7 List of Substances

Include tables listing all "Hot Spots" Program substances which are emitted, plus any other substances required by the District. Indicate substances to be evaluated for cancer risks and noncancer health impacts.

4.16.3 ***Exposed Population and Receptor Location***

Report the following information regarding exposed population and receptor locations. See Chapter 9 and specific sections within this chapter for more detailed information.

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- Description of zone of impact including map showing the location of the facility, boundaries of zone of impact, census tracts, emission sources, sites of maximum exposure, and the location of all appropriate receptors. This should be a true map (one that shows roads, structures, etc.), drawn to scale, and not just a schematic drawing. USGS 7.5 minute maps or GIS based maps are usually the most appropriate choices. (If significant development has occurred since the user's survey, this should be indicated.)
- Separate maps for the cancer risk zone of impact and the hazard index (noncancer) zone of impact(s). The cancer zone of impact should include isopleths down to at least the 1/1,000,000 risk level. Because some districts use a level below 1/1,000,000 to define the zone of impact, the District should be consulted. Three separate maps (to represent both chronic, 8-hour, and acute HI) should be created to define the zone of impact for the hazard index from both inhalation and noninhalation pathways greater than or equal to 0.5. The point of maximum impact (PMI), maximum exposed individual at a residential receptor (MEIR), the maximum exposed individual worker (MEIW), and any other locations of interest for both cancer and noncancer risks should be located on the maps.
- Tables identifying population units and sensitive receptors (UTM coordinates, receptor IDs, and street addresses of specified receptors).
- Heights or elevations of the receptor points.
- For each receptor type (e.g., PMI, MEIR, MEIW, and any other location(s) of interest) that will utilize spatial averaging, the domain size and grid resolution must be clearly identified. If another domain or grid resolution other than 20 meters by 20 meters with 5-meter grid spacing will be used for a receptor, then care should be taken to determine the proper domain size and grid resolution that should be used. For a worker, the HRA shall support all assumptions used, including, but not limited to, documentation for all workers showing the area where each worker routinely performs their duties. The final domain size should not be greater than the smallest area of worker movement. Other considerations for determining domain size and grid spacing resolution may include an evaluation of the concentration gradients across the worker area. The grid spacing used within the domain should be sufficient in number and detail to obtain a representative concentration across the area of interest. When spatial averaging over the deposition area of a pasture, garden, or water body, care should be taken to determine the proper domain size to make sure it includes all reasonable areas of potential deposition. The size and shape of the pasture, garden, or water body of interest should be identified and used for the modeling domain. The grid spacing or resolution used within the domain should be sufficient in detail to obtain a representative deposition concentration across the area of interest. One way to determine the grid resolution is to include an evaluation of the concentration gradients across the deposition area. The HRA shall support all assumptions used, including, but not limited to, documentation of the deposition area (e.g., size and shape of the pasture or water body, maps,

representative coordinates, grid resolution, concentration gradients, etc.). The use or spatial averaging is subject to approval by the reviewing authority. This includes the size of the domain and grid resolution that is used for spatial averaging of a worksite or multipathway deposition area.

4.16.4 ***Meteorological Data***

If meteorological data were not obtained directly from the District, then the report must clearly indicate the data source and time period used. Meteorological data not obtained from the District must be submitted in electronic form along with justification for their use including information regarding representativeness and quality assurance.

The risk assessment should indicate if the District required the use of a specified meteorological data set. All memos indicating the District's approval of meteorological data should be attached in an appendix.

4.16.5 ***Model Selection and Modeling Rationale***

The report should include an explanation of the model chosen to perform the analysis and any other decisions made during the modeling process. The report should clearly indicate the name of the models that were used, the level of detail (screening or refined analysis) and the rationale behind the selection.

Also report the following information for each air dispersion model used:

- version number
- selected options and parameters in table form
- Identify the modeling domain(s) and the spacing of receptor grid(s). Grid spacing should be sufficient in number and detail to capture the concentration at all receptors of interest.

4.16.6 ***Air Dispersion Modeling Results***

- Maximum hourly and annual average concentrations of chemicals at appropriate receptors such as the residential and worker MEI receptors
- Annual average and maximum one-hour (and 30-day average for lead only) concentrations of chemicals at appropriate receptors listed and referenced to computer printouts of model outputs
- Model printouts (numbered), annual concentrations, maximum hourly concentrations
- Disk with input/output files for air dispersion program (e.g., the AERMOD input file containing the regulatory options and emission parameters, receptor locations, meteorology, etc.)
- Include tables that summarize the annual average concentrations that are calculated for all the substances at each site. The use of tables that present the relative contribution of each emission point to the receptor concentration is recommended. (These tables should have clear reference to the computer

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model which generated the data. It should be made clear to any reader how data from the computer output were transferred to these tables.) [As an alternative, the above two tables could contain just the values for sites of maximum impact (i.e., PMI, MEIR and MEIW), and sensitive receptors, if required. All the values would be found in the Appendices.]

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5 - Exposure Assessment
Estimation of Concentration and Dose

5.1 Introduction

This chapter provides a summary of how toxicant ground level air concentrations estimated from air dispersion modeling or monitoring results are used to determine dose at receptors of interest. This chapter includes all the algorithms and data (e.g., point estimates, distributions, and transfer factors) that are needed to determine the substance-specific concentration in exposure media and the dose at a receptor of interest. The determination of exposure concentration and dose precedes the calculations of potential health impacts. See Chapter 8 and Appendix I for information on calculating potential health impacts.

At a minimum, three receptors are evaluated in Hot Spots health risk assessments (HRA) (see Section 4.7); these are:

- the Point of Maximum Impact (PMI),
- the Maximally Exposed Individual Resident (MEIR), and
- the Maximally Exposed Individual Worker (MEIW).

The PMI is defined as the receptor point(s) with the highest acute, 8-hour, chronic, or cancer health impact outside the facility boundary. The facility boundary is defined as the property line. Often the fence is on the property line. The MEIR is typically defined as the existing off-site residence(s) (i.e., house, apartment or other dwelling) with the highest acute, chronic, or cancer health impact. Calculating an 8-hour hazard index is not required for the MEIR, but can be performed at the discretion of the District. The MEIW is typically defined as the existing offsite workplace with the highest acute, 8-hour, chronic, or cancer health impact.

In addition, it may be necessary to determine risks at sensitive receptors (e.g., schools, day care centers, elder care centers, and hospitals). The District or reviewing authority should be consulted in order to determine the appropriate sensitive receptors for evaluation. Some situations may require that on-site receptor (worker or residential) locations be evaluated. Some examples where the health impacts of on-site receptors may be appropriate could be military base housing, prisons, universities, or locations where the public may have regular access for the appropriate exposure period (e.g., a lunch time café or museum for acute exposures). The risk assessor should contact the Air Pollution Control or Air Quality Management District (the District) for guidance about any on-site exposure situations at the emitting facility. These on-site locations should be included in the health risk assessment (HRA). If the facility emits multiple substances from two or more stacks, the acute, 8-hour, chronic, and cancer health impacts at the PMI may be located at different physical locations. The MEIR or MEIW cancer, acute, 8-hour, and chronic receptors may also be at different locations.

The process for determining dose at the receptor location, and ultimately potential health impacts, will likely include air dispersion modeling, and, with less frequency, air monitoring data. Air dispersion modeling combines the facility emissions and release parameters and uses default or site-specific meteorological conditions to estimate downwind, ground-level concentrations at various (user-defined) receptor locations. Air dispersion modeling is described in Chapter 4 and is presented in detail in the *Air Toxics Hot Spots Program Risk Assessment Guidelines; Technical Support Document for Exposure Assessment and Stochastic Analysis (OEHHA, 2012a*).

In summary, the process of using air dispersion modeling results as the basis of an HRA follows these four steps:

- Air dispersion modeling is used to estimate annual average and maximum one-hour ground level concentrations (GLC). The air dispersion modeling results are expressed as an air concentration or in terms of (Chi over Q) for each receptor point. (Chi over Q) is the modeled downwind air concentration (Chi) based on an emission rate of one gram per second (Q). (Chi over Q) is expressed in units of micrograms per cubic meter per gram per second, or ($\mu g/m^3$)/(g/s). (Chi over Q) is sometimes written as (χ/Q) and is sometimes referred to as the dilution factor.

- When multiple substances are evaluated, the χ/Q is normally utilized since it is based on an emission rate of one gram per second. The χ/Q at the receptor point of interest is multiplied by the substance-specific emission rate (in g/s) to yield the substance-specific ground-level concentration (GLC) in units of $\mu g/m^3$. The following equations illustrate this point.

$$GLC = \left(\frac{\chi}{Q}\right) x \left(Q_{substance}\right)$$

$$\frac{\chi}{Q} = (\text{Chi over Q}) \text{ in } \left(\frac{\frac{\mu g}{m^3}}{\frac{g}{s}}\right), \text{ from model results with unit emission rate}$$

$$Q_{substance} = \text{substance specific emission rate} \left(\frac{g}{s}\right)$$

- The applicable exposure pathways (e.g., inhalation, soil contact, fish consumption) are identified for the emitted substances, and the receptor locations are identified. This determines which exposure algorithms in this chapter are ultimately used to estimate dose. After the exposure pathways are identified, the fate and transport algorithms described in this chapter are used to estimate concentrations in the applicable exposure media (e.g., soil or water) and the exposure algorithms are used to determine the substance-specific dose.

- The dose is used with cancer and noncancer health values to calculate the potential health impacts for the receptor (Chapter 8). An example calculation

using the high-end point-estimates for the inhalation (breathing) exposure pathway can be found in Appendix I. Appendix I and Chapters 5 (this Section) and 8 also contain information on how the annual average and maximum one-hour ground level concentrations are used for chronic, 8-hour, and acute health risk calculations.

The algorithms in this chapter are also used to calculate media concentrations and dose in the rare instance, for the Hot Spots program, when monitoring equipment was used rather than air dispersion modeling to obtain a receptor's substance-specific GLC. One situation that is specific to monitored data is the treatment of results below the sampling method level of detection (LOD). In short, it is standard risk assessment practice when monitoring results are reported both above and below the LOD to use one-half of the LOD for those sample concentrations reported below the LOD. If all testing or monitoring results fall below the LOD, then assessors should contact the District for appropriate procedures. For more information about reporting emissions under the Hot Spots Program, see the ARB's *Emission Inventory Criteria and Guidelines Regulations (Title 17, California Code of Regulations, Sections 93300-93300.5),* and the *Emission Inventory Criteria and Guidelines Report* (EICG Report), which is incorporated by reference therein (ARB, 2007*)*.

The recommended model for calculating and presenting HRA results for the Hot Spots Program is the HARP software, available from the Air Resources Board (ARB). More information on HARP and directions for downloading the software can be found on the ARB's web site at http://www.arb.ca.gov/toxics/harp/downloads.htm.

5.2 Criteria for Exposure Pathway Evaluation

In order to determine total dose to the receptor the applicable pathways of exposure need to be identified. The inhalation pathway must be evaluated for all Hot Spots substances emitted by the facility. A small subset of Hot Spots substances is subject to deposition onto soil, plants, and water bodies. These substances need to be evaluated by the appropriate noninhalation pathways, as well as by the inhalation pathway, and the results must be presented in all HRAs. These substances include semi-volatile organic chemicals and heavy metals. Such substances are referred to as multipathway substances. Two steps are necessary to determine if a substance should be evaluated for multipathway impacts:

1. Determine whether the substance or its group (e.g., dioxins, PAHs) is listed in Table 5.1.
2. Determine if the substance has an oral reference exposure level (REL) listed in Table 6.4, or if it has an oral cancer slope factor listed in Table 7.1. Two other references for checking the presence of oral health factors are OEHHA's website (OEHHA, 2012b) and the *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values* on the Air Resources Board website (ARB, 2012). Oral or noninhalation exposure pathways include the ingestion of soil, angler-caught fish, drinking water from surface water sources, mother's milk,

homegrown produce, beef, pork, chicken, eggs and cow's milk. The dermal pathway is also evaluated via contact with contaminated soil.

For all multipathway substances, the minimum exposure pathways that must be evaluated at every residential site (in addition to inhalation) are soil ingestion and dermal exposure. If dioxins, furans, PCBs, PAHs or lead are emitted, then the breast-milk consumption pathway also becomes mandatory. The other exposure pathways (e.g., the ingestion of homegrown produce or angler-caught fish) are evaluated on a site-by-site basis. If the resident can be exposed through an impacted exposure pathway, then it must be included in the HRA. However, if there are no vegetable gardens or fruit trees within the zone of impact for a facility, for example, then the produce pathways need not be evaluated. Note that on-site residential receptors are potentially subject to inhalation and noninhalation exposure pathways. Table 8.2 identifies the residential and worker receptor exposure pathways that are mandatory and those that are dependent on the site-specific decisions. While residents can be exposed though several exposure pathways, worker receptors are only evaluated for inhalation, soil ingestion, and dermal exposure using point estimates.

Table 5.1 shows the multipathway substances that, based on available scientific data, can be considered for each noninhalation exposure pathway. The exposure pathways that are evaluated for a substance depend on two factors: 1) whether the substance is considered a multipathway substance for the Hot Spots Program (Table 5.1), and 2) what the site-specific conditions are. A multipathway substance may be excluded from a particular exposure pathway because its physical-chemical properties can preclude significant exposure via the pathway. For example, some water-soluble substances do not appreciably bioaccumulate in fish; therefore, the fish pathway is not appropriate. In addition, if a particular exposure pathway is not impacted by the facility or is not present at the receptor site, then the pathway is not evaluated. For example, if a fishable water body is not impacted by the facility, or the water source is impacted but no receptor uses it for fishing, then the angler-caught fish pathway is not evaluated.

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Table 5.1 Specific Pathways to be Analyzed for Each Multipathway Substance

Substance	Soil Ingestion	Dermal	Meat, Milk & Egg Ingestion	Fish Ingestion	Exposed Vegetable Ingestion	Leafy Vegetable Ingestion	Protected Vegetable Ingestion	Root Vegetable Ingestion	Water Ingestion	Breast Milk Ingestion
Inorganic chemicals										
Arsenic & compounds	X	X	X	X	X	X	X	X	X	
Beryllium & compounds	X	X	X	X	X	X	X	X	X	
Cadmium & compounds	X	X	X	X	X	X	X	X	X	
Chromium VI & compounds	X	X	X[a]	X	X	X	X	X	X	
Fluorides (soluble compounds)	X	X	X		X	X	X	X	X	
Lead & compounds	X	X	X	X	X	X	X	X	X	X
Mercury & compounds	X	X	X	X	X	X	X	X	X	
Nickel & compounds	X	X	X	X	X	X	X	X	X	
Selenium & compounds	X	X	X	X	X	X	X	X	X	
Organic chemicals										
Creosotes	X	X	X	X	X	X			X	X
Diethylhexylphthalate	X	X	X	X	X	X			X	
Hexachlorobenzene	X	X	X	X	X	X			X	
Hexachlorocyclohexanes	X	X	X	X	X	X			X	
4,4'-Methylene dianiline	X	X			X	X			X	
Pentachlorophenol[b]										
PCBs	X	X	X	X	X	X			X	X
Polychlorinated dibenzo-p-dioxins and dibenzofurans	X	X	X	X	X	X			X	X
PAHs	X	X	X	X	X	X			X	X

[a] Cow's milk only; no multipathway analysis for meat and egg ingestion
[b] To be evaluated by pathway in future amendments to the Hot Spots Program

5.3 Estimation of Concentrations in Air, Soil, and Water

Once emissions exit the source, the substances emitted will be dispersed in the air. The substances in the exhaust gas with high vapor pressures will remain largely in the vapor phase, and substances with lower vapor pressures will tend to adsorb to fly ash or other particulate matter. The emission plume may contain both vapor phase substances and particulates. A semivolatile organic toxicant can partition into both vapor and particulate phases. Particulates will deposit on vegetation, on soil, and in water at a rate that is dependent on the particle size. Use the 0.02 m/s deposition rate for emission sources that have verifiable particulate matter control devices or for emission sources that may be uncontrolled but only emit particulate matter that is less than 2.5 microns (e.g., internal combustion engines). The following algorithms are used to estimate concentrations in environmental media including air, soil, water, vegetation, and animal products.

5.3.1 *Air*

The ground level concentration (GLC, or C_{air} as shown in EQ 5.3.1) of a substance in air is a function of the facility emission rate and the dilution factor (χ/Q) at the points under evaluation.

A. Equation 5.3.1: $C_{air} = Q_{substance} \times \chi/Q$

1. C_{air} = Ground level concentration ($\mu g/m^3$)
2. $Q_{substance}$ = Substance emission rate (g/sec)
3. χ/Q = Dilution factor provided by dispersion modeling ($\mu g/m^3$/g/sec)

a. Recommended values for EQ 5.3.1:

1. $Q_{substance}$ = Facility-specific, substance emission rate
2. χ/Q = For point of interest, site specific, from dispersion modeling

b. Assumptions for EQ 5.3.1:

1. No plume depletion
2. Emission rate is constant, i.e., assumes steady state

5.3.2 *Soil*

The average concentration of the substance in soil (C_s) is a function of the deposition, accumulation period, chemical specific soil half-life, mixing depth, and soil bulk density. For simplicity and health protection, the Tier 1 default assumes 70-year soil deposition for the accumulation period at end of 70-year facility lifetime. The risk assessor may also choose a supplemental Tier 2 approach, subject to District approval or reviewing authority approval, in which the assessor applies a soil accumulation period based on the facility's start date of operation (e.g., historical date when emissions began), or the current exposure conditions, and the expected duration of operation.

A. Equation 5.3.2 A: $C_s = Dep \times X / (K_s \times SD \times BD \times T_t)$

1. C_s = Average soil concentration over the evaluation period ($\mu g/kg$)
2. Dep = Deposition on the affected soil area per day ($\mu g/m^2$-d)
3. X = Integral function for soil accumulation (d), see **EQ 5.3.2 C** below
4. K_s = Soil elimination constant (d^{-1})
5. SD = Soil mixing depth (m)
6. BD = Soil bulk density (kg/m^3)
7. T_t = Soil exposure duration or soil accumulation period (d)

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a: Recommended default values for EQ 5.3.2 A:

1. Dep = Calculated in EQ 5.3.2 B
2. X = Calculated in EQ 5.3.2 C
3. K_s = Calculated in EQ 5.3.2 D
4. SD = 0.01 (m) for playground setting (soil ingestion and dermal pathways) and 0.15 (m) for agricultural setting (produce and meat pathways)
5. BD = 1,333 (kg/m^3)
6. T_t = 25,550 (d) = 70 years

b: Assumptions for EQ 5.3.2 A:

1. Substances are uniformly mixed in soil.
2. Substances are not leached or washed away, except where evidence exists to the contrary.
3. It is assumed that toxicants accumulate in the soil for 70 years from deposition over the 70 year lifespan of the facility. Use 70-year soil accumulation (T_t) for Tier 1 estimation of 9-, 30- and 70-year residential exposure, and 25-year off-site worker exposure.
4. For a receptor ingesting mother's milk, the mother is exposed from birth to 25 years of age; the infant is then born and receives mother's milk for one year. Default assumes 70-year soil accumulation for mother's milk pathway. See Table 5.1 for information on which substances or groups of substances must be evaluated by the mother's milk pathway.

B. Equation 5.3.2 B: $Dep = C_{air} \times Dep\text{-}rate \times 86{,}400$

1. C_{air} = Ground level concentration ($\mu g/m^3$)
2. Dep-rate = Vertical rate of deposition (m/sec)
3. 86,400 = Seconds per day conversion factor (sec/d)

a: Recommended default values for EQ 5.3.2 B:

1. C_{air} = Calculated above in EQ 5.3.1 A
2. Dep-rate = Use 0.02 meters/second for controlled sources, or 0.05 meters/second for uncontrolled sources.

b: Assumptions for EQ 5.3.2 B:

1. Deposition rate remains constant. A deposition rate must be used when determining potential noninhalation health impacts. In the absence of facility specific information on the size of the emitted particles, the default values for deposition rate should be used. Currently, the default value of 0.02 meters per second is used for emission sources that have verifiable particulate matter control devices or for emission sources that may be uncontrolled but only emit particulate matter that is less than 2.5 microns

(e.g., internal combustion engines). The 0.05 meters per second default value is used for risk assessment if the emissions are uncontrolled. If other deposition rate factors are used, sufficient support documentation must be included with the HRA.

C. Equation 5.3.2 C: $X = [\{e^{-Ks * Tf} - e^{-Ks * To}\} / K_s] + T_t$

1. e = 2.718
2. K_s = Soil elimination constant
3. T_f = End of soil accumulation evaluation period (d)
4. T_o = Beginning of soil accumulation evaluation period (d)
5. T_t = Total days of soil exposure (soil accumulation period) T_f-T_o (d)

a: Recommended default values for EQ 5.3.2 C:

1: K_s = Calculated in EQ 5.3.2 D
2: T_f = 25,550 (d) = 70 years. Total soil exposure time at end of facility operation
3: T_o = 0 (d) The initial time (start period) of soil exposure to all receptors that are impacted by the soil pathway.

Note: Under a Tier 2 scenario, the risk assessor may also adjust T_f and T_t, subject to District approval, to replicate current soil accumulation and expected accumulation at the end of facility operation.

D. Equation 5.3.2 D: $K_s = 0.693 / t_{1/2}$

1. 0.693 = Natural log of 2
2. $t_{1/2}$ = Chemical specific soil half-life (d)

a: Recommended default values for EQ 5.3.2 D:

1. $t_{1/2}$ = Chemical-specific. See Table 5.2

5.3.3 *Water*

The water pathway is evaluated if a standing water body (e.g., pond or lake) is impacted by facility emissions and is used as a source for drinking water by food-producing animals or humans, or is a source of angler-caught fish. The average concentration of the substance in water (C_w) is a function of direct deposition and material carried in by surface run-off. However, only the contribution from direct deposition will be considered at this time.

A. Equation 5.3.3 A: $C_w = C_{depw}$

1. C_w = Average concentration in water (μg/kg)
2. C_{depw} = Contribution due to direct deposition (μg/kg)

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B. Equation 5.3.3 B: $C_{depw} = Dep \times SA \times 365 / (WV \times VC)$

1. Dep = Deposition on water body per day (μg/m^2/d)
2. SA = Water surface area (m^2)
3. 365 = Days per year (d/yr)
4. WV = Water volume (kg)
5. VC = Number of volume changes per year

a: Recommended default values for EQ 5.3.3 B:

1. Dep = Calculated above in EQ 5.3.2 B
2. SA = Site specific water surface area (m^2)
3. WV = Site specific water volume in (kg) (1L = 1 kg)
4. VC = Site specific number of volume changes per year (SA, WV, and VC values can be obtained from the appropriate Department of Water Resources (DWR) Regional office)

b: Assumptions for EQ 5.3.3 B:

1. With the exception of dilution via number of volume changes per year, all material deposited into the water remains suspended or dissolved in the water column and is available for bioaccumulation in fish.

5.3.4 *Estimation of Concentrations in Vegetation, Animal Products, and Mother's Milk*

Estimates of the concentration of the substance in vegetation, animal products and mother's milk require the use of the results of the air, water, and soil environmental fate evaluation. Plants, animals and nursing mothers will be exposed to the substances at the concentrations previously calculated in Section 5.31 to 5.33 above.

5.3.4.1 Vegetation

The average concentration of a substance in and on vegetation (C_v) is a function of direct deposition of the substance onto the vegetation and of root translocation or uptake from soil contaminated by the substance. We currently recommend root translocation only for the inorganic compounds.

A. Equation 5.3.4.1 A: $C_v = C_{depv} + C_{trans}$

1. C_v = Average concentration in and on specific types of vegetation (μg/kg)
2. C_{depv} = Concentration due to direct deposition (μg/kg)
3. C_{trans} = Concentration in vegetation due to root translocation or uptake (μg/kg) – see EQ 5.3.4.1 C below

B. Equation 5.3.4.1 B: $C_{depv} = [Dep \times IF / (k \times Y)] \times (1 - e^{-kT})$

1. Dep = Deposition on affected vegetation per day ($\mu g/m^2/d$)
2. IF = Interception fraction
3. k = Weathering constant (d^{-1})
4. Y = Yield (kg/m^2)
5. e = Base of natural logarithm (2.718)
6. T = Growth period (d)

a: Recommended default values for EQ 5.3.4.1 B:

1. Dep = Calculated above in EQ 5.3.2 B
2. IF = Crop specific:
   - a: Root crops = 0.0
   - b: Leafy crops = 0.2
   - c: Protected crops = 0.0
   - d: Exposed crops = 0.1
   - e: Pasture = 0.7
3. k = 0.1 (d^{-1})
4. Y = 2 (kg/m^2) for root, leafy, protected, exposed and pasture [CA Department of Food and Agriculture dot maps]
5. T = 45 (d) for leafy crops
   T = 90 (d) for exposed crops

b: Crop-type definitions for EQ 5.3.4.1 B:

1. **Leafy** crop category consists of broad-leafed vegetables in which the leaf is the edible part. Examples include spinach, lettuce, cabbage, and kale.
2. **Root** crop category includes vegetables in which the edible portion is underground. Examples are potato, radish, and carrot.
3. **Exposed** produce category consists of crops with a small surface area subject to air deposition. Examples include strawberries, tomato, cucumber, zucchini, green bean and bell pepper.
4. **Protected** produce category consists of crops in which the edible part is not exposed to air deposition (e.g., the exposed skin of the crop is removed and not eaten). Examples are corn, pea, pumpkin and oranges.

Tables H-9 through H-15 in Appendix H provide more examples of various leafy, root, exposed and protected crop types.

c: Assumptions for EQ 5.3.4.1 B:

1. No deposition on root or protected crops
2. No uptake and translocation of deposited chemicals onto crops

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C. Equation 5.3.4.1 C: (for inorganic compounds)

$$C_{trans} = C_s \times UF_2$$

1. C_s = Average soil concentration ($\mu g/kg$)
2. UF_2 = Uptake factor based on soil concentration

a: Recommended default values for EQ 5.3.4.1 C:

1. C_s = Calculated above in EQ 5.3.2 A
2. UF_2 = See Table 5.2

D. Equation 5.3.4.1 D: (for organic compounds)

$$UF_2 = [(0.03 \times K_{ow}^{0.77}) + 0.82] / [(K_{oc})(F_{oc})]$$

1. 0.03 = Empirical constant
2. K_{ow} = Octanol:water partition factor
3. 0.77 = Empirical constant
4. 0.82 = Empirical constant
5. K_{oc} = Organic carbon partition coefficient
6. F_{oc} = Fraction organic carbon in soil

a: Recommended default values for EQ 5.3.4.1 D:

1. K_{ow} = Chemical specific, see Table 5.2
2. K_{oc} = Chemical specific, see Table 5.2
3. F_{oc} = 0.1

b: Assumptions for EQ 5.3.4.1 D:

1. OEHHA currently has no recommended root uptake factors for organic compounds listed in Table 5.2. Evidence suggests this route is insignificant compared to airborne deposition. Nevertheless, if it becomes necessary in specific cases to assess root uptake for an organic compound, Equation 5.3.4.1 D would be the algorithm OEHHA recommends using to assess root uptake.

5.3.4.2 Animal Products

The average concentration of the substance in animal products (C_{fa}) depends on which routes of exposure exist for the animals. Animal exposure routes include inhalation, soil ingestion, ingestion of contaminated feed and pasture, and ingestion of contaminated water.

A. Equation 5.3.4.2:

$$C_{fa} = (\text{Inhalation} + \text{Water ingestion} + \text{Feed ingestion} + \text{Pasture/Grazing ingestion} + \text{Soil ingestion}) * Tco$$

1. C_{fa} = Average concentration in farm animals and their products (μg/kg)
2. Inhalation, water ingestion, etc. = Dose through inhalation, water ingestion, etc. (μg/d)
3. Tco = Chemical-specific transfer coefficient of contaminant from diet to animal product (d/kg)

a: Recommended default values for EQ 5.3.4.2:

1. Tco = See Tables 5.3a and 5.3b

b: Assumptions for EQ 5.3.4.2:

1. The Tco for a given chemical is the same for all exposure routes

5.3.4.2.1 Inhalation

A. Equation 5.3.4.2.1: $\text{Inhalation} = BR_a \times C_{air}$

1. Inhalation = Dose through inhalation (μg/d)
2. BR_a = Breathing rate for animal (m^3/d)
3. C_{air} = Ground-level concentration (μg/m^3)

a: Recommended default values for EQ 5.3.4.2.1:

1. BR_a = See Table 5.4
2. C_{air} = Calculated above in EQ 5.3.1 A

b: Assumptions for EQ 5.3.4.2.1:

1. All material inhaled is 100% absorbed

5.3.4.2.2 Water Ingestion

The water ingestion pathway is applied if there are surface water sources of drinking water, such as springs, ponds or lakes, which are exposed to airborne deposition of facility emissions. Due to the site-specific nature for this exposure pathway, OEHHA recommends that the risk assessor conduct a survey at the site to estimate the fraction of contaminated drinking water ingested by the animals, if such sources exist.

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A. Equation 5.3.4.2.2: $\text{Water ingestion} = WI_a \times FSW \times C_w$

1. Water ingestion = Dose through water ingestion (μg/d)
2. WI_a = Water ingestion for animal (kg/d)
3. FSW = Fraction of water ingested from a contaminated body of water (site-specific)
4. C_w = Average concentration in water (μg/kg) For water 1 kg = 1 L

a: Recommended default values for EQ 5.3.4.2.2:

1. WI_a = See Table 5.4
2. FSW = Site specific fraction, need to survey water ingestion practices in affected area
3. C_w = Calculated above in EQ 5.3.3 A

5.3.4.2.3 Feed Ingestion

The fraction of feed intake by cattle, pigs and poultry that is contaminated by facility emissions can vary considerably depending on the manner in which the animals are raised. Due to the site-specific nature for this exposure pathway, OEHHA recommends that the risk assessor conduct a survey at the site to estimate the fraction of contaminated feed eaten by the animals. For a Tier 1 assessment, default values are provided by OEHHA (see Table 5.4 and Table 5.4 footnotes) for estimation of exposure to the animals.

Agricultural mixing depth should be used for calculating soil concentration for feed and pasture contamination.

5.3.4.2.3.1 Feed Ingestion

A. Equation 5.3.4.2.3.1: $\text{Feed ingestion} = (1.0 - FG) \times FI \times L \times C_v$

1. Feed ingestion = Dose through the ingestion of feed (μg/d) that is harvested after it is impacted by source emissions
2. FG = Fraction of diet provided by grazing (site-specific)
3. FI = Feed ingestion rate (kg/d)
4. L = Fraction of locally grown (source impacted) feed that is not pasture (site-specific)
5. C_v = Concentration in feed (μg/kg)

a: Recommended default values EQ 5.3.4.2.3.1:

1. FG = Default values in Table 5.4 footnote b, although a site-specific survey for the fraction of diet provided by grazing is recommended
2. FI = See Table 5.4
3. L = Default values in Table 5.4 footnote b, although a site-specific survey for fraction of locally grown (source impacted) feed that is not pasture is recommended
4. C_v = As calculated above in EQ 5.3.4.1 A

b: Assumptions for EQ 5.3.4.2.3.1:

1. Feed (FI) transported from an off-site location (i.e., not grown locally) is not contaminated by facility emissions.

5.3.4.2.3.2 Pasture/Grazing ingestion

A. Equation 5.3.4.2.3.2: $\text{Pasture/Grazing ingestion} = FG \times C_v \times FI$

1. Pasture/Grazing ingestion = Dose through pasture/grazing (μg/d)
2. FG = Fraction of diet provided by grazing (site-specific)
3. C_v = Concentration in pasture/grazing material (μg/kg)
4. FI = Feed ingestion rate (kg/d)

a: Recommended default values EQ 5.3.4.2.3.2:

1. FG = Default values in Table 5.4 for fraction of diet provided by grazing, although a site-specific survey is recommended
2. C_v = As calculated above in EQ 5.3.4.1 A
3. FI = See Table 5.4

5.3.4.2.4 Soil ingestion

The feeds provided to dairy and beef cattle may contain small quantities of soil. A larger fraction of soil by weight of food is taken up during grazing. Rooting behavior by pigs with access to soil will result in soil ingestion. Likewise, poultry with free access to soil or pasture will also ingest soil. Defaults for soil ingestion are shown in Table 5.4.

A. Equation 5.3.4.2.4 A: $\text{Soil ingestion} = SI_a \times C_s$

1. Soil ingestion = Dose through soil ingestion (μg/d)
2. SI_a = Soil ingestion rate for animal (kg/d)
3. C_s = Average soil concentration (μg/kg)

a: Recommended default values for EQ 5.3.4.2.4 A:

1. SI_a = Calculated below
2. C_s = Calculated above in EQ 5.3.2 A

B. Equation 5.3.4.2.4 B: $SI_a = [(1 - FG) \times FS_f \times FI] + [FG \times FS_p \times FI]$

1. FG = Fraction of diet provided by grazing
2. FS_f = Soil ingested as a fraction of feed ingested
3. FI = Feed ingestion rate (kg/d)
4. FS_p = Soil ingested as a fraction of pasture ingested

a: Recommended default values for EQ 5.3.4.2.4 B:

1. FG = Site specific fraction of diet provided by grazing
2. FS_f = See Table 5.4
3. FI = See Table 5.4
4. FS_p = See Table 5.4

b: Assumptions for EQ 5.3.4.2.4 B:

1. The transfer coefficient is the same for all exposure routes.
2. Soil ingested in feed (FS_f) transported from an off-site location (i.e., not grown locally) is assumed not to be contaminated by facility emissions.

5.3.4.3 Bioaccumulation in Angler-Caught Fish

The average concentration in fish (C_f) is based on the concentration in water and a chemical-specific bioaccumulation factor.

A. Equation 5.3.4.3: $Ct = Cw \times BAF$

1. Ct = Concentration in wet weight tissue (muscle) of fish (μg/kg)
2. Cw = Concentration in water (μg/kg)
3. BAF = Fish bioaccumulation factor (unitless)

a: Recommended default values for Equation 5.3.4.3:

1. Cw = As calculated above in Equation 5.3.3 A
2. BAF = Chemical-specific; see Table 5.2

b: Assumptions for Equation 5.3.4.3:

1. For conversion of a chemical concentration in a volume of water shown as µg/L, 1 L water = 1 kg water; thus, for concentration of chemical in water, µg/L = µg/kg.
2. For organic chemicals, BAFs lipid-normalized to adult rainbow trout with 4% lipid content in muscle tissue
3. For organic chemicals, BAFs based on the freely dissolved fraction in water under conditions of average particulate organic carbon and dissolved organic carbon in U.S. lakes and other water bodies
4. For inorganic compounds, BAFs based on wet weight muscle tissue concentration and on the total water concentration of the inorganic compound in water.
5. Contaminant concentrations are uniform in water based on dispersion

5.3.4.4 Bioaccumulation in Mother's Milk

The average concentration of a chemical in mother's milk (C_m) is a function of the mother's exposure through all exposure routes (i.e., inhalation, ingestion via food, drinking water, and soil, and dermal absorption via skin contact with soil contaminated with the chemical), the contaminant half-life in the mother's body, and transfer of absorbed chemical to mother's milk. The contaminant half-life in the body and transfer to mother's milk is incorporated in biotransfer coefficients (Tco) in Equation 5.3.4.4. See the TSD (OEHHA, 2012a), Appendix J for details on development of biotransfer factors. The substances assessed by the mother's milk pathway are shown in Table 5.1.

A. Equation 5.3.4.4: $$C_m = [(D_{inder} \times Tco_{m_inder}) + (D_{ing} \times Tco_{m_ing})] \times BW$$

1. C_m = Concentration in mother's milk (mg/kg-milk)
2. D_{inder} = The sum of DOSEair + DOSEdermal through inhalation and dermal absorption (mg/kg-BW-day)
3. D_{ing} = The sum of DOSEfood + DOSEsoil + DOSEwater through ingestion (mg/kg-BW-day)
4. Tco_{m_inder} = Biotransfer coefficient from inhalation and dermal absorption to mother's milk (d/kg-milk)
5. Tco_{m_ing} = Biotransfer coefficient from ingestion to mother's milk (d/kg-milk)
6. BW = Body weight of mother (Kg)

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a: Recommended cancer risk default values for EQ 5.3.4.4:

1. D_{ing} = As calculated through ingestion of soil in EQ 5.4.3.1.1 + home-grown produce in EQ 5.4.3.2.1 + home-raised animal products in EQ 5.4.3.2.2 + drinking water in EQ 5.4.3.3.1 + angler-caught fish in EQ 5.4.3.4.1
2. D_{inder} = As calculated through inhalation in EQ 5.4.1.1 + dermal exposure in EQ 5.4.2.1
3. Tco_{m_inder} = See Table 5.5
4. Tco_{m_ing} = See Table 5.5

b: Recommended noncancer risk default values for EQ 5.3.4.4:

1. D_{ing} = As calculated through ingestion of soil in EQ 5.4.3.1.2 + home-grown produce and home-raised animal products in EQ 5.4.3.2.3 + drinking water in EQ 5.4.3.3.2 + angler-caught fish in EQ 5.4.3.4.2
2. D_{inder} = As calculated through inhalation in EQ 5.4.1.1 + dermal exposure in EQ 5.4.2.2
3. Tco_{m_inder} = See Table 5.5
4. Tco_{m_ing} = See Table 5.5

c: Assumptions for EQ 5.3.4.4:

1. Default age of mother at birth is 25 years of age, then nurses the infant for 1 year; Use 16<30 year old high-end (95^{th} percentile) daily breathing rate and intake rates for D_{ing} and D_{inder} for estimating dose to mother.
2. For inhalation dose to mother's milk, it is recommended that the EF variate in EQ 5.4.1.1 is left out for calculation of inhalation dose in the mother's milk pathway.
3. Biotransfer coefficient, Tco_{m_inder}, the same for both inhalation and dermal pathways based on lack of first-pass metabolism through the liver for both of these pathways.
4. Biotransfer coefficient, Tco_{m_ing}, the same for all ingestion pathways based on first-pass metabolism through the liver.
5. For chemicals in Table 5.5 lacking either an oral or inhalation Tco, use the oral Tco for the absent inhalation Tco (i.e., for PCDDs and PCDFs and dioxin-like PCBs), or the inhalation Tco for the absent oral Tco (i.e., for lead) in Equation 5.3.4.4.
6. The concentration in the mother's milk is determined using the derived approach to risk assessment. This method allows use of the high-end dose point estimate for driving exposure pathways and the average dose point estimates for other exposure pathways. See Sections 8.2.6 (cancer) and 8.3.3 (noncancer) for the description of the methodology on how to implement the derived methodology.

Table 5.2a Substance-Specific Default Values for Organic Multipathway Substances

				Root Uptake Factors					
Multipathway Substance	Log K_{oc}	Log K_{ow}	Fish BAF	Root	Leafy	Exposed	Protected	GRAF[2]	Soil HalfLife (days)
Creosotes	NA	NA	$8 \times 10^{+2}$	NA	NA	NA	NA	1.0	$4.3 \times 10^{+2}$
Diethylhexyl-phthalate	5.34[1]	7.63[1]	$4 \times 10^{+1}$	NA	NA	NA	NA	1.0	$1.5 \times 10^{+1}$
Dioxins and Furans	NA	NA	$3 \times 10^{+5}$	NA	NA	NA	NA	0.43	$7.0 \times 10^{+3}$
Hexachlorobenzene	NA	NA	$8 \times 10^{+4}$	NA	NA	NA	NA	1.0	$1.0 \times 10^{+8}$
Hexachlorocyclo-hexanes	NA	NA	$3 \times 10^{+3}$	NA	NA	NA	NA	1.0	$9.4 \times 10^{+1}$
4,4'-Methylene dianiline	2.24[3]	1.59[4]	NA	NA	NA	NA	NA	1.0	$4.6 \times 10^{+2}$
Pentachlorophenol[5]									
Polycyclic Aromatic Hydrocarbons (PAHs)	NA	NA	$8 \times 10^{+2}$	NA	NA	NA	NA	1.0	$4.3 \times 10^{+2}$
Polychlorinated Biphenyls	NA	NA	$2 \times 10^{+6}$	NA	NA	NA	NA	1.0	$3.2 \times 10^{+3}$

(1) Averaged log Kow and Koc values determined by most reliable methods (Staples et al., 1997)

(2) GRAF (Gastrointestinal Relative Absorption Factor). The guidelines allow for adjusting for bioavailability where the evidence warrants. For example, there are good data which indicate that dioxin is not as available to an organism when bound to soil or fly ash matrices relative to when it is in solution or in food. Therefore, a bioavailability factor is incorporated into the model to account for this difference. When information becomes available for other chemicals of concern, this type of bioavailability will be incorporated into the model.

(3) Measured by Hansch et al. (1985)

(4) Estimated according to methodology of Lyman et al. (1990)

(5) To be evaluated for specific default values in future amendments to the Hot Spots Program.

NA - Data Not Available or Not Applicable

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Table 5.2b Substance-Specific Default Values for Inorganic Multipathway Substances

				Root Uptake Factors					
Multipathway Substance	Log K_{oc}	Log K_{ow}	Fish BAF	Root	Leafy	Exposed	Protected	GRAF[1]	Soil HalfLife (days)
Arsenic & Inorganic Compounds	NA	NA	$2 \times 10^{+1}$	8×10^{-3}	1×10^{-2}	2×10^{-2}	7×10^{-2}	1.0	$1.0 \times 10^{+8}$
Beryllium & Compounds	NA	NA	$4 \times 10^{+1}$	5×10^{-3}	2×10^{-4}	8×10^{-3}	3×10^{-4}	1.0	$1.0 \times 10^{+8}$
Cadmium & Compounds	NA	NA	$4 \times 10^{+1}$	8×10^{-2}	1×10^{-1}	2×10^{-2}	1×10^{-2}	1.0	$1.0 \times 10^{+8}$
Chromium VI & Compounds	NA	NA	$2 \times 10^{+1}$	$3 \times 10^{+0}$	3×10^{-1}	2×10^{-2}	7×10^{-2}	1.0	$1.0 \times 10^{+8}$
Fluorides (soluble compounds)	NA	NA	NA	9×10^{-3}	4×10^{-2}	4×10^{-3}	4×10^{-3}	1.0	$1.0 \times 10^{+8}$
Lead & Compounds	NA	NA	$2 \times 10^{+1}$	4×10^{-3}	8×10^{-3}	7×10^{-3}	3×10^{-3}	1.0	$1.0 \times 10^{+8}$
Mercury & Inorganic Compounds[2]	NA	NA	$8 \times 10^{+1}$	2×10^{-2}	2×10^{-2}	9×10^{-3}	1×10^{-2}	1.0	$1.0 \times 10^{+8}$
Nickel and compounds	NA	NA	$2 \times 10^{+1}$	6×10^{-3}	1×10^{-2}	3×10^{-3}	3×10^{-2}	1.0	$1.0 \times 10^{+8}$
Selenium & compounds	NA	NA	$1 \times 10^{+3}$	7×10^{-2}	6×10^{-2}	4×10^{-2}	3×10^{-1}	1.0	$1.0 \times 10^{+8}$

(1) GRAF (Gastrointestinal Relative Absorption Factor). The guidelines allow for adjusting for bioavailability where the evidence warrants. For example, there are good data which indicate that dioxin is not as available to an organism when bound to soil or fly ash matrices relative to when it is in solution or in food. Therefore, a bioavailability factor is incorporated into the model to account for this difference. When information becomes available for other chemicals of concern, this type of bioavailability will be incorporated into the model.

(2) Methyl mercury (MeHg) is not represented in the category "mercury & inorganic compounds". The BAF for methyl mercury is orders of magnitude higher than for inorganic mercury. Assessment of MeHg for the fish pathway is not directly applicable to the Hot Spots program, as no facilities are known to emit MeHg directly into the air (OEHHA, 2012; OEHHA, 2006), but it may be formed by action of microbes in sediment. Assessing the methylation of mercury deposited into a water body is difficult, and is also very water body-specific. At this time OEHHA cannot address this issue in the Hot Spots program, but will consider addressing this problem in future amendments of the Guidance.

NA - Data Not Available or Not Applicable.

Table 5.3a Animal Transfer Coefficients for Persistent Organic Chemicals

Organic Chemical	Tco (d/kg)[a]				
	Cow's Milk	Chicken Egg	Chicken Meat	Cattle Meat	Pig Meat
Diethylhexylphthalate	9×10^{-5}	0.04	0.002	6×10^{-4}	5×10^{-4}
Hexachlorobenzene	0.02	20	10	0.2	0.08
Hexachlorocyclohexanes	0.01	7	5	0.2	0.09
PAHs	0.01	0.003	0.003	0.07	0.06
Polychlorinated biphenyls					
Congener 77	0.001	6	4	0.07	0.4
81	0.004	10	7	0.2	0.4
105	0.01	10	7	0.6	0.7
114	0.02	10	7	0.9	0.7
118	0.03	10	7	1	0.7
123	0.004	10	7	0.2	0.7
126	0.04	10	7	2	0.7
156	0.02	10	8	0.9	2
157	0.01	10	8	0.5	2
167	0.02	10	8	1	2
169	0.04	10	8	2	2
189	0.005	10	8	0.2	1
Unspeciated (PCB 126)[b]	0.04	10	7	2	0.7
PCDD/Fs					
Congener 2,3,7,8-TCDD	0.02	10	9	0.7	0.1
1,2,3,7,8-PeCDD	0.01	10	9	0.3	0.09
1,2,3,4,7,8-HxCDD	0.009	10	6	0.3	0.2
1,2,3,6,7,8-HxCDD	0.01	10	6	0.4	0.1
1,2,3,7,8,9-HxCDD	0.007	7	3	0.06	0.02
1,2,3,4,6,7,8-HpCDD	0.001	5	2	0.05	0.2
OCDD	0.0006	3	1	0.02	0.1
2,3,7,8-TCDF	0.004	10	6	0.1	0.02
1,2,3,7,8-PeCDF	0.004	30	10	0.1	0.01
2,3,4,7,8-PeCDF	0.02	10	8	0.7	0.09
1,2,3,4,7,8-HxCDF	0.009	10	5	0.3	0.1
1,2,3,6,7,8-HxCDF	0.009	10	6	0.3	0.09
2,3,4,6,7,8-HxCDF	0.008	5	3	0.3	0.06
1,2,3,7,8,9-HxCDF	0.009	3	3	0.3	0.03
1,2,3,4,6,7,8-HpCDF	0.002	3	1	0.07	0.06
1,2,3,4,7,8,9-HpCDF	0.003	3	1	0.1	0.02
OCDF	0.002	1	0.6	0.02	0.03
Unspeciated (2,3,7,8-TCDD)[b]	0.02	10	9	0.7	0.1

[a] All Tco values were rounded to the nearest whole number.

[b] For unspeciated mixtures, use PCB 126 Tcos to represent the class of PCBs, and 2378-TCDD Tcos to represent the class of PCDDs/Fs.

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Table 5.3b Animal Transfer Coefficients for Inorganic Chemicals

Inorganic Metals and Chemicals	Tco (d/kg)[a]				
	Cow's Milk	Chicken Egg	Chicken Meat	Cattle Meat	Pig Meat
Arsenic	5×10^{-5}	0.07	0.03	2×10^{-3}	0.01[b]
Beryllium	9×10^{-7}	0.09	0.2	3×10^{-4}	0.001
Cadmium	5×10^{-6}	0.01	0.5	2×10^{-4}	0.005
Chromium (VI)	9×10^{-6}	NA[c]	NA	NA	NA
Fluoride	3×10^{-4}	0.008	0.03	8×10^{-4}	0.004[b]
Lead	6×10^{-5}	0.04	0.4	3×10^{-4}	0.001[b]
Mercury	7×10^{-5}	0.8	0.1	4×10^{-4}	0.002[b]
Nickel	3×10^{-5}	0.02	0.02	3×10^{-4}	0.001
Selenium	0.009	3	0.9	0.04	0.5

[a] All Tco values were rounded to the nearest whole number.

[b] The meat Tco was estimated using the metabolic weight adjustment ratio of 4.8 from cattle to pig

[c] NA – no data available or was not applicable

Table 5.4 Point Estimates for Animal Pathway

Parameter	Beef Cattle	Lactating Dairy Cattle	Pigs	Meat Poultry	Egg-laying Poultry
BW (body weight in kg)	533	575	55	1.7	1.6
BR_a (inhalation rate in m^3/d)	107	115	7	0.4	0.4
WI_a (water consumption in kg/d)	45	110	6.6	0.16	0.23
FI (Food Intake in kg/d) DMI[a] and/or pasture grazing[b]	9	22	2.4	0.13	0.12
FS_f (soil fraction of feed)	0.01	0.01	NA	NA	NA
FS_p (soil fraction of pasture)	0.05	0.05	0.04	0.02	0.02

[a] Dry matter intake

[b] For beef and dairy cattle, pasture grazing is assumed to be leafy vegetation (grasses, including greenchop) and accounts for half of the cattle's diet (FG=0.5 in Section 5.3.4.2.3). The default assumes on-site pasture grazing contaminated by facility emissions. Fraction of feed or dry matter intake (e.g., hay, grain) grown on-site is assumed to be contaminated by facility emissions and fraction of feed that is grown off-site is not assumed to be contaminated. A default may be used that assumes all feed is grown off-site (L=0 in Section 5.3.4.2.3), but a survey is recommended to verify the fractions of feed grown on-site and off-site.

For pigs with access to soil, but usually confined to a pen, default assumes no pasture grazing (FG=0 in Section 5.3.4.2.3). For feed, estimated intake consists of equal portions of all plant types including exposed, leafy, protected and root in which 10% (L=0.1 in Section 5.3.4.2.3) of the diet is homegrown and contaminated by facility emissions. The fraction of feed that was transported from an off-site location is assumed not to be contaminated by facility emissions.

For poultry including egg-laying and broiler chickens that have access to soil, default assumes no pasture grazing (FG=0 in Section 5.3.4.2.3). Estimated feed intake is composed of equal proportions of all plant types with 5% (L=0.05 in Section 5.3.4.2.3) homegrown and contaminated by facility emissions. The fraction of feed grown off-site and transported to the receptor was not contaminated by facility emissions.

NA - Not applicable. Assume FS_f is equal to zero.

Table 5.5 Mother's Milk Transfer Coefficients (Tco_m)[a]

Chemical/chem. group	Tco_m (day/kg-milk)
PCDDs - oral[b]	3.7
PCDFs - oral[b]	1.8
Dioxin-like PCBs - oral[b]	1.7
PAHs – inhalation[c]	1.55
PAHs – oral	0.401
Lead - inhalation[d]	0.064

[a] These compound classes represent the chemicals of greatest concern for the mother's milk pathway under the Hot Spots program. It is expected that additional transfer coefficients will be developed for other multipathway chemicals in the Hot Spots Program as data becomes available and is reviewed.

[b] Use the oral Tco_m for the inhalation and dermal pathways. The PCDD, PCDF and dioxin-like PCB Tcos were derived using a Random-effects model from individual Tco_m estimates for 7 PCDDs, 9 PCDFs and 12 dioxin-like PCBs (See OEHHA, 2012, Appendix J).

[c] Use the inhalation Tco_m for the dermal pathway

[d] Use the inhalation Tco_m for the ingestion and dermal pathways

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5.4 Estimation of Dose

Once the concentrations of substances are estimated in air, soil, water, plants, and animal products, they are used to evaluate estimated exposure to people. Exposure is evaluated by calculating the daily dose in milligrams per kilogram body weight per day (mg/kg/d). The following algorithms calculate this dose for exposure through inhalation, dermal absorption, and ingestion pathways. All chemicals must be assessed for exposure through inhalation. If there are emissions of one or more of the subset of semi- or non-volatile multipathway substances, the soil ingestion pathway and the dermal soil exposure pathway are also assessed. The mother's milk pathway may also be a mandatory pathway depending on the multipathway substance released (See Table 5.1). The other exposure pathways may also need to be assessed if a survey of the exposure site shows they are present (e.g., ingestion of water, home-grown crops, home-raised animal products, and angler-caught fish).

This section contains average and high-end point estimates and data distributions for adults and children for many exposure pathways. The point-estimates and data distributions for children fall within the 3rd trimester, 0<2, 2<9, and 2<16 year age groupings. The point-estimates and data distributions for adults fall within the 16<30 and 16-70 year age groupings. When evaluating 9-, 30-, and 70-year exposure durations for cancer risk assessment, assessors will use distributions starting at the third trimester.

Workers are assessed for cancer risk as adults using 8-hour breathing rate point estimates (See Table 5.8). Point estimates for workers are listed under "offsite worker." OEHHA has not developed stochastic distributions for worker exposure. Therefore, there is no Tier 3 stochastic approach for offsite worker cancer risk assessment.

5.4.1 *Estimation of Exposure through Inhalation*

The dose through the inhalation route is estimated for cancer risk assessment and noncancer hazard assessment. Both residential and offsite worker exposures are considered. Since residential exposure includes near-continuous long-term exposure at a residence and workers are exposed only during working hours (i.e., 8 hours/day), different breathing rate distributions are used.

5.4.1.1 Residential Inhalation Dose for Cancer Risk Assessment

Exposure through inhalation is a function of the breathing rate, the exposure frequency, and the concentration of a substance in the air. For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. OEHHA used the mother's breathing rates to estimate dose for the 3rd trimester fetus assuming the dose to the fetus during the 3rd trimester is the same as the mother's dose. These age-specific groupings are needed in order to properly use the age sensitivity factors for cancer risk assessment (see Chapter 8). A Tier 1 evaluation uses the high-end point estimate (i.e., the 95th percentiles) breathing rates for the inhalation

pathway in order to avoid underestimating cancer risk to the public, including children. A possible exception for using high-end breathing rates are when there is exposure to multipathway substances and two of the non-inhalation pathways drive the risk, rather than the inhalation pathway (see Chapter 8).

A. Equation 5.4.1.1: $\text{Dose-air} = C_{air} \times \{BR/BW\} \times A \times EF \times 10^{-6}$

1. Dose-air = Dose through inhalation (mg/kg/d)
2. C_{air} = Concentration in air ($\mu g/m^3$)
3. {BR/BW} = Daily Breathing rate normalized to body weight (L/kg body weight - day)
4. A = Inhalation absorption factor (unitless)
5. EF = Exposure frequency (unitless), days/365 days
6. 10^{-6} = Micrograms to milligrams conversion, liters to cubic meters conversion

a: Recommended default values for EQ 5.4.1.1:

1. {BR/BW} = Daily breathing rates by age groupings, see As supplemental information, the assessor may wish to evaluate the inhalation dose by using the mean point estimates in Table 5.6 to provide a range of breathing rates for cancer risk assessment to the risk manager.
2. Table (point estimates) and Table 5.7 (parametric model distributions for Tier III stochastic risk assessment). For Tier 1 residential estimates, use 95th percentile breathing rates in Table 5.6.
3. A = 1
4. EF = 0.96 (350 days/365 days in a year for a resident)

b: Assumption for EQ 5.4.1.1:

1. The fraction of chemical absorbed (A) is the same fraction absorbed in the study on which the cancer potency or Reference Exposure Level is based.

As supplemental information, the assessor may wish to evaluate the inhalation dose by using the mean point estimates in Table 5.6 to provide a range of breathing rates for cancer risk assessment to the risk manager.

Table 5.6 Point Estimates of Residential Daily Breathing Rates for 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years (L/kg BW-day)

	3rd Trimester[a]	0<2 years	2<9 years	2<16 years	16<30 years	16<70 years
	L/kg-day					
Mean	225	658	535	452	210	185
95th Percentile	361	1090	861	745	335	290

[a] 3rd trimester **breathing rates** based on breathing rates of pregnant women using the assumption that the dose to the fetus during the 3rd trimester is the same as that to the mother.

Table 5.7 Daily Breathing Rate Distributions by Age Group for Residential Stochastic Analysis (L/kg BW-day)

	3rd Trimester	0<2 years	2<9 years	2<16 years	16<30 years	16-70 years
Distribution	Max extreme	Max extreme	Max extreme	Log-normal	Logistic	Logistic
Minimum	78	196	156	57	40	13
Maximum	491	2,584	1,713	1,692	635	860
Scale	59.31	568.09	125.59		40.92	36.19
Likeliest	191.50	152.12	462.61			
Location				-144.06		
Mean	225	658	535	452	210	185
Std Dev	72	217	168	172	75	67
Skewness	0.83	2.01	1.64	1.11	0.83	1.32
Kurtosis	3.68	10.61	7.88	6.02	5.17	10.83
Percentiles						
5%	127	416	328	216	96	86
10%	142	454	367	259	118	104
25%	179	525	427	331	161	141
50%	212	618	504	432	207	181
75%	260	723	602	545	252	222
80%	273	758	631	572	261	233
90%	333	934	732	659	307	262
95%	361	1090	861	745	335	290
99%	412	1430	1140	996	432	361

5.4.1.2 Offsite Worker (MEIW) Inhalation Dose for Cancer Risk Assessment

For worker exposure, the default assumes working age begins at 16 years, and that exposures to facility emissions occur during the work shift, typically up to 8 hours per day during work days. Breathing rates that occur over an 8-hour period vary depending on the intensity of the activity (See Table 5.8), and are used to estimate the inhalation dose. The 8-hour breathing rates may also be useful for cancer risk assessment of children and teachers exposed at schools during school hours.

Another risk management consideration for the offsite worker scenario for cancer assessment of a Hot Spots facility is whether there are women of child-bearing age at the MEIW location and whether the MEIW has a daycare center. Since the third trimester is only a short segment of the 25 year exposure duration used for the MEIW, the resulting risk estimate would not differ significantly. An exception to this assumption is high exposure to carcinogens over a short period, as might occur during short-term projects (see Section 8.2.10). In this case, risk assessment during the third trimester may be warranted. However, if there is onsite daycare at the MEIW, then the risks to the children will be underestimated using the offsite adult worker scenario due to increased exposure (per kg body weight) and increased sensitivity to carcinogen exposure (see Section 8.2.1). In this case, the Districts may wish to include a calculation of inhalation dose for the children in the onsite daycare, assuming they could be there from 0 to age 6 years.

Exposed workers may be engaged in activities ranging from desk work, which would reflect breathing rates of sedentary/passive or light activities, to farm worker activities, which would reflect breathing rates of moderate intensity (See Table 5.9). OEHHA recommends default (Tier 1) point estimate 8-hour breathing rates in L/kg-8-hrs based on the mean and 95th percentile of moderate intensity activities, 170 and 230 L/kg-8-hrs, respectively, for adults 16-70 years old.

Many facilities operate non-continuously, as in only 8-10 hours per day, but the air dispersion modeling is performed as if the emissions were uniformly emitted over 24 hours a day, 7 days per week. The air dispersion computer model used, including AERMOD and other models, typically calculate an annual average air concentration based on actual operating conditions but also include the hours of nonoperation in the average concentration.

Therefore, there are two components that determine the worker exposure to facility emissions:

1) What is the estimated concentration the worker is exposed to (i.e., breathes), during the work shift, and

2) What is the amount of time the offsite worker's schedule overlaps with the facility's emission schedule?

There are two approaches to estimating the modeled concentration the worker is breathing during the work shift. The first approach uses a worker adjustment factor (i.e.,

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the WAF) to approximate what the worker is breathing based on the modeling run used for residential receptors. The second approach uses a special modeling run with the hourly raw results from an air dispersion analysis and is described in Appendix M.

The first and more basic approach is to obtain the long term average concentration as you would for modeling a residential receptor, then adjusting this exposure concentration using the calculated WAF (EQ 5.4.1.2 B) to estimate the concentration the offsite worker is exposed to during the work shift (shown as (C_{air} × WAF) in EQ 5.4.1.2 A). This method is characteristic of a default approach used in a Tier 1 assessment. Once the exposure concentration is determined, the worker's inhalation dose (Dose-air) can be calculated as shown in EQ 5.4.1.2 A.

The second approach for determining the air concentration the worker is exposed to uses a refined modeling run where the hourly raw dispersion model output are post processed to examine the hourly concentrations that fall within the offsite worker's shift. This method provides a more representative estimate of the air concentration, but is more complex, and time consuming than the first method. See Appendix M for information on how to simulate the long term concentration for the offsite worker that can be used to estimate inhalation cancer risk.

The HARP software has the ability to calculate worker impacts using an approximation factor and, in the future, it will have the ability to post process refined worker concentrations using the hourly raw results from an air dispersion analysis.

If the off-site worker's shift does not completely overlap the emission schedule of the facility, then a Discount Factor (DF) may be applied to the WAF. Calculation of the DF is shown in EQ 5.4.1.2 C. The default assumption is that the offsite worker's shift falls completely within the emission schedule of the facility, in which case DF=1. Use of a DF less than 1 requires a survey at the MIEW to verify that some portion of the off-site worker shift is not subject to the facility emissions.

A. Equation 5.4.1.2 A: $\text{Dose-air} = (C_{air} \times WAF) \times \{BR/BW\} \times A \times EF \times 10^{-6}$

1. Dose-air = Dose through inhalation (mg/kg/d)
2. C_{air} = Annual average concentration in air ($\mu g/m^3$)
3. WAF = Worker air concentration adjustment factor (unitless)
4. {BR/BW} = Eight-hour breathing rate normalized to body weight (L/kg body weight - day)
5. A = Inhalation absorption factor (unitless)
6. EF = Exposure frequency (unitless), days/365 days)
7. 10^{-6} = Micrograms to milligrams conversion, Liters to cubic meters conversion

a: Recommended default values for EQ 5.4.1.2 A:

1. WAF = See EQ. 5.4.1.2 B for formula to calculate WAF, or App. M for refined post-processing modeling to calculate WAF.
2. {BR/BW} = For workers, use age16-70 year, 95th percentile, moderate intensity 8-hour point estimate breathing rates (see Table 5.8). No worker breathing rate distributions exist for stochastic risk assessment.
3. A = 1
4. EF = 0.68 (250 days / 365 days). Equivalent to working 5 days/week, 50 weeks/year.

b: Assumption for EQ 5.4.1.2 A:

1. The fraction of chemical absorbed (A) through the lungs is the same fraction absorbed in the study on which the cancer potency factor is based.
2. The source emits during the daylight hours. Calculate WAF (EQ 5.4.1.2 B) if a special post-processing modeling run described in App. M was not completed. For nighttime emissions and exposure scenarios, see Appendix N.

B. Equation 5.4.1.2 B: $WAF = (H_{res} / H_{source}) \times (D_{res} / D_{source}) \times DF$

1. WAF = Worker adjustment factor (unitless)
2. H_{res} = Number of hours per day the annual average residential air concentration is based on (always 24 hours)
3. H_{source} = Number of hours the source operates per day
4. D_{res} = Number of days per week the annual average residential air concentration is based on (always 7 days)
5. D_{source} = Number of days the emitting source operates per week
6. DF = Discount factor, for when the offsite worker's schedule partially overlaps the source's emission schedule

b: Recommended default values for EQ 5.4.1.2 B:

1. DF = 1 for offsite worker's schedule occurring within the source's emission schedule. A site-specific survey may be used to adjust the DF using EQ 5.4.1.2 C.

C. Equation 5.4.1.2 C: $DF = (H_{coincident} / H_{worker}) \times (D_{coincident} / D_{worker})$

1. $H_{coincident}$ = Number of hours per day the offsite worker's schedule and the source's emission schedule coincide
2. H_{worker} = Number of hours the offsite worker works per day
3. $D_{coincident}$ = Number of days per week the offsite worker's schedule and the source's emission schedule coincide
4. D_{worker} = Number of days the offsite worker works per week

Tier 2 adjustments for EQ 5.4.1.2 A-C may be used for:

1. Eight-hour breathing rate. Point estimates in Table 5.8 for lower breathing rates of sedentary/passive and light intensity work activities may be substituted in site-specific Tier 2 scenarios. Table 5.9 can be used to estimate breathing rate intensities for various job activities. Use of different breathing rates requires a survey of the exposed workplace and approval by Air District, ARB and OEHHA.
2. Discount Factor (DF) in EQ 5.4.1.2 C. If a site-specific survey of the offsite worker schedule only partially overlaps with the source's emission schedule, then a DF less than 1 may be calculated. Use of a DF less than 1 requires a survey of the exposed workplace and approval by the Air District or ARB.

The 8-hour breathing rates are based on minute ventilation rates derived by U.S. EPA (2009). U.S. EPA employed a metabolic equivalent (METS) approach for estimating breathing rates. This method determines daily time-weighted averages of energy expenditure (expressed as multipliers of the basal metabolic rate) across different levels of physical activity. The 8-hour breathing rates shown in Table 5.8 are divided into three categories:

Sedentary & Passive Activities (METS ≤ 1.5)

Light Intensity Activities (1.5 < METs ≤ 3.0)

Moderate Intensity Activities (3.0 < METs ≤ 6.0)

For example, a METS = 1 is roughly equivalent to energy expenditure during sleep and is close to the basal metabolic rate. A METS activity that is two to three times greater (METS = 2 to 3) is characteristic of light intensity activities, such as administrative office work or sales work as shown in Table 5.9.

Under a Tier 1 scenario, the risk assessor may simply use the 95th percentile breathing rate for moderate intensity activities of 230 L/kg-8 hrs in Eq. 5.4.1.2 A to calculate the daily dose via the inhalation route to the worker. In an example of a Tier 2 scenario, the risk assessor surveys the workplace and determines that the worker(s) at the MEIW receptor are primarily sitting at a desk performing administrative-type work on a computer. Referring to Table 5.9, this activity corresponds most closely to "administrative office work" with a mean activity level of 1.7 and a SD = 0.3. This level of activity is considered "light intensity activity" (i.e., 1.5 < METs ≤ 3.0). With the prior approval of the Air District or ARB, the risk assessor may then use the 95th percentile breathing rate of 100 L/kg-8 hr for light intensity activities in Equation 5.4.1.2 A.

Table 5.8. Eight-Hour Breathing Rate (L/kg per 8 Hrs) Point Estimates for Males and Females Combined[a,b]

	0<2 years	2<9 years	2<16 years	16<30 years	16-70 years
	Sedentary & Passive Activities (METS ≤ 1.5)				
Mean	200	100	80	30	30
95th Percentile	250	140	120	40	40
	Light Intensity Activities (1.5 < METs ≤ 3.0)				
Mean	490	250	200	80	80
95th Percentile	600	340	270	100	100
	Moderate Intensity Activities (3.0 < METs ≤ 6.0)				
Mean	890	470	380	170	170
95th Percentile	1200	640	520	240	230

[a] For pregnant women, OEHHA recommends using the mean and 95th percentile 8-hour breathing rates based on moderate intensity activity of 16<30 year-olds for 3rd trimester.
[b] Breathing rates in the table may be used for worker, school, or residential exposures

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Table 5.9. METS Distributions for Workplace and Home Activities

Activity Description	Mean	Median	SD	Min	Max
Workplace Activities					
Administrative office work	1.7	1.7	0.3	1.4	2.7
Sales work	2.9	2.7	1.0	1.2	5.6
Professional	2.9	2.7	1.0	1.2	5.6
Precision/production/craft/repair	3.3	3.3	0.4	2.5	4.5
Technicians	3.3	3.3	0.4	2.5	4.5
Private household work	3.6	3.5	0.8	2.5	6.0
Service	5.2	5.3	1.4	1.6	8.4
Machinists	5.3	5.3	0.7	4.0	6.5
Farming activities	7.5	7.0	3.0	3.6	17.0
Work breaks	1.8	1.8	0.4	1.0	2.5
Household/Neighborhood Activities					
Sleep or nap	0.9	0.9	0.1	0.8	1.1
Watch TV	1.0	1.0	-	1.0	1.0
General reading	1.3	1.3	0.2	1.0	1.6
Eat	1.8	1.8	0.1	1.5	2.0
Do homework	1.8	1.8	-	1.8	1.8
General personal needs and care	2.0	2.0	0.6	1.0	3.0
Indoor chores	3.4	3.0	1.4	2.0	5.0
Care of plants	3.5	3.5	0.9	2.0	5.0
Clean house	4.1	3.5	1.9	2.2	5.0
Home repairs	4.7	4.5	0.7	4.0	6.0
General household chores	4.7	4.6	1.3	1.5	8.0
Outdoor chores	5.0	5.0	1.0	2.0	7.0
Walk/bike/jog (not in transit) age 20	5.8	5.5	1.8	1.8	11.3
Walk/bike/jog (not in transit) age 30	5.7	5.7	1.2	2.1	9.3
Walk/bike/jog (not in transit) age 40	4.7	4.7	1.8	2.3	7.1

Table 5.10 lists some WAFs for a few typical scenarios. For example, if the source is continuously emitting, then the offsite worker is assumed to breathe the long-term annual average concentration during their work shift. The WAF then becomes one and no concentration adjustments are necessary in this situation when estimating the inhalation cancer risk. If the source is non-continuously emitting for 8 hours/day, 5 days/week and the offsite worker's shift completely overlaps the emitting facility's operating schedule, then the WAF would be 4.2:

(24 hrs/day / 8 hrs/day) x (7 days/week / 5 days/week) = 4.2

If the offsite worker's 8 hour/day shift only overlaps the emitting facility's operation schedule for 4 hrs/day, then the WAF is 2.1 because the DF = 0.5 will reduce the WAF by half: DF = (4 hrs/day / 8 hrs/day) x (5 days/week / 5 days/week) = 0.5

Table 5.10: Example Worker Adjustment Factors (WAF) to Convert a Long-Term Daily Average Emission Concentration to an Off-Site Worker Receptor Exposure

Off-Site Workers' Shift Overlap with Facility's Emission Schedule[a]	Facility Operating Schedule	Adjustment Factor
8 hrs/day, 5 days/week	Continuous (24 hrs/7 days/week)	1.0
8 hrs/day, 5 days/week[b]	Non-continuous (8 hrs/5 days/week)	4.2
4 hrs/day, 5 days/week	Non-continuous (8 hrs/5 days/week)	2.1

[a] Worker works 8 hours per day, 5 days per week
[b] Workers' work hours completely overlap the facilities operating hours

5.4.1.3 Inhalation Dose for Children at Schools and Daycare Facilities for Cancer Risk Assessment

The 8-hour breathing rates and inhalation dose equations (EQ 5.4.1.2 A-C) may also be used to estimate risk to children when exposures occur while at school or at day care facilities. Breathing rate point estimates to use in Table 5.8 depend on the ages of the children at the exposed schools and day cares. As a Tier 1 default, moderate intensity breathing rates are recommended. Equations 5.4.1.2 A-C is used in the same way to estimate dose in children as it is for workers.

5.4.1.4 Non-Cancer Inhalation Exposure for Workers and Residents

For typical daily work shifts of 8-9 hours, acute, 8-hour and chronic Reference Exposure Levels (RELs) described in Chapter 8 are used in health risk assessments to characterize the noncancer risks using the Hazard Index approach described in Chapter 8 and in OEHHA (2008). Uncertainty factors are already incorporated into the RELs used to assess noncancer risk, as explained in Chapter 8, so all that is needed to evaluate the noncancer hazard is the air concentration that the worker is exposed to. The modeled maximum 1-hour air concentration is determined for acute hazard assessment and the annual average air concentration is determined for chronic hazard assessment. The modeled average air concentration during a work shift is determined for 8-hour hazard assessment using the adjusted annual average air concentration described below.

The 8-hour RELs are primarily designed to address offsite worker inhalation exposure at the MEIW because they better characterize the daily intermittent exposures of workers than the chronic RELs do. They are used in estimating the 8 hour Hazard Index for offsite workers. The 8-hour RELs should be used for typical daily work shifts of 8-9 hours. For further questions, assessors should contact OEHHA, the District, or reviewing authority to determine if the 8-hour RELs should be used in your HRA. Any discussions or directions to exclude the 8-hour REL evaluation should be documented in the HRA.

Note, however, there are only a handful of 8-hour RELs currently adopted for use in the Hot Spots program. Therefore, we also recommend performing chronic noncancer exposure assessment for the offsite worker (MEIW) based on the annual average air concentration at the MEIW. Evaluation of the chronic Hazard Index should help protect workers who routinely work longer than 8 hour shifts. Exposure to multipathway substances also requires noncancer hazard assessment for the dermal and oral soil exposure pathways for offsite workers. Because there are few 8-hour RELs currently available, hazard assessment for the noninhalation pathways for multipathway substances is only applied when estimating the chronic Hazard Index.

In addition, the Districts may wish to determine if there is an onsite daycare at the MEIW and include a calculation of the chronic and 8-hour inhalation dose for children, although onsite hazard assessment is not a requirement for a Hot Spots risk assessment.

As explained in Section 5.4.1.2 for cancer risk, the modeled annual average air concentration is adjusted to the air concentration that the worker is actually exposed to if the facility operates non-continuously. The typical method for this adjustment is by calculating the Worker Adjustment Factor (WAF) shown in EQ 5.4.1.4 B and multiplying this value by the annual average air concentration (C_{air}, in $\mu g/m^3$) in EQ 5.4.1.4 A.

Unlike cancer risk assessment, no discount factor (DF) is applied in noncancer assessment for partial overlap between the worker's schedule and the source's emission schedule. Adjustments for worker vacations, work shifts for shortened weeks (e.g., 1 - 4 days), and worker time away on weekends are also not appropriate.

An alternative refined post-processing method, described in Appendix M, may be used to estimate the air concentration the worker is exposed to during their work schedule. OEHHA may be consulted about the particular chemical involved if it is important to make a more refined analysis.

The equation to adjust the annual average air concentration to a worker 8-hour exposure concentration (i.e., the adjusted annual average ground level concentration) is expressed as:

A. Equation 5.4.1.4 A: $$\text{Adjusted } C_{air} (\mu g/m^3) = C_{air} \times WAF$$

Where WAF is determined as:

B. Equation 5.4.1.4 B: $$WAF = (H_{res} / H_{source}) \times (D_{res} / D_{source})$$

a: Assumptions for EQ 5.4.1.4 B:

1. No adjustment of the WAF allowed for partial overlap of the worker's schedule and the source's emission schedule.

Alternatives for calculating off-site worker Adjusted C_{air} in EQ 5.4.1.4 A-B:

1. Rather than calculate the WAF for a non-continuous emitting facility, a post-processing of the hourly raw dispersion model output and examination of the hourly concentrations that fall within the offsite worker's shift can be conducted to estimate the air concentration the worker is exposed to. This method is a more refined, complex, and time consuming approach, but should result in a more representative exposure concentration. See Appendix M for information on how to simulate the exposure concentration for the off-site worker.
2. For continuously-emitting facilities (i.e., 24 hrs/day, 7 days/week), if an assessor does not wish to assume the worker breathes the long-term annual average concentration during the work shift, then a refined concentration can also be post-processed as described in Appendix M. All alternative assumptions should be approved by the reviewing authority and supported in the presentation of results.

For residential exposure to non-continuously operating facilities, the modeled maximum 1-hour and chronic air concentrations at the MEIR are determined for noncancer hazard assessment. Hazard assessment for repeated 8-hour exposure at the MEIR is not required. Chronic exposure assessment based on the annual average air concentration should adequately protect individuals, in part because residents are considered to be present at the MEIR at or near 24 hrs per day. Many facilities operate for periods longer than 8 hours per day and the hazards are better characterized based on chronic exposure. Nevertheless, differences between 8-hour and chronic exposures (i.e., higher daily 8-hour exposures vs. lower longer daily exposure 24 hrs/day) may result in different toxicological responses including potentially greater toxicological responses with either 8-hour or chronic exposure. There may also be cases such as special meteorological situations (e.g., significant diurnal-nocturnal meteorological differences) where the 8-hour REL will be more protective than the chronic REL. Thus, the air districts may also elect to have an 8-hour hazard assessment performed at the MEIR, using daily 8 hour exposures and the 8 hr RELs.

Eight-hour exposure assessment is not recommended for continuously emitting sources for residential receptors. In this situation it is only necessary to estimate chronic exposure based on the annual average concentration. However, there may be situations where the air district may wish to assess an 8-hour residential exposure to continuously operating facilities, for example, where there are significant differences in modeled concentration of emissions during the day due to diurnal wind patterns.

For estimating the air concentration from non-continuously operating facilities, EQ 5.4.1.4.A is also used to adjust the annual average concentration to what the residents are exposed to. This is the air concentration that the 8-hour REL will be compared to as discussed in Chapter 8. The alternative refined post-processing method described in Appendix M may also be used to estimate residential exposure.

In summary, the requirements for noncancer hazard assessment using the Hazard Index approach at the MEIW and MEIR are as follows.

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For offsite worker exposure:

- Acute hazard assessment based on the maximum 1-hour air concentrations and 1-hour RELs
- Eight-hour hazard assessment based on daily average 8-hour exposure (estimated using adjusted annual average air concentration in EQ 5.4.1.4 A and B or by post-processing method in App. M) for those substances with 8-hour RELs
- Chronic hazard assessment based on annual average exposure and chronic RELs, and oral chronic RELs for noninhalation routes of multipathway substances

For residential exposure:

- Acute hazard assessment based on the maximum 1-hour air concentration and 1-hour RELs
- Eight-hour hazard assessment based on daily average 8-hour exposure not required, but can be performed at the discretion of the air districts for exposure to non-continuously operating facilities based on the adjusted annual average air concentration (EQ 5.4.1.4 A and B or method in App. M). Eight-hour assessments not recommended for exposure to continuously operating facilities
- Chronic hazard assessment based on annual average exposure and chronic RELs, and oral chronic RELs for noninhalation routes of multipathway substances

5.4.1.5 Exposure Frequency and Age Groupings for Noncancer Hazard Assessment

For cancer risk, the basic assumption is that risk is associated with cumulative dose of carcinogen. Thus, the dose used to estimate cancer risk can be adjusted for exposure frequency, as well as time spent within the MEIR or MEIW location. Chronic RELs are not necessarily related to cumulative dose. Thus, adjusting the estimated dose used to calculate hazard index for exposure frequency or time away from the MEIR or MEIW is not appropriate.

The average daily dose for chronic noncancer assessment is based on exposure beginning at birth to 70 years of age, necessitating calculation of a time-weighted average for age 0-2, 2-16 and 16-70 years. Since we are not applying Age Sensitivity Factors for assessing non-cancer hazard, the 3rd trimester is not explicitly called out for determining dose, as it is for cancer risk assessment. Rather adult exposure is considered, which would include pregnant women in any trimester. Both inhalation and oral RELs incorporate safety factors to protect sensitive human populations.

5.4.2 *Estimation of Exposure through Dermal Absorption*

Exposure through dermal absorption (dose-dermal) is a function of the soil or dust loading of the exposed skin surface, the amount of skin surface area exposed, and the concentration and availability of the substance. In the previous edition of OEHHA's

exposure guidelines document (OEHHA, 2000), we recommended using specified average and high-end point estimate values for four of the variates (body weight, exposed surface area of skin, soil load on skin and frequency of exposure) in the stochastic analysis for dermal dose. This equation required multiplying values together, which could lead to overly conservative exposure estimates when high-end values were used. By combining information from the four variates into one composite distribution, over-conservatism may be avoided.

To this end, OEHHA created a new variate, "annual dermal load", or ADL, which is a composite of the body surface area (BSA) per kg body weight, exposure frequency, and soil adherence variates. Point estimates from the composite "annual dermal load" can be used for point estimate assessments while parameters and information on the type of distribution (e.g., lognormal) can be used for Tier III stochastic risk assessments. For details on the development of the ADL, refer to the Technical Support Document for Exposure and Stochastic Analysis (OEHHA, 2012).

5.4.2.1 Dermal Dose for Cancer Risk Assessment

The dose through residential dermal exposure to contaminated soil varies by age and is calculated for each age group (e.g., 3rd trimester, 0<2 yrs, 2<9 yrs, 2<16 yrs, 16<30 and 16-70 yrs). These age-specific groupings are needed in order to properly use the age sensitivity factors for cancer risk assessment (see Chapter 8). This pathway is also assessed for exposure to offsite workers; a separate ADL for offsite workers is presented in Table 5.11. Children at a MEIW daycare, if present, may also be assessed for exposure if the District deems it advisable.

A. Equation 5.4.2.1: $\mathbf{Dose_{dermal} = ADL \times Cs \times ABS \times 10^{-9} / 365}$

1. $Dose_{dermal}$ = Exposure dose through dermal absorption (mg/kg-d)
2. ADL = Annual dermal load (mg soil/kg BW-yr)
3. C_s = Average soil concentration (μg/kg)
4. ABS = Fraction absorbed across skin (unitless)
5. 10^{-9} = Conversion factor for chemical & soil (μg to mg, mg to kg)
6. 1/365 = Conversion factor for ADL from yrs to days

a: Recommended default values for EQ 5.4.2.1:

1. ADL = See Table 5.11 (point estimates) & Table 5.12 a-d (distributions)
2. C_s = Calculated above in EQ 5.3.2 A
3. ABS = See Table 5.13

b: Assumption for EQ 5.4.2.1:

1. The ADL for the third trimester of the fetus is based on the ADL of the mother; when normalized to body weight, we assume that exposure to the mother and the fetus will be the same. The mother's exposure is based on that of adults 16-30 years of age in Table 5.11 and 5.12d.
2. Exposure frequency (EF) for vacation time spent away from exposure does not appear as a variate in EQ 5.4.2.1, as it is incorporated in the ADL and includes a 2-week vacation per year away from dermal soil exposure for both residents and offsite workers.

Climate will strongly influence people's choice of clothing. Due to California's varied climatic regions and existing data on clothing choices at different temperatures, three levels of climatic conditions, warm, mixed, and cold, are used to describe California's climate regions:

1. A warm climate is characteristic of Southern California areas such as Los Angeles, which can have warm to hot temperatures throughout the year.
2. A "mixed" climate is one that has warm-to-hot temperatures during much of the year (daily highs over 80 degrees are common), roughly from April to October, and cold temperatures (lows near or below freezing) during the remainder of the year. The mountains and central valley are examples of a mixed climate.
3. A cold climate is representative of San Francisco, Eureka, and other northern coastal communities, which have cool temperatures (daily highs of less than 65 degrees) for the majority of the year and can receive a considerable amount of fog and rainfall.

OEHHA recommends consulting the local air district for assistance on selecting the most appropriate climate.

Table 5.11 Recommended Annual Dermal Load Point Estimates (in mg/kg-yr) for Dermal Exposure

	3rd Trimester[a]	Children 0<2 yrs	Children 2<9 yrs	Children 2<16 yrs	Adults[b]	Offsite Worker[c]
Warm climate						
Mean	1.2×10^3	3.6×10^3	7.5×10^3	6.4×10^3	1.2×10^3	2.6×10^3
95th percentile	2.6×10^3	4.3×10^3	9.1×10^3	8.5×10^3	2.6×10^3	5.0×10^3
Mixed climate						
Mean	1.1×10^3	2.2×10^3	6.6×10^3	5.7×10^3	1.1×10^3	2.6×10^3
95th percentile	2.4×10^3	2.9×10^3	8.7×10^3	8.1×10^3	2.4×10^3	5.0×10^3
Cold climate						
Mean	0.7×10^3	1.2×10^3	3.1×10^3	2.8×10^3	0.7×10^3	2.6×10^3
95th percentile	2.1×10^3	1.9×10^3	5.2×10^3	5.1×10^3	2.1×10^3	5.0×10^3

[a] The ADL for the 3rd trimester of the fetus is based on the ADL of the mother; when normalized to body weight, we assume that exposure to the mother and the fetus will be the same
[b] Residential adult ADLs are for both 16<30 and 16-70 year age groups
[c] Assumes exposure only to face, hands and forearms regardless of climate region

Tables 5.12a - d Annual Dermal Load Distributions by Age Group and Climate for Stochastic Analysis

Table 5.12a Annual Dermal Load (mg/kg-yr) Distributions for the 0<2 Year Age Group

Climate Type	Warm climate	Mixed climate	Cold climate
Distribution	Student's t	Logistic	Triangular
Minimum			0.2×10^3
Likeliest			0.7×10^3
Maximum			2.6×10^3
Scale	0.41	0.28	
Deg. freedom	3		
Midpoint	3.6×10^3		
Mean	3.6×10^3	2.2×10^3	1.2×10^3
50th percentile	3.6×10^3	2.2×10^3	0.9×10^3
90th percentile	4.1×10^3	2.8×10^3	1.9×10^3
95th percentile	4.3×10^3	2.9×10^3	1.9×10^3
99th percentile	4.7×10^3	3.1×10^3	2.1×10^3

Table 5.12b Annual Dermal Load (mg/kg-yr) Distributions for the 2<9 Year Age Group

Climate Type	Warm climate	Mixed climate	Cold climate
Distribution	Min extreme	Min extreme	Triangular
Minimum			0.4×10^3
Likeliest	8.0×10^3	7.3×10^3	1.9×10^3
Maximum			6.9×10^3
Scale	0.1	1.3	
Mean	7.5×10^3	6.6×10^3	3.1×10^3
50th percentile	7.7×10^3	6.5×10^3	2.3×10^3
90th percentile	8.7×10^3	8.4×10^3	5.1×10^3
95th percentile	9.1×10^3	8.7×10^3	5.2×10^3
99th percentile	9.7×10^3	9.4×10^3	5.7×10^3

Table 5.12c Annual Dermal Load (mg/kg-yr) Distributions for the 2<16 Year Age Group

Climate Type	Warm climate	Mixed climate	Cold climate
Distribution	Min extreme	Logistic	Triangular
Minimum			0.3×10^3
Likeliest	7.2×10^3		1.6×10^3
Maximum			6.9×10^3
Scale	1.29	0.91	
Mean	6.4×10^3	5.7×10^3	2.8×10^3
50th percentile	6.6×10^3	5.7×10^3	2.2×10^3
90th percentile	8.1×10^3	7.7×10^3	4.8×10^3
95th percentile	8.5×10^3	8.1×10^3	5.1×10^3
99th percentile	9.3×10^3	8.9×10^3	5.6×10^3

Table 5.12d Annual Dermal Load (mg/kg-yr) Distributions for Residential Adults (Age 16-30 and 16-70 Years)[a] and Offsite Workers

Receptor	Residential Adult			Offsite Worker
Climate Type	Warm	Mixed	Cold	All Climates[b]
Distribution	Beta	Beta	Gamma	Lognormal
Minimum	0.2×10^3	0.02×10^3		
Maximum	3.3×10^3	0.3×10^3		
Scale			0.07	
Mean	1.2×10^3	1.1×10^3	0.7×10^3	2.6×10^3
50th percentile	1.2×10^3	1.0×10^3	0.5×10^3	2.3×10^3
90th percentile	2.4×10^3	2.1×10^3	1.6×10^3	4.5×10^3
95th percentile	2.6×10^3	2.4×10^3	2.1×10^3	5.0×10^3
99th percentile	2.9×10^3	2.6×10^3	2.3×10^3	6.4×10^3

[a] The ADL distribution for the 3rd trimester is based on the ADL distribution of the mother; we assume the same ADL distribution for residential adult (the mother) and the fetus
[b] Face, hands and forearms are exposed only, regardless of climate

Table 5.13 Dermal Absorption Fraction Factors (ABS) as Percent from Soil for Semi-Volatile and Solid Chemicals under the OEHHA "Hot Spots" Program

Chemical	ABS
Inorganic chemicals	
Arsenic	6
Beryllium	3
Cadmium	0.2
Chromium (VI)	2
Fluorides (soluble compounds)	3
Lead	3
Mercury	4
Nickel	2
Selenium	3
Organic chemicals	
Creosotes	13
Diethylhexylphthalate	9
Hexachlorobenzene	4
Hexachlorocyclohexanes	3
4,4'methylene dianiline	10
Pentachlorophenol	[a]
Polychlorinated biphenyls	14
Polychlorinated dibenzo-p-dioxins and dibenzofurans	3
Polycyclic aromatic hydrocarbons	13

[a] To be determined in future amendments to the Hot Spots Program

Skin permeability is related to the solubility or strength of binding of the chemical in the delivery matrix (soil or other particles) versus the receptor matrix, the skin's stratum corneum. Fractional dermal absorption point estimate values were derived by OEHHA from available literature sources for the semi-volatile and nonvolatile chemicals in the "Hot Spots" program. The rationale for the chemical-specific dermal absorption fraction values, and the use of default values in cases where sufficient data are lacking, can be found in Appendix F of the Technical Support Document for Exposure and Stochastic Analysis (OEHHA, 2012).

5.4.2.2 Chronic Noncancer Dermal Dose

Dermal exposure, and thus annual dermal load (ADL), varies by age group. Therefore, a time-weighted average ADL for age 0-70 years (0-2, 2-16, and 16-70 years) is estimated for chronic residential exposure using ADL values in Table 5.12. This exposure pathway is also assessed for offsite workers using the offsite worker ADL values in Table 5.12d. Children at a MEIW daycare, if present, may also be assessed for exposure if the District deems it advisable. The contribution to the dermal dose is determined for each age group in EQ 5.4.2.2:

A. Equation 5.4.2.2: $\mathbf{Dose_{dermal} = ADL \times Cs \times ABS \times 10^{-9} \times ED/AT \times (1/350)}$

1. $Dose_{dermal}$ = Exposure dose through dermal absorption (mg/kg/d)
2. ADL = Annual dermal load (mg/kg-yr), age-specific
3. Cs = Average soil concentration (µg/kg)
4. ABS = Fraction absorbed across skin (unitless)
5. 10^{-9} = Conversion factor for chemical & soil (µg to mg, mg to kg)
6. 1/350 = Conversion factor for ADL from yrs to days (Note: this conversion is needed to remove EF, expressed as 350 days/365 days, from the ADLs in Table 5.12a-d)
7. ED = Exposure duration for specified age groups: 2 yrs for 0<2, 14 yrs for 2<16, 54 yrs for 16-70 for residential exposure,
8. AT = Averaging time for residential exposure – 70 yrs

a: Recommended default values for EQ 5.4.2.2:

1. ADL = See Table 5.11 for point estimates by age group, climate region and receptor type (resident or worker)
2. Cs = Calculated above in EQ 5.3.2 A
3. ABS = See Table 5.13

b: Recommended off-site worker default modifications to EQ 5.4.2.2:

1. Chronic dermal dose to the off-site worker assumes only adult exposure and is incorporated into the off-site worker ADL in Table 5.12d.
2. A time-weighted average estimate of dose is not necessary and the ED and AT variates are left out of EQ 5.4.2.2 for dermal dose to the worker.

c: Recommended nursing mother default modifications to EQ 5.4.2.2:

1. For dermal dose to mother's milk, use the ADL for age 16-30 years in Table 5.12d.
2. The ED and AT variates in EQ 5.4.2.2 are left out for dermal dose in the mother's milk pathway.

d: Assumptions for EQ 5.4.2.2:

1. For cancer risk assessment, Exposure Frequency (EF) for vacation time away from exposure is incorporated into the ADLs shown in Tables 5.11 and 5.12 using the basic assumption that cancer risk is associated with cumulative dose of carcinogen. The dose used to estimate cancer risk can be adjusted for EF, and for time spent within the MEIR or MEIW location. Chronic RELs are not necessarily related to cumulative dose. Thus, adjusting the estimated dose for EF at the MEIR or MEIW is not appropriate, and the unadjusted daily rate is used in EQ 5.4.2.2.
2. For worker exposure, the annual average concentration should not be adjusted to account for worker and facility emission schedules, as done for

inhalation cancer risk assessment. The pollutant will be deposited and accumulate in the soil in the absence or presence of the worker; therefore, the total deposition and soil concentration will be dependent on the annual average air concentration.

For residential chronic exposure, the dermal dose contribution for each age group is summed together to obtain the time-weighted average daily dermal dose for chronic hazard assessment:

(ADL age 0<2 × Cs × ABS × 10^{-9} × 2 / 70 × (1/350)) +

(ADL age 2<16 × Cs × ABS × 10^{-9} × 14 / 70 × (1/350)) +

(ADL age 16-70 × Cs × ABS × 10^{-9} × 54 / 70 × (1/350)) = Chronic $Dose_{dermal}$

5.4.3 *Estimation of Exposure through Ingestion*

Exposure through ingestion is a function of the concentration of the substance in the ingested soil, water, and food, the gastrointestinal absorption of the substance, and the amount ingested.

5.4.3.1 Exposure through Ingestion of Soil

There are no distributions for soil ingestion currently recommended. Tier III stochastic risk assessments should include a high-end point estimate of soil ingestion, soil loading, exposure frequency and soil area.

5.4.3.1.1 Soil Ingestion Dose for Cancer Risk

The exposure dose through residential soil ingestion varies by age and is calculated for each age group ((e.g., 3rd trimester, 0<2 yrs, 2<9 yrs, 2<16 yrs, 16<30 and 16-70 yrs). These age-specific groupings are needed in order to properly use the age sensitivity factors for cancer risk assessment (see Chapter 8). This pathway is also assessed for exposure to off-site workers. Children at a MEIW daycare, if present, may also be assessed for exposure if the District deems it advisable. The dose from inadvertent soil ingestion can be estimated by the point estimate approach using the following general equation:

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A. Equation 5.4.3.1.1: **$DOSE_{soil} = C_{soil} \times GRAF \times SIR \times 10^{-9} \times EF$**

1. $DOSE_{soil}$ = Dose from soil ingestion (mg/kg BW-day)
2. 10^{-9} = Conversion factor (μg to mg, mg to kg)
3. C_{soil} = Concentration of contaminant in soil (μg/kg)
4. GRAF = Gastrointestinal relative absorption fraction, chemical-specific (unitless)
5. SIR = Soil ingestion rate (mg/kg BW-day)
6. EF = Exposure frequency (unitless), (days/365 days)

a: Recommended default values for EQ 5.4.3.1.1:

1. C_{soil} = Calculated above in EQ 5.3.2 A
2. GRAF = See Table 5.2
3. SIR = See Table 5.14
4. EF = 350 d/year resident, 250 d/year worker

In this approach, it is assumed that the soil ingested contains a representative concentration of the contaminant(s) and the concentration is constant over the exposure period.

The term **GRAF**, or gastrointestinal relative absorption factor, is defined as the fraction of contaminant absorbed by the GI tract relative to the fraction of contaminant absorbed from the matrix (feed, water, other) used in the study(ies) that is the basis of either the cancer potency factor (CPF) or the Reference Exposure Level (REL). If no data are available to distinguish absorption in the toxicity study from absorption from the environmental matrix in question (i.e., soil), then GRAF = 1. The GRAF allows for adjustment for absorption from a soil matrix if it is known to be different from absorption across the GI tract in the study used to calculate the CPF or REL. In most instances, the GRAF will be 1.

Table 5.14 Recommended Soil Ingestion Rate (SIR) Estimates for Adults and Children (mg/kg-day)*

Age Groups (years)	Mean (mg/kg-day)	95th % (mg/kg-day)
3rd Trimester[a]	0.7	3
0<2	20	40
2<9	5	20
2<16	3	10
16<30	0.7	3
16 to 70	0.6	3
PICA adult	NR	-

[a] Assumed to be the mother's soil ingestion rate (adult age 16 <30)
* Soil includes outdoor settled dust
NR = No recommendation

5.4.3.1.2 Chronic Noncancer Dose for Soil Ingestion

The soil ingestion rate varies by age. A time-weighted average approach is used to combine soil intake rates of the age groupings (i.e., 0<2 yrs, 2<16 yrs, and 16-70 yrs) to determine the residential soil ingestion dose for chronic noncancer hazard assessment. This pathway is also assessed for exposure to offsite workers using the adult intake values for age 16-70 years in Table 5.14. Children at a MEIW daycare, if present, may also be assessed for exposure if the District deems it advisable. The contribution to the soil ingestion dose by each age group is determined in EQ 5.4.3.1.2:

A. Equation 5.4.3.1.2: $\mathbf{DOSE_{soil} = C_{soil} \times GRAF \times SIR \times 10^{-9} \times ED/AT}$

1. $DOSE_{soil}$ = Dose from soil ingestion (mg/kg BW-day)
2. 10^{-9} = Conversion factor (μg to mg, mg to kg)
3. C_{soil} = Concentration of contaminant in soil (μg/kg)
4. GRAF = Gastrointestinal relative absorption fraction, unitless; chemical-specific
5. SIR = Soil ingestion rate (mg/kg BW-day)
6. ED = Exposure duration for a specified age group: 2 yrs for 0<2, 14 yrs for 2<16, 54 yrs for 16-70
7. AT = Averaging time for lifetime exposure – 70 yrs

a: Recommended default values for EQ 5.4.3.1.2:

1. C_{soil} = Calculated above in EQ 5.3.2 A
2. GRAF = See Table 5.2
3. SIR = See Table 5.14; use 16-70 age group SIR for workers

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b: Recommended off-site worker default modifications to EQ 5.4.3.1.2:

1. A time-weighted average estimate of dose is not necessary and the ED and AT variates are left out of EQ 5.4.3.1.2 for oral soil dose to the worker.

c: Recommended nursing mother default modifications to EQ 5.4.3.1.2:

1. For mother's ingested soil dose to milk, use the SIR for age 16-30 years in Table 5.14.
2. The ED and AT variates in EQ 5.4.3.1.2 are left out for soil ingestion dose in the mother's milk pathway.

d: Assumptions for EQ 5.4.3.1.2:

1. For worker exposure, the annual average concentration should not be adjusted to account for overlap of worker and facility emission schedules. The pollutant will be deposited and accumulate in the soil in the absence or presence of the worker; therefore, the total deposition and soil concentration will be dependent on the annual average air concentration.

For residential exposure, the soil ingestion dose contribution for each age group is summed together to obtain the time-weighted average daily soil intake dose for chronic hazard assessment:

(SIR for age 0<2 yrs × C_{soil} × GRAF × 10^{-9} × 2 / 70) +

(SIR for age 2<16 yrs × C_{soil} × GRAF × 10^{-9} × 14 / 70) +

(SIR for age 16-70 yrs × C_{soil} × GRAF × 10^{-9} × 54 / 70) = Chronic $Dose_{soil}$

5.4.3.2 Exposure through Ingestion of Food

The exposure through food ingestion can be through ingestion of home-grown plant products (categorized as leafy, protected, exposed and root produce), home-raised animals (categorized as meat, cow's milk and eggs), angler-caught fish and mother's milk. When a specific food pathway is a dominant pathway (e.g., homegrown produce), and multiple pathways such as home raised meat, milk, and eggs categories all need to be assessed, the 95th percentile default consumption rate for the driving exposure pathway is used, while the mean consumption values for the remaining exposure pathways (i.e., food categories) are used. See Section 8.2.6 for a complete discussion of the methodology on how to implement the derived methodology.

5.4.3.2.1 Dose for Cancer Risk from Home-Grown Produce

Exposure through ingesting home-grown produce (DOSEp) is a function of the type of crop (i.e., exposed, leafy, protected, root), gastrointestinal relative absorption factor, bioavailability and the fraction of plant ingested that is homegrown. The calculation is done for each type of crop, then summed to get total dose for this pathway. The

exposure dose through ingestion of home-grown produce varies by age and is calculated for each age group (e.g., 3rd trimester, 0<2 yrs, 2<9 yrs, 2<16 yrs, 16<30 and 16-70 yrs). These age-specific groupings are needed in order to properly use the age sensitivity factors for cancer risk assessment (see Chapter 8).

A. Equation 5.4.3.2.1: $DOSEp = C_v \times IP \times GRAF \times L \times EF \times 10^{-6}$

1. DOSEp = Exposure dose through ingestion of home-grown produce (mg/kg/d)
2. C_v = Concentration in specific type of crop, i.e., exposed, leafy, protected, root (μg/kg)
3. IP = Consumption of specific type of crop (g/kg BW*day)
4. GRAF = Gastrointestinal relative absorption factor (unitless)
5. L = Fraction of plant type consumed that is home-grown or locally grown (unitless)
6. EF = Exposure frequency (unitless, days/365 days)
7. 10^{-6} = Conversion factors (μg/kg to mg/g)

a: Recommended default values for Equation 5.4.3.2.1:

1. C_v = Calculated above in EQ 5.3.4.1 A
2. IP = See Table 5.15 (point estimates) and 5.16a-e (distributions)
3. GRAF = See Table 5.2
4. L = Site-specific survey is recommended. Otherwise, see Table 5.17 for Tier I default values
5. EF = 0.96 (350 d/365 d in a yr)

Once the dose for each type of crop that applies is calculated (See Section 5.3.4.1 for definition of crops types), the doses are summed to get the total dose for the home-grown produce pathway:

Total DOSEp = DOSEp (leafy) + DOSEp (root) + DOSEp (exposed) + DOSEp (protected)

The total home-grown produce dose will need to be calculated for each age group that applies.

5.4.3.2.2 Dose for cancer risk from home-raised meat, eggs, and cow's milk

Exposure through ingesting home-raised or farm animal products ($DOSE_{fa}$) is a function of the type of food (meat, eggs and cow's milk), gastrointestinal relative absorption factor, bioavailability and the fraction of food ingested that is home-raised. The only meat sources considered here are beef, pork and poultry. Unlike the home-grown produce pathway, the dose is calculated and presented separately for each type of home-raised food. The age-specific groupings to determine dose (3rd trimester, 0<2 yrs, 2<9 yrs, 2<16 yrs, 16<30 yrs or 16-70 yrs) is needed in order to properly use the age sensitivity factors for cancer risk assessment (see Chapter 8).

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A. Equation 5.4.3.2.2: $DOSE_{fa} = C_{fa} \times I_{fa} \times GRAF \times L \times EF \times 10^{-6}$

1. $DOSE_{fa}$ = Exposure dose through ingestion of home-raised animal product (mg/kg/d)
2. C_{fa} = Concentration in animal product, e.g., beef, pork, poultry, dairy, eggs (μg/kg)
3. I_{fa} = Consumption of animal product (g/kg BW-day)
4. GRAF = Gastrointestinal relative absorption factor (unitless)
5. L = Fraction of animal product consumed that is home-raised or locally produced (unitless)
6. EF = Exposure frequency (unitless, days/365 days)
7. 10^{-6} = Conversion factors (μg/kg to mg/g)

a: Recommended default values for EQ 5.4.3.2.2:

1. C_{fa} = Calculated above in EQ 5.3.4.2 A
2. I_{fa} = See Table 5.15 (point estimates) and Table 5.16a-e (distributions)
3. GRAF = See Table 5.2
4. L = Site-specific survey is recommended. Otherwise, see Table 5.17 for Tier I default values
5. EF = 0.96 (350 days / 365 days in a year)

5.4.3.2.3 Chronic Noncancer Dose for Ingestion of Food

For oral noncancer hazard assessment, a time-weighted average approach is used to combine food ingestion rates for the age groups (i.e., 0<2, 2<16 and 16-70 yrs) to estimate the chronic dose for residential exposure. The equation used to estimate dose through home-grown produce and home-raised meat/eggs/cow's milk is similar and is shown below in one equation. Similar to the cancer risk dose calculation, home-grown produce is presented as a total dose for all types of crops (See Section 5.4.3.2.1) and home-raised animal product dose is presented separately for each type of animal product that applies (See Section 5.4.3.2.2).

The contribution to the food intake dose is determined for each age group in EQ 5.4.3.2.3:

A. Equation 5.4.3.2.3: $DOSE_{food} = C_{food} \times I_{food} \times GRAF \times L \times 10^{-6} \times ED/AT$

1. $DOSE_{food}$ = Exposure dose through ingestion of home-grown produce or home-raised animal product (mg/kg/d)
2. C_{food} = Concentration (μg/kg) in produce (e.g., exposed, leafy, protected, root) or animal product (e.g., beef, pork, poultry, dairy, eggs)
3. I_{food} = Consumption of produce or animal product (g/kg BW-day)
4. GRAF = Gastrointestinal relative absorption factor (unitless)
5. L = Fraction of produce or animal product consumed that is home-grown (unitless)
6. 10^{-6} = Conversion factors (μg/kg to mg/g)
7. ED = Exposure duration for a specified age group (2 yrs for 0<2, 14 yrs for 2<16, 54 yrs for 16-70
8. AT = Averaging time for lifetime exposure: 70 yrs

a: Recommended default values for EQ 5.4.3.2.3:

1. C_{food} = Calculated above in EQ 5.3.4.1 A (for home-grown produce) or EQ 5.3.4.2 A (for home-raised animal products)
2. I_{food} = Age-specific, see Table 5.15 for point estimates
3. GRAF = See Table 5.2
4. L = Site-specific survey is recommended. Otherwise, see Table 5.17 for Tier I default values

b: Recommended nursing mother default modifications to EQ 5.4.3.2.3:

1. For the mother's dose to milk through ingested food, use the food intake rates for age 16-30 years in Table 5.15 and 5.16d.
2. The ED and AT variates in EQ 5.4.3.2.3 are left out for ingested food dose in the mother's milk pathway.

Following calculation of the intake dose contributions for each age group, the intake rates for home-grown produce and the intake rates for home-raised animal products are summed separately to obtain the residential time-weighted average intake dose for chronic residential exposure to home-grown produce and to home-raised animal products:

(I_{food} for age 0<2 yrs × C_{food} × GRAF × L × 10^{-6} × 2 / 70) +

(I_{food} for age 2<16 yrs × C_{food} × GRAF × L × 10^{-6} × 14 / 70) +

(I_{food} for age 16-70 yrs × C_{food} × GRAF × L × 10^{-6} × 54 / 70) = Chronic $Dose_{food}$

Table 5.15 Recommended Average and High End Point Estimate Values for Home Produced Food Consumption (g/kg-day)

Food Category	Third Trimester		Ages 0<2		Ages 2<9	
Produce	Avg.	High End	Avg.	High End	Avg.	High End
Exposed	1.9	5.9	11.7	30.2	7.4	21.7
Leafy	0.9	3.2	3.8	10.8	2.5	7.9
Protected	1.7	5.8	5.9	17.5	4.7	13.3
Root	1.7	4.6	5.7	15.3	3.9	10.8
Meat						
Beef	2.0	4.8	3.9	11.3	3.5	8.6
Poultry	0.9	2.9	2.9	10.5	2.2	7.8
Pork	1.8	4.7	4.5	11.4	3.7	9.0
Milk	5.4	15.9	50.9	116	23.3	61.4
Eggs	1.6	4.2	6.1	15.0	3.9	9.4
	Ages 2>16		Ages 16<30		Ages 16-70	
Produce	Avg.	High End	Avg.	High End	Avg.	High End
Exposed	1.9	5.9	1.9	5.9	1.8	5.6
Leafy	0.9	3.2	0.9	3.2	1.1	3.4
Protected	1.7	5.8	1.7	5.8	1.6	5.2
Root	1.7	4.6	1.7	4.6	1.5	4.2
Meat						
Beef	2.0	4.8	2.0	4.8	1.7	4.4
Poultry	0.9	2.9	0.9	2.9	0.9	2.8
Pork	1.8	4.7	1.8	4.7	1.5	3.8
Milk	5.4	15.9	5.4	15.9	4.3	13.2
Eggs	1.6	4.2	1.6	4.2	1.3	3.4

[a] Food consumption values for 3rd trimester calculated by assuming that the fetus receives the same amount of contaminated food on a per kg BW basis as the mother (adult age 16 to less than 30).

Table 5.16a - e Parametric Models of Per Capita Food Consumption by Age Group for Stochastic Analysis

Table 5.16a Per Capita Food Consumption (g/kg-day) for Ages 0<2

Food Category	Distrib. Type	Anderson-Darling Statistic	Mean	Std. Dev	Location	Scale	Shape	Like-liest
Produce								
Exposed	Gamma	60			0.01	6.56	0.830	
Leafy	Gamma	167			0.01	3.30	1.161	
Protected	LogN	67	6.03	7.31				
Root	Gamma	83			0.06	4.44	1.28	
Meat								
Beef	LogN	16	1.97	1.73				
Poultry	LogN	58	4.5	4.08				
Pork	LogN	230	3.00	4.46				
Dairy	Max Ext.	169				27.82		33.79
Eggs	LogN	172	6.11	4.21				

Table 5.16b Per Capita Food Consumption (g/kg-day) for Ages 2<9

Food Category	Distribution Type	Anderson-Darling Statistic	Mean	Std. Dev	Location	Scale	Shape	Rate
Produce								
Exposed	Exponential	206						0.14
Leafy	LogN	127	2.64	3.89				
Protected	Weibull	68			0.02	4.76	1.063	
Root	LogN	60	3.95	3.85				
Meat								
Beef	LogN	35	3.55	2.79				
Poultry	LogN	17	3.71	2.67				
Pork	LogN	66	2.25	2.84				
Milk	LogN	12	23.4	20.78				
Eggs	LogN	38	3.93	3.00				

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Table 5.16c Per Capita Food Consumption (g/kg-day) for Ages 2<16

Food Category	Distribution Type	Anderson-Darling Statistic	Mean	Std. Dev	Location	Scale	Shape
Produce							
Exposed	Gamma	60			0.01	6.54	0.8325
Leafy	LogN	68	1.83	2.91			
Protected	Gamma	47			0.00	3.69	0.9729
Root	LogN	51	3.10	3.44			
Meat							
Beef	LogN	10	2.96	2.49			
Poultry	LogN	27	2.98	2.52			
Pork	LogN	48	1.84	2.79			
Milk	LogN	35	16.8	19.2			
Eggs	LogN	71	3.16	2.95			

Table 5.16d Per Capita Food Consumption (g/kg-day) for Ages 16-30[a]

Food Category	Distribution Type	Anderson-Darling Statistic	Mean	Std. Dev	Location	Scale	Shape
Produce							
Exposed	Gamma	70			0.01	2.05	0.9220
Leafy	Weibull	191			0.00	0.88	0.8732
Protected	LogN	93	1.81	3.31			
Root	LogN	43	1.69	1.69			
Meat							
Beef	LogN	26	1.98	1.54			
Poultry	LogN	26	1.80	1.42			
Pork	LogN	242	1.01	1.74			
Milk	Gamma	22			0.02	5.66	0.9421
Eggs	LogN	29	1.55	1.36			

[a] These distributions are also recommended for the third trimester. Food consumption values for 3rd trimester are calculated by assuming that the fetus receives the same amount of contaminated food on a per kg BW basis as the mother (adult age 16<30).

Table 5.16e Per Capita Food Consumption (g/kg-day) for Ages 16-70

Food Category	Distribution Type	Anderson-Darling Statistic	Mean	Std. Dev	Location	Scale	Shape
Produce							
Exposed	Gamma	148			0.01	2.07	0.8628
Leafy	Gamma	83			0.00	1.15	0.9713
Protected	Gamma	78			0.01	1.90	0.8325
Root	Gamma	14			0.00	1.28	1.166
Meat							
Beef	LogN	20	1.75	1.40			
Poultry	LogN	18	1.53	1.18			
Pork	LogN	190	0.97	1.59			
Milk	Gamma	20			0.00	4.50	0.9627
Eggs	LogN	30	1.3	1.01			

Table 5.17 Default Values for L in EQs 5.4.3.2.1., 5.4.3.2.2 and 5.4.3.2.3: Fraction of Food Intake that is Home-Produced

Food Type	Households that Garden[a]	Households that Farm[a]
Avg. Total Veg & Fruits	0.137	0.235
	Households that Garden/Hunt[b]	**Households that Farm[b]**
Beef	0.485	0.478
Pork	0.242	0.239
Poultry	0.156	0.151
Eggs	0.146	0.214
Total Dairy (Cow's milk)	0.207	0.254

[a] As a default for home-produced leafy, exposed, protected and root produce, OEHHA recommends 0.137 as the fraction of produce that is home-grown. The households that grow their own vegetables and fruits are the population of concern. In rural situations where the receptor is engaged in farming, OEHHA recommends 0.235 as the default value for fraction of leafy, exposed, protected and root produce that is home-grown.

[b] OEHHA recommends the fraction home-raised under "Households that raise animals/hunt" (for beef, pork, poultry (chicken), eggs and dairy (cow's milk), with the exception of rural household receptors engaged in farming. OEHHA recommends that the fractions listed under "Households that farm" be used for the rural household receptors.

5.4.3.3 Exposure through Ingestion of Water

Intake of drinking water varies by age on a ml per kg body weight per day basis resulting in differences in exposure dose by age. The age-specific groupings to determine dose are needed in order to properly use the age sensitivity factors for

cancer risk assessment (see Chapter 8) and to calculate a time-weighted average dose for chronic noncancer assessment.

5.4.3.3.1 Dose for Cancer Risk through Ingestion of Water

$DOSE_{water}$ is calculated for each age group (i.e., 3rd trimester, 0<2 yrs, 2<9 yrs, 2<16 yrs, 16<30 yrs and 16-70 yrs), then incorporated into EQ 8.2.5 in Chapter 8 to determine cancer risk through exposure in drinking water.

A. Equation 5.4.3.3.1: $$DOSE_{water} = C_w \times WIR \times ABS_{wa} \times Fdw \times EF \times 10^{-6}$$

1. $DOSE_{water}$ = Exposure dose through ingestion of water (mg/kg BW/d)
2. C_w = Water concentration (μg/L)
3. WIR = Water ingestion rate (ml/kg BW-day)
4. ABS_{wa} = Gastrointestinal relative absorption factor (unitless)
5. Fdw = Fraction of drinking water from contaminated source
6. EF = Exposure frequency (unitless, days/365 days)
7. 10^{-6} = Conversion factors (mg/μg)(L/ml)

a: Recommended default values for EQ 5.4.3.3.1:

1. C_w = Calculated above 5.3.3 A
2. WIR = See 5.18 (point estimates) and Table 5.19 (distributions)
3. ABS_{wa} = Default set to 1
4. Fdw = Default set to 1, although a site-specific survey is recommended for this variate
5. EF = 0.96 (350 days/365 days in a year)

5.4.3.3.2 Chronic Noncancer Dose through Ingestion of Water

Because water intake varies by age group, a time-weighted average intake approach is used to determine the daily water ingestion dose for chronic residential exposure. The contribution to the water ingestion dose is determined for each age group (i.e., 0<2, 2<16 and 16-70 yrs) in EQ 5.4.3.3.2.

A. Equation 5.4.3.3.2:

$$DOSE_{water} = C_w \times WIR \times ABS_{wa} \times Fdw \times 10^{-6} \times ED/AT$$

1. $DOSE_{water}$ = Exposure dose through ingestion of water (mg/kg BW/d)
2. C_w = Water concentration (μg/L)
3. WIR = Water ingestion rate (ml/kg BW-day)
4. ABS_{wa} = Gastrointestinal absorption factor
5. Fdw = Fraction of drinking water from contaminated source (site-specific)
6. 10^{-6} = Conversion factors (mg/μg)(L/ml)
7. ED = Exposure duration for a specified age group: 2 yrs for 0<2, 14 yrs for 2<16, 54 yrs for 16-70
8. AT = Averaging time for residential exposure: 70 yrs

a: Recommended default values for EQ 5.4.3.3.2:

1. C_w = Calculated above in 5.3.3 A
2. WIR = See 5.18 (point estimates)
3. ABS_{wa} = Default set to 1
4. Fdw = Default set to 1, although a site-specific survey is recommended for this variate

b: Recommended nursing mother default modifications to EQ 5.4.3.3.2:

1. For the dose to mother's milk through water ingestion, use the WIR for age 16-30 years in Table 5.18.
2. The ED and AT variates in EQ 5.4.3.3.2 are left out for ingested water dose in the mother's milk pathway.

The water intake dose contribution for each age group is summed together to obtain the time-weighted average daily residential water ingestion dose:

(WIR for age 0<2 yrs × C_w × ABS_{wa} × Fdw × 10^{-6} × 2 / 70) +

(WIR for age 2<16 yrs × C_w × ABS_{wa} × Fdw × 10^{-6} × 14 / 70) +

(WIR for age 16-70 yrs × C_w × ABS_{wa} × Fdw × 10^{-6} × 54 / 70) = Chronic $Dose_{water}$

Table 5.18 Recommended Point Estimate Tap Water Intake Rates (ml/kg-day)

Point Estimates				
Using Mean Values	**For the Age Period**	**9-year scenario**	**30-year scenario**	**70-year scenario**
	3rd trimester	18	18	18
	0<2 years	113	113	113
	2<9 years	26	-	-
	2<16 years	-	24	24
	16-30 years	-	18	-
	16-70 years	-	-	18
Using 95th-percentile values	**For the Age Period**	**9-year scenario**	**30-year scenario**	**70-year scenario**
	3rd trimester	47	47	47
	0<2 years	196	196	196
	2<9 years	66	-	-
	2<16 years	-	61	61
	16-30 years	-	47	-
	16-70 years	-	-	45

Table 5.19 Recommended Distributions of Tap Water Intake Rates (ml/kg-day) for Stochastic Risk Assessment

	9-year scenario	**30-year scenario**	**70-year scenario**
0<2 years	**Max Extreme** Likeliest = 93 Scale = 35	**Max Extreme** Likeliest = 93 Scale = 35	**Max Extreme** Likeliest = 93 Scale = 35
2<9 years	**Weibull** Location = 0.02 Scale = 29 Shape = 1.3		
2<16 years		**Gamma** Location = 0.19 Scale = 15.0 Shape = 1.6	**Gamma** Location = 0.19 Scale = 15.0 Shape = 1.6
16-30 years		**Gamma** location=0.49 scale=13.6 shape=1.26	
16-70 years			**Beta** min=0.17 max=178 alpha=1.5 beta= 12.9

5.4.3.4 Exposure through Ingestion of Angler-caught Fish

Exposure through ingestion of angler-caught fish ($DOSE_{fish}$) is a function of the fraction of fish ingested that is caught in the exposed water body, which differs for each age grouping, and the gastrointestinal absorption factor. Ingestion of angler-caught fish on a mg/kg body weight per day basis varies by age resulting in differences in exposure dose by age. The age-specific groupings to determine dose is needed primarily to properly use the age sensitivity factors for cancer risk assessment (see Chapter 8) and to calculate a time-weighted average dose for chronic noncancer assessment.

5.4.3.4.1 Cancer Risk Dose via Ingestion of Angler-Caught Fish

$DOSE_{fish}$ is calculated for each age group separately (i.e., 3rd trimester, 0<2 yrs, 2<9 yrs, 2<16 yrs, 16<30 yrs and 16-70 yrs), then incorporated into EQ 8.2.5 in Chapter 8 to determine cancer risk through exposure to angler-caught fish.

A. Equation 5.4.3.4.1: $\mathbf{DOSE_{fish} = C_t \times I_{fish} \times Gf \times L \times EF \times 10^{-6}}$

1. $DOSE_{fish}$ = Dose via ingestion of angler-caught fish (mg/kg BW-day)
2. Ct = Concentration in fish muscle tissue (μg/kg)
3. I_{fish} = Angler-caught fish ingestion rate (g/kg BW per day)
4. Gf = Gastrointestinal absorption factor (unitless)
5. L = Fraction of fish caught at exposed site (unitless)
6. EF = Exposure frequency (days/365 days)
7. 10^{-6} = Conversion factor (mg/μg, kg/g)

a: Recommended default values for Equation 5.4.3.4.1:

1. Ct = Calculated above in Equation 5.3.4.7
2. I_{fish} = See Table 5.20 (point estimates) and Table 5.21 (distributions)
3. Gf = Default set to 1
4. L = Default set to 1 for fraction of fish caught locally, although a site-specific survey is recommended for this variate
5. EF = 0.96 (350 days/365 days in a yr)

5.4.3.4.2 Chronic Noncancer Dose via Ingestion of Angler-Caught Fish

Angler-caught fish consumption varies by age group. A time-weighted average intake for residential consumption over 70 years is used to determine dose for average and high-end exposure. The contribution to the angler-caught fish consumption dose is determined for each age group in EQ 5.4.3.4.2:

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A. Equation 5.4.3.4.2: $\mathbf{DOSE_{fish} = C_t \times I_{fish} \times Gf \times L \times 10^{-6} \times ED/AT}$

1. $DOSE_{fish}$ = Dose via ingestion of angler-caught fish (mg/kg BW-day)
2. C_t = Concentration in fish muscle tissue (μg/kg)
3. Ifish = Angler-caught fish ingestion rate (g/kg BW per day)
4. Gf = Gastrointestinal absorption factor (unitless)
5. L = Fraction of fish caught at exposed site (unitless)
6. 10^{-6} = Conversion factor (mg/μg, kg/g)
7. ED = Exposure duration for a specified age group: 2 yrs for 0<2, 14 yrs for 2<16 and 54 yrs for 16-70
8. AT = Averaging time for chronic exposure – 70 yrs

a: Recommended default values for Equation 5.4.3.4.2:

1. C_t = Calculated above in Equation 5.3.4.7
2. I_{fish} = See Table 5.20 (point estimates)
3. Gf = Default set to 1
4. L = Default set to 1 for fraction of fish caught locally, although a site-specific survey is recommended for this variate

b: Recommended nursing mother default modifications to EQ 5.4.3.4.2:

1. For the dose to mother's milk through fish consumption, use the Ifish for age 16-30 years in Table 5.20.
2. The ED and AT variates in EQ 5.4.3.4.2 are left out for the dose via fish consumption in the mother's milk pathway.

Following calculation of the angler-caught fish consumption dose contribution for each age group, 0<2 yr, 2<16 yr and 16-70 yr fish consumption doses are summed together to obtain the residential chronic dose:

(Ifish for age 0<2 yrs × C_t × Gf × L × 10^{-6} × 2 / 70) +

(Ifish for age 2<16 yrs × C_t × Gf × L × 10^{-6} × 14 / 70) +

(Ifish for age 16-70 yrs × C_t × Gf × L × 10^{-6} × 54 / 70) = Chronic $Dose_{fish}$

Table 5.20 Point Estimate Values for Angler-Caught Fish Consumption (g/kg-day) by Age Group

	Third Trimester	0 <2 Years	2<9 Years	2<16 Years	16<30 Years	16-70 Years
Mean	0.38	0.18	0.36	0.36	0.38	0.36
95th Percentile	1.22	0.58	1.16	1.16	1.22	1.16

Table 5.21 Empirical Distribution for Angler-Caught Fish Consumption (g/kg-day)

Mean	Percentile									
	10th	20th	30th	40th	50th	60th	70th	80th	90th	95th
Third trimester, 2<9, 2<16, 16<30 and 16-70-year age groups										
0.36	0.06	0.09	0.12	0.16	0.21	0.27	0.36	0.50	0.79	1.16
0<2-year age group										
0.18	0.03	0.05	0.06	0.08	0.11	0.14	0.18	0.25	0.40	0.58

5.4.3.5 Mother's Milk

Exposure through mother's milk ingestion (Dose-Im) is a function of the average concentration of the substance in mother's milk and the amount of mother's milk ingested. The minimum pathways that the nursing mother is exposed to include inhalation, soil ingestion, and dermal, since the chemicals evaluated by the mother's milk pathway are multipathway chemicals. Other pathways may be appropriate depending on site conditions (e.g., the presence of vegetable gardens or home grown chickens). The compounds currently considered for the mother's milk pathway are:

1. Dioxins and Furans (PCDDS and PCDFs)
2. Polychlorinated biphenyls (PCBs)
3. Polycyclic Aromatic Hydrocarbons (PAHs), including creosotes
4. Lead

These compound classes represent the chemicals of greatest concern for the mother's milk pathway under the Hot Spots program, and for which data are available to estimate transfer coefficients. It is expected that additional transfer coefficients will be developed for other multipathway chemicals in the Hot Spots Program as data becomes available and is reviewed. The nursing mother in the mother's milk pathway is not herself subject to the mother's milk pathway. The summed average daily dose (mg/kg BW-day) from all pathways is calculated for the nursing mother using the equations that follow.

5.4.3.5.1 Cancer Risk Dose to Infant via Mother's Milk

A. Equation 5.4.3.5.1: $\mathbf{Dose\text{-}Im = C_m \times BMI_{bw} \times EF \times 10^{-3}}$

1. Dose-Im = Dose to infant through ingestion of mother's milk (mg/kg BW per day)
2. C_m = Concentration of contaminant in mother's milk (mg/kg milk)
3. BMI_{bw} = Daily breast-milk ingestion rate (g/kg BW-day)
4. EF = Frequency of exposure (days / 365 days)
5. 10^{-3} = Conversion factor (kg to g)

a: Recommended default values for EQ 5.4.3.5.1:

1. C_m = See EQ 5.3.4.8
2. BMI_{bw} = See Table 5.22 for point estimates. For distribution (parametric model) for Tier 3 stochastic risk assessments see Table 5.23.
3. EF = 1 (all 365 days of the first year of birth)

b: Assumptions for EQ 5.4.3.5.1:

1. For the MEIR, mother is exposed from birth up to 25 years of age when the infant is born. The exposed infant is then fully breastfed only during the first year of life.
2. For cancer risk assessment, exposure of breast-feeding infants to contaminants in breast milk applies only to the first year of the 0<2 yr age group for calculation of risk to this group, which then can be summed with the risk calculated for the other age groups (See Chapter 8).

5.4.3.5.2 Chronic Noncancer Dose to Infant via Mother's Milk

For oral noncancer hazard assessment, exposure of the infant through mother's milk ingestion occurs during the first year of life. After one year of age, the mother's milk pathway is not a factor for noncancer assessment.

A. Equation 5.4.3.5.2: $\text{Dose-Im} = C_m \times BMI_{bw} \times 10^{-3}$

1. Dose-Im = Dose to infant through ingestion of mother's milk (mg/kg BW/d)
2. C_m = Concentration of contaminant in mother's milk (mg/kg milk)
3. BMI_{bw} = Daily breast-milk ingestion rate (g/kg BW-day)
4. 10^{-3} = Conversion factor (kg to g)

a: Recommended default values for EQ 5.4.3.5.2:

1. C_m = See EQ 5.3.4.8
2. BMI_{bw} = See Table 5.22 for point estimates

Table 5.22 Default Point Estimates for Breast Milk Intake (BMI_{bw}) for Breastfed Infants

Infant Group	Intake (g/kg-day)
Fully breastfed over the first year (i.e., fed in accordance with AAP recommendations)	
Mean	101
95th percentile	139

Table 5.23 Recommended Distribution of Breast Milk Intake Rates Among Breastfed Infants for Stochastic Assessment* (Averaged Over an Individual's First Year of Life)

	Mean (SD)	Percentile							
		5	10	25	50	75	90	95	99
Intake (g/kg-day)	101 (23)	62	71	85	101	116	130	139	154

* For stochastic analysis, the mother's milk data are normally distributed.

5.5 References

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6 - Dose-Response Assessment for Noncarcinogenic Endpoints

6.1 Derivation of Toxicity Criteria for Noncancer Health Effects

Dose-response assessment describes the quantitative relationship between the amount of exposure to a substance (the dose) and the incidence or occurrence of an adverse health impact (the response). Dose-response information for noncancer health effects is used to determine Reference Exposure Levels (RELs). Inhalation RELs are air concentrations or doses at or below which adverse noncancer health effects are not expected even in sensitive members of the general population under specified exposure scenarios. The acute RELs are for infrequent 1 hour exposures that occur no more than once every two weeks in a given year, although this time frame of exposure does not necessarily apply to chemicals that can bioaccumulate (e.g., dioxins and furans, PCBs, and various metals). The chronic RELs are for 24 hour per day exposures for at least a significant fraction of a lifetime, defined as about 8 years (≥12 percent of a 70-year lifespan). The 8-hour RELs are for repeated 8-hour exposures for a significant fraction of a lifetime such as the exposures that offsite workers might typically receive. Eight-hour RELs are only available for 10 chemicals at present, but OEHHA will develop 8-hour RELs as we re-evaluate our existing RELs to ensure they are protective of children's health, and as we develop RELs for new chemicals. There are oral chronic RELs for some chemicals in the Hot Spots program that are semivolatile or nonvolatile and thus subject to deposition and oral ingestion or dermal exposure. The methodology for developing RELs is similar to that used by U.S. EPA in developing the inhalation Reference Concentrations (RfCs) and oral Reference Doses (RfDs).

Review and revision of RELs to take into account new information and sensitive subpopulations including infants and children is an ongoing process. All draft RELs for individual chemicals revised under the current noncancer methodology will undergo public comment and peer review, as mandated by the Hot Spots Act. .

The first step in determining an acute, 8-hour, or chronic REL is to determine a point of departure. The point of departure is preferably determined by the benchmark concentration procedure applied to human or animal studies, but if this method of calculation cannot be used with a particular data set, a no observed adverse effect level (NOAEL) or lowest observed adverse effect level (LOAEL) may be used as the point of departure. The benchmark concentration method (also referred to as the benchmark dose method for oral exposures) is a preferred method to estimate a point of departure because it takes all of the available dose-response data into account to statistically estimate, typically, a 5 percent response rate.

Dosimetric or toxicokinetic adjustments are often made to the point of departure to adjust for differences in dosimetry or kinetics across species or among humans. Time adjustments are generally applied to adjust experimental exposure to the exposure of

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interest for the REL (e.g., 1 hour for acute, continuous for chronic). A modified Haber's equation is used where needed to adjust studies with different exposure times to the one-hour period needed for acute RELs. A simple Haber's law (C x T) adjustment for exposure period duration is used for most 8-hour and chronic RELs.

The time and dosimetry adjusted point of departure is divided by uncertainty factors that reflect the limitations in the current toxicology of the chemical. For example, an interspecies uncertainty factor is applied to account for the differences between humans and animals when an animal study is used. An intraspecies uncertainty factor is usually included to account for differences in susceptibility among the human population. In addition, where benchmark dose modeling is not suitable and a NOAEL is not available, a LOAEL to NOAEL uncertainty factor may be applied when the LOAEL serves as the point of departure. If a chronic study is not available to serve as a basis for a chronic REL, then a subchronic uncertainty factor (for chronic and 8-hour RELs only) may also be applied. Finally, if there are data deficiencies, for example, lack of a developmental toxicity study for a chemical, then a database deficiency factor may be applied. The individual uncertainty factors, which range from 2 to 10 depending on the limitations in the data, are multiplied together for a total uncertainty factor. The point of departure is then divided by the total UF to obtain the REL.

The most sensitive toxicological end point is selected as the basis for the REL when there are multiple adverse health effects. The selection of the most sensitive endpoint as the basis for a REL helps ensure that the REL is protective for all health effects. The use of uncertainty factors helps ensure that the REL is protective for nearly all individuals, including sensitive subpopulations, within the limitations of current scientific knowledge. For detailed information on the methodology and derivations for RELs, including guidance on selection of uncertainty factors, see the Air Toxics Hot Spots Risk Assessment Guidelines Technical Support Document for the Derivation of Noncancer Reference Exposure Levels (OEHHA, 2008).

It should be emphasized that exceeding the acute or chronic REL does not necessarily indicate that an adverse health impact will occur. The REL is not the threshold where population health effects would first be seen. However, levels of exposure above the REL have an increasing but undefined probability of resulting in an adverse health impact, particularly in sensitive individuals (e.g., depending on the toxicant, the very young, the elderly, pregnant women, and those with acute or chronic illnesses). The significance of exceeding the REL is dependent on the seriousness of the health endpoint, the strength and interpretation of the health studies, the magnitude of combined safety factors, and other considerations. In addition, there is a possibility that a REL may not be protective of certain small, unusually sensitive human subpopulations. Such subpopulations can be difficult to identify and study because of their small numbers, lack of knowledge about toxic mechanisms, and other factors. It may be useful to consult OEHHA staff when a REL is exceeded (hazard quotient or hazard index is greater than 1.0). Chapter 8 discusses the methods used for determining potential noncancer health impacts and Appendix I presents example calculations used to determine a hazard quotient (HQ) and hazard indices (HI).

Tables 6.1 through 6.3 list the currently adopted acute, 8-hour, and chronic inhalation RELs. Some substances that pose a long-term inhalation hazard may also present a chronic hazard via non-inhalation (oral, dermal) routes of exposure. The oral RELs for these substances are presented in Table 6.3. Appendix L provides a consolidated listing of all the acute, 8-hour, and chronic RELs with the respective target organs that are approved for use by OEHHA and ARB for the Hot Spots Program. Periodically, new or updated RELs are adopted by OEHHA and these guidelines will be updated to reflect those changes. See OEHHA's web site at www.oehha.ca.gov (look under "Air", then select "Hot Spots Guidelines") to determine if any new or updated RELs have been adopted since the last guideline update.

6.2 Acute Reference Exposure Levels

OEHHA developed acute RELs for assessing potential noncancer health impacts for short-term, one-hour peak exposures to facility emissions (OEHHA, 2008; http://www.oehha.ca.gov/air/allrels.html). By definition, an acute REL is an exposure that is not likely to cause adverse health effects in a human population, including sensitive subgroups, exposed to that concentration (in units of micrograms per cubic meter or $\mu g/m^3$) for the specified exposure duration on an intermittent basis.

The target organ systems and the acute RELs for each substance are presented in Table 6.1. Many acute RELs are based on mild adverse effects, such as mild irritation of the eyes, nose, or throat, or may result in other mild adverse physiological changes. For most individuals, it is expected that the mild irritation and other adverse physiological changes will not persist after exposure ceases. For RELs that have been recently developed or revised, the notation "sensory irritation" has been added in parenthesis in Table 6.1 for those chemicals that have an acute REL based on sensory irritation of the respiratory system (i.e., nose , throat) and/or eyes.

Other acute RELs are based on reproductive/developmental endpoints, such as teratogenicity or fetotoxicity, which are considered severe adverse effects. The inhalation pathway is the only pathway to assess for acute exposure. Other non-inhalation pathways of exposure are evaluated for worker and residential scenarios where the exposures are chronic or repeated daily in nature. The oral RELs are used to evaluate the non-inhalation pathways of exposure. Noninhalation (oral) RELs are discussed in Section 6.5. Chapter 8 discusses the methods used for determining noncancer acute health impacts. Appendix I presents an example calculation used to determine an HQ and HI.

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Table 6.1 Acute Inhalation Reference Exposure Levels (RELs) and Acute Hazard Index Target Organ System(s)

Substance	Chemical Abstract Service Number (CAS)	Acute Inhalation REL ($\mu g/m^3$)	Acute Hazard Index Target Organ Systems(s)
Acetaldehyde	75-07-0	$4.7 \times 10^{+2}$	Eyes; Respiratory System (sensory irritation)
Acrolein	107-02-8	$2.5 \times 10^{+0}$	Eyes; Respiratory System (sensory irritation)
Acrylic Acid	79-10-7	$6.0 \times 10^{+3}$	Eyes; Respiratory System
Ammonia	7664-41-7	$3.2 \times 10^{+3}$	Eyes; Respiratory System
Arsenic and Inorganic Arsenic Compounds (including arsine)	7440-38-2	2.0×10^{-1}	Development; Cardiovascular System; Nervous System
Benzene	71-43-2	$2.7 \times 10^{+1}$	Reproductive/Developmental; Immune System; Hematologic System
Benzyl Chloride	100-44-7	$2.4 \times 10^{+2}$	Eyes; Respiratory System
1,3-Butadiene	106-99-0	$6.6 \times 10^{+2}$	Development
Caprolactam	105-60-2	$5.0 \times 10^{+1}$	Eyes (sensory irritation)
Carbon Disulfide	75-15-0	$6.2 \times 10^{+3}$	Nervous System; Reproductive/Developmental
Carbon Monoxide [a]	630-08-0	$2.3 \times 10^{+4}$	Cardiovascular System
Carbon Tetrachloride	56-23-5	$1.9 \times 10^{+3}$	Alimentary System (Liver); Nervous System Reproductive/Developmental
Chlorine	7782-50-5	$2.1 \times 10^{+2}$	Eyes; Respiratory System
Chloroform	67-66-3	$1.5 \times 10^{+2}$	Nervous System; Respiratory System; Reproductive/Developmental
Chloropicrin	76-06-2	$2.9 \times 10^{+1}$	Eyes; Respiratory System
Copper and Compounds	7440-50-8	$1.0 \times 10^{+2}$	Respiratory System
1,4-Dioxane	123-91-1	$3.0 \times 10^{+3}$	Eyes; Respiratory System
Epichlorohydrin	106-89-8	$1.3 \times 10^{+3}$	Eyes; Respiratory System
Ethylene Glycol Monobutyl Ether	111-76-2	$1.4 \times 10^{+4}$	Eyes; Respiratory System
Ethylene Glycol Monoethyl Ether	110-80-5	$3.7 \times 10^{+2}$	Reproductive/Developmental
Ethylene Glycol Monoethyl Ether Acetate	111-15-9	$1.4 \times 10^{+2}$	Nervous System; Reproductive/Developmental
Ethylene Glycol Monomethyl Ether	109-86-4	$9.3 \times 10^{+1}$	Reproductive/Developmental
Formaldehyde	50-00-0	$5.5 \times 10^{+1}$	Eyes (sensory irritation)
Hydrogen Chloride	7647-01-0	$2.1 \times 10^{+3}$	Eyes; Respiratory System
Hydrogen Cyanide	74-90-8	$3.4 \times 10^{+2}$	Nervous System
Hydrogen Fluoride	7664-39-3	$2.4 \times 10^{+2}$	Eyes; Respiratory System
Hydrogen Selenide	7783-07-5	$5.0 \times 10^{+0}$	Eyes; Respiratory System
Hydrogen Sulfide [a]	7783-06-4	$4.2 \times 10^{+1}$	Nervous System
Isopropanol	67-63-0	$3.2 \times 10^{+3}$	Eyes; Respiratory System
Mercury and Inorganic Mercury Compounds	7439-97-6	6.0×10^{-1}	Nervous System; Development
Methanol	67-56-1	$2.8 \times 10^{+4}$	Nervous System
Methyl Bromide	74-83-9	$3.9 \times 10^{+3}$	Nervous System; Respiratory System; Reproductive/Developmental

Substance	Chemical Abstract Service Number (CAS)	Acute Inhalation REL ($\mu g/m^3$)	Acute Hazard Index Target Organ Systems(s)
Methyl Chloroform	71-55-6	$6.8 \times 10^{+4}$	Nervous System
Methyl Ethyl Ketone	78-93-3	$1.3 \times 10^{+4}$	Eyes; Respiratory System
Methylene Chloride	75-09-2	$1.4 \times 10^{+4}$	Nervous System; Cardiovascular System
Nickel and Nickel Compounds	7440-02-0	2.0×10^{-1}	Immune System
Nitric Acid	7697-37-2	$8.6 \times 10^{+1}$	Respiratory System
Nitrogen Dioxide [a]	10102-44-0	$4.7 \times 10^{+2}$	Respiratory System
Ozone [a]	10028-15-6	$1.8 \times 10^{+2}$	Eyes; Respiratory System
Perchloroethylene (Tetrachloroethylene)	127-18-4	$2.0 \times 10^{+4}$	Eyes; Nervous System; Respiratory System
Phenol	108-95-2	$5.8 \times 10^{+3}$	Eyes; Respiratory System
Phosgene	75-44-5	$4.0 \times 10^{+0}$	Respiratory System
Propylene Oxide	75-56-9	$3.1 \times 10^{+3}$	Eyes; Respiratory System; Reproductive/Developmental
Sodium Hydroxide	1310-73-2	$8.0 \times 10^{+0}$	Eyes; Skin; Respiratory System
Styrene	100-42-5	$2.1 \times 10^{+4}$	Eyes; Respiratory System; Reproductive/Developmental
Sulfates [a]	N/A	$1.2 \times 10^{+2}$	Respiratory System
Sulfur Dioxide [a]	7446-09-5	$6.6 \times 10^{+2}$	Respiratory System
Sulfuric Acid and Oleum	7664-93-9 8014-95-7	$1.2 \times 10^{+2}$	Respiratory System
Tetrachloroethylene (Perchloroethylene)	127-18-4	$2.0 \times 10^{+4}$	Eyes; Nervous System; Respiratory System
Toluene	108-88-3	$3.7 \times 10^{+4}$	Nervous System; Respiratory System; Eyes; Reproductive/Developmental
Triethylamine	121-44-8	$2.8 \times 10^{+3}$	Nervous System; Eyes
Vanadium Pentoxide	1314-62-1	$3.0 \times 10^{+1}$	Eyes; Respiratory System
Vinyl Chloride	75-01-4	$1.8 \times 10^{+5}$	Nervous System; Eyes; Respiratory System
Xylenes (m,o,p-isomers)	1330-20-7	$2.2 \times 10^{+4}$	Eyes; Respiratory System; Nervous System

[a] California Ambient Air Quality Standard

6.3 8-hour Reference Exposure Levels

OEHHA has developed 8-hour RELs for assessing potential noncancer health impacts for exposures to the general public that occur on a recurrent basis, but only during a portion of each day (OEHHA, 2008; http://www.oehha.ca.gov/air/allrels.html). Eight-hour RELs are compared to air concentrations that represent an average (daily) 8-hour exposure. They were designed to address off-site worker exposure at the MEIW, but may also be used at the Districts' discretion to characterize 8-hour residential noncancer exposures, particularly for non-continuous facility operations where exposure is based on air concentrations during facility operation (i.e., the zero emission hours are not included) rather than averaged over 24-hours/day, 7 days/week as assessed for chronic exposure. The 8-hour RELs can also be used to assess exposure of students and teachers while at school (OEHHA, 2008). These RELs were developed because of concerns that applying the chronic REL in some scenarios was

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overly conservative. By definition, an 8-hour REL is an exposure that is not likely to cause adverse health effects in a human population, including sensitive subgroups, exposed to that concentration (in units of micrograms per cubic meter or $\mu g/m^3$) for an 8-hour exposure duration on a regular (including daily) basis.

The RELs, target organ systems, and the averaging time for substances that can present a potential hazard from inhalation for 8 hours on a daily basis are presented in Table 6.2. Chapter 8 discusses the methods used for determining noncancer 8-hour health impacts. Appendix I presents an example calculation used to determine an HQ and HI.

Any substances in Table 6.2 with Development or Reproductive System as a target organ system are represented in HARP and in the Appendix L REL tables under the single endpoint "Reproductive/Development".

Table 6.2 Eight-Hour Inhalation Reference Exposure Levels (RELs) and 8-Hour Hazard Index Target Organ System(s)

Substance	Chemical Abstract Service Number (CAS)	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Inhalation Hazard Index Target Organ System(s)
Acetaldehyde	75-07-0	$3.0 \times 10^{+2}$	Respiratory System
Acrolein	107-02-8	7.0×10^{-1}	Respiratory System
Arsenic & Inorganic Arsenic Compounds	7440-38-2	1.5×10^{-2}	Cardiovascular System; Development; Nervous System; Respiratory System; Skin
Benzene	71-43-2	$3.0 \times 10^{+0}$	Hematologic System
1,3-Butadiene	106-99-0	$9.0 \times 10^{+0}$	Reproductive System
Caprolactam	105-60-2	$7.0 \times 10^{+0}$	Respiratory System
Formaldehyde	50-0-0	$9.0 \times 10^{+0}$	Respiratory System
Manganese & Manganese Compounds	7439-96-5	1.7×10^{-1}	Nervous System
Mercury & Inorganic Mercury Compounds	7439--97-6	6.0×10^{-2}	Nervous System; Development; Kidney
Nickel & Nickel Compounds	7440-02-0	6.0×10^{-2}	Respiratory System; Immune System

6.4 Chronic Reference Exposure Levels

OEHHA has developed chronic RELs for assessing noncancer health impacts from long-term exposure. (OEHHA, 2008; see also http://www.oehha.ca.gov/air/allrels.html) A chronic REL is a concentration level (expressed in units of micrograms per cubic meter ($\mu g/m^3$) for inhalation exposure and in a dose expressed in units of milligrams per kilogram-day (mg/kg-day) for oral exposures) at or below which no adverse health effects are anticipated following long-term exposure. Long-term exposure for these purposes has been defined by U.S. EPA as at least 12% of a lifetime, or about eight years for humans. Table 6.3 lists the chronic noncancer RELs that should be used in

the assessment of chronic health effects from inhalation exposure. Appendix L provides a consolidated listing of all the acute, 8-hour and chronic RELs and target organs that are approved for use by OEHHA and ARB for the Hot Spots Program. Periodically, new or updated RELs are adopted by OEHHA. See OEHHA's web site http://www.oehha.ca.gov/air/allrels.html to determine if any new or updated RELs have been adopted since the last guideline update.

The organ system(s) associated with each chronic REL are also presented in Table 6.3. Any substances in Table 6.3 with Development or Reproductive System as a target organ system are represented in HARP and in the Appendix L REL tables under the single endpoint "Reproductive/Development". Chapter 8 discusses the methods used for determining potential noncancer health impacts and Appendix I presents example calculations used to determine a HQ and HI.

Table 6.3 Chronic Inhalation Reference Exposure Levels (RELs) and Chronic Hazard Index Target Organ System(s)

Substance	Chemical Abstract Service Number (CAS)	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Inhalation Hazard Index Target Organ System(s)
Acetaldehyde [a]	75-07-0	$1.4 \times 10^{+2}$	Respiratory System
Acrolein	107-02-8	3.5×10^{-1}	Respiratory System
Acrylonitrile	107-13-1	$5.0 \times 10^{+0}$	Respiratory System
Ammonia	7664-41-7	$2.0 \times 10^{+2}$	Respiratory System
Arsenic & Inorganic Arsenic Compounds	7440-38-2	1.5×10^{-2}	Cardiovascular System; Development; Nervous System; Respiratory System; Skin
Benzene	71-43-2	$3.0 \times 10^{+0}$	Hematologic System
Beryllium and Beryllium Compounds	7440-41-7	7.0×10^{-3}	Immune System; Respiratory System
1,3-Butadiene	106-99-0	$2.0 \times 10^{+0}$	Reproductive System
Cadmium and Cadmium Compounds	7440-43-9	2.0×10^{-2}	Kidney; Respiratory System
Caprolactam	105-60-2	$2.2 \times 10^{+0}$	Respiratory System
Carbon Disulfide	75-15-0	$8.0 \times 10^{+2}$	Nervous System; Reproductive System
Carbon Tetrachloride	56-23-5	$4.0 \times 10^{+1}$	Alimentary System (Liver); Development; Nervous System
Chlorine	7782-50-5	2.0×10^{-1}	Respiratory System
Chlorine Dioxide	10049-04-4	6.0×10^{-1}	Respiratory System
Chlorinated Dibenzo-*p*-dioxins [b]			
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin [b]	1746-01-6	4.0×10^{-5}	Alimentary System (Liver); Development; Endocrine System; Hematologic System; Reproductive System; Respiratory System
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin [b]	40321-76-4	4.0×10^{-5}	
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin [b]	39227-28-6	4.0×10^{-4}	
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin [b]	57653-85-7	4.0×10^{-4}	
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin [b]	19408-74-3	4.0×10^{-4}	
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin [b]	35822-46-9	4.0×10^{-3}	
1,2,3,4,6,7,8,9-Octachlorodibenzo-*p*-dioxin [b]	3268-87-9	1.3×10^{-1}	

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Table 6.3 Chronic Inhalation Reference Exposure Levels (RELs) and Chronic Hazard Index Target Organ System(s)

Substance	Chemical Abstract Service Number (CAS)	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Inhalation Hazard Index Target Organ System(s)
Chlorinated Dibenzofurans [b]			
2,3,7,8-Tetrachlorodibenzofuran [b]	5120-73-19	4.0×10^{-4}	Alimentary System (Liver); Development; Endocrine System; Hematologic System; Reproductive System; Respiratory System
1,2,3,7,8-Pentachlorodibenzofuran [b]	57117-41-6	1.3×10^{-3}	
2,3,4,7,8-Pentachlorodibenzofuran [b]	57117-31-4	1.3×10^{-4}	
1,2,3,4,7,8-Hexachlorodibenzofuran [b]	70648-26-9	4.0×10^{-4}	
1,2,3,6,7,8-Hexachlorodibenzofuran [b]	57117-44-9	4.0×10^{-4}	
1,2,3,7,8,9-Hexachlorodibenzofuran [b]	72918-21-9	4.0×10^{-4}	
2,3,4,6,7,8-Hexachlorodibenzofuran [b]	60851-34-5	4.0×10^{-4}	
1,2,3,4,6,7,8-Heptachlorodibenzofuran [b]	67562-39-4	4.0×10^{-3}	
1,2,3,4,7,8,9-Heptachlorodibenzofuran [b]	55673-89-7	4.0×10^{-3}	
1,2,3,4,6,7,8,9-Octachlorodibenzofuran [b]	39001-02-0	1.3×10^{-1}	
Chlorobenzene	108-90-7	$1.0 \times 10^{+3}$	Alimentary System (Liver); Kidney; Reproductive System
Chloroform	67-66-3	$3.0 \times 10^{+2}$	Alimentary System (Liver); Development; Kidney
Chloropicrin	76-06-2	4.0×10^{-1}	Respiratory System
Chromium VI & Soluble Chromium VI Compounds (except chromic trioxide)	18540-29-9	2.0×10^{-1}	Respiratory System
Chromic Trioxide (as chromic acid mist)	1333-82-0	2.0×10^{-3}	Respiratory System
Cresol Mixtures	1319-77-3	$6.0 \times 10^{+2}$	Nervous System
1,4-Dichlorobenzene	106-46-7	$8.0 \times 10^{+2}$	Alimentary System (Liver); Kidney; Nervous System; Respiratory System
1,1-Dichloroethylene (Vinylidene Chloride)	75-35-4	$7.0 \times 10^{+1}$	Alimentary System (Liver)
Diesel Exhaust [a]	N/A	$5.0 \times 10^{+0}$	Respiratory System
Diethanolamine	111-42-2	$3.0 \times 10^{+0}$	Hematologic System; Respiratory System
N,N-Dimethylformamide	68-12-2	$8.0 \times 10^{+1}$	Alimentary System (Liver); Respiratory System
1,4-Dioxane	123-91-1	$3.0 \times 10^{+3}$	Alimentary System (Liver); Cardiovascular System; Kidney
Epichlorohydrin	106-89-8	$3.0 \times 10^{+0}$	Eyes; Respiratory System
1,2-Epoxybutane	106-88-7	$2.0 \times 10^{+1}$	Cardiovascular System; Respiratory System
Ethylbenzene	100-41-4	$2.0 \times 10^{+3}$	Alimentary System (Liver); Kidney; Development; Endocrine System
Ethyl Chloride	75-00-3	$3.0 \times 10^{+4}$	Alimentary System (Liver); Development
Ethylene Dibromide	106-93-4	8.0×10^{-1}	Reproductive System
Ethylene Dichloride	107-06-2	$4.0 \times 10^{+2}$	Alimentary System (Liver)
Ethylene Glycol	107-21-1	$4.0 \times 10^{+2}$	Development; Kidney; Respiratory System
Ethylene Glycol Monoethyl Ether	110-80-5	$7.0 \times 10^{+1}$	Hematologic System; Reproductive System
Ethylene Glycol Monoethyl Ether Acetate	111-15-9	$3.0 \times 10^{+2}$	Development

Table 6.3 Chronic Inhalation Reference Exposure Levels (RELs) and Chronic Hazard Index Target Organ System(s)

Substance	Chemical Abstract Service Number (CAS)	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Inhalation Hazard Index Target Organ System(s)
Ethylene Glycol Monomethyl Ether	109-86-4	$6.0 \times 10^{+1}$	Reproductive System
Ethylene Glycol Monomethyl Ether Acetate	110-49-6	$9.0 \times 10^{+1}$	Reproductive System
Ethylene Oxide	75-21-8	$3.0 \times 10^{+1}$	Nervous System
Fluorides (except hydrogen fluoride)	N/A	$1.3 \times 10^{+1}$	Bone and Teeth; Respiratory System
Formaldehyde	50-00-0	$9.0 \times 10^{+0}$	Respiratory System
Glutaraldehyde	111-30-8	8.0×10^{-2}	Respiratory System
Hexane (n-)	110-54-3	$7.0 \times 10^{+3}$	Nervous System
Hydrazine	302-01-2	2.0×10^{-1}	Alimentary System (Liver); Endocrine System
Hydrogen Chloride	7647-01-0	$9.0 \times 10^{+0}$	Respiratory System
Hydrogen Cyanide	74-90-8	$9.0 \times 10^{+0}$	Cardiovascular System; Endocrine System; Nervous System
Hydrogen Fluoride	7664-39-3	$1.4 \times 10^{+1}$	Bone and Teeth; Respiratory System
Hydrogen Sulfide	7783-06-4	$1.0 \times 10^{+1}$	Respiratory System
Isophorone	78-59-1	$2.0 \times 10^{+3}$	Alimentary System (Liver); Development
Isopropanol	67-63-0	$7.0 \times 10^{+3}$	Development; Kidney
Maleic Anhydride	108-31-6	7.0×10^{-1}	Respiratory System
Manganese & Manganese Compounds	7439-96-5	9.0×10^{-2}	Nervous System
Mercury & Inorganic Mercury Compounds	7439-97-6	3.0×10^{-2}	Nervous System; Development; Kidney
Methanol	67-56-1	$4.0 \times 10^{+3}$	Development
Methyl Bromide	74-83-9	$5.0 \times 10^{+0}$	Development; Nervous System; Respiratory System
Methyl Chloroform	71-55-6	$1.0 \times 10^{+3}$	Nervous System
Methyl Isocyanate	624-83-9	$1.0 \times 10^{+0}$	Reproductive System; Respiratory System
Methyl tertiary-Butyl Ether	1634-04-4	$8.0 \times 10^{+3}$	Alimentary System (Liver); Eyes; Kidney
Methylene Chloride	75-09-2	$4.0 \times 10^{+2}$	Cardiovascular System; Nervous System
4,4'-Methylene Dianiline (& its dichloride)	101-77-9	$2.0 \times 10^{+1}$	Alimentary System (Liver); Eyes
Methylene Diphenyl Isocyanate	101-68-8	7.0×10^{-1}	Respiratory System
Naphthalene	91-20-3	$9.0 \times 10^{+0}$	Respiratory System
Nickel & Nickel Compounds (except nickel oxide)	7440-02-0	1.4×10^{-2}	Hematologic System; Respiratory System
Nickel Oxide	1313-99-1	2.0×10^{-2}	Respiratory System
Perchloroethylene (Tetrachloroethylene)[a]	127-18-4	$3.5 \times 10^{+1}$	Alimentary System (Liver); Kidney
Phenol	108-95-2	$2.0 \times 10^{+2}$	Alimentary System (Liver); Cardiovascular System; Kidney; Nervous System
Phosphine	7803-51-2	8.0×10^{-1}	Alimentary System (Liver); Hematologic System; Kidney; Nervous System; Respiratory System

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Table 6.3 Chronic Inhalation Reference Exposure Levels (RELs) and Chronic Hazard Index Target Organ System(s)

Substance	Chemical Abstract Service Number (CAS)	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Inhalation Hazard Index Target Organ System(s)
Phosphoric Acid	7664-38-2	$7.0 \times 10^{+0}$	Respiratory System
Phthalic Anhydride	85-44-9	$2.0 \times 10^{+1}$	Respiratory System
Polychlorinated biphenyls (PCBs)[b]			
3,3',4,4'-Tetrachlorobiphenyl (77)[b]	35298-13-3	4.0×10^{-1}	Alimentary System (Liver); Developmental; Endocrine System; Hematologic System; Reproductive System; Respiratory System
3,4,4',5-Tetrachlorobiphenyl (81)[b]	70362-50-4	1.3×10^{-1}	
2,3,3',4,4'- Pentachlorobiphenyl (105)[b]	32598-14-4	$1.3 \times 10^{+0}$	
2,3,4,4'5- Pentachlorobiphenyl (114)[b]	74472-37-0	$1.3 \times 10^{+0}$	
2,3'4,4',5- Pentachlorobiphenyl (118)[b]	31508-00-6	$1.3 \times 10^{+0}$	
2',3,4,4',5- Pentachlorobiphenyl (123)[b]	65510-44-3	$1.3 \times 10^{+0}$	
3,3',4,4',5- Pentachlorobiphenyl (126)[b]	57465-28-8	4.0×10^{-4}	
2,3,3',4,4',5-Hexachlorobiphenyl (156)[b]	38380-08-4	$1.3 \times 10^{+0}$	
2,3,3',4,4',5'-Hexachlorobiphenyl (157)[b]	69782-90-7	$1.3 \times 10^{+0}$	
2,3',4,4',5,5'-Hexachlorobiphenyl (167)[b]	52663-72-6	$1.3 \times 10^{+0}$	
3,3',4,4'5,5'- Hexachlorobiphenyl (169)[b]	32774-16-6	1.3×10^{-3}	
2,3,3'4,4',5,5'-Heptachlorobiphenyl (189)[b]	39635-31-9	$1.3 \times 10^{+0}$	
Propylene	115-07-1	$3.0 \times 10^{+3}$	Respiratory System
Propylene Glycol Monomethyl Ether	107-98-2	$7.0 \times 10^{+3}$	Alimentary System (Liver)
Propylene Oxide	75-56-9	$3.0 \times 10^{+1}$	Respiratory System
Selenium and Selenium compounds (other than Hydrogen Selenide)	7782-49-2	$2.0 \times 10^{+1}$	Alimentary System (Liver); Cardiovascular System; Nervous System
Silica (crystalline, respirable)	N/A	$3.0 \times 10^{+0}$	Respiratory System
Styrene	100-42-5	$9.0 \times 10^{+2}$	Nervous System
Sulfuric Acid	7664-93-9	$1.0 \times 10^{+0}$	Respiratory System
Toluene	108-88-3	$3.0 \times 10^{+2}$	Development; Nervous System; Respiratory System
2,4-Toluene Diisocyanate	584-84-9	7.0×10^{-2}	Respiratory System
2,6-Toluene Diisocyanate	91-08-7	7.0×10^{-2}	Respiratory System
Trichloroethylene[a]	79-01-6	$6.0 \times 10^{+2}$	Eyes; Nervous System
Triethylamine	121-44-8	$2.0 \times 10^{+2}$	Eyes
Vinyl Acetate	108-05-4	$2.0 \times 10^{+2}$	Respiratory System
Xylenes (m, o, p-isomers)	1330-20-7	$7.0 \times 10^{+2}$	Nervous System; Respiratory System; Eyes

[a] These peer-reviewed values were developed under the Toxic Air Contaminant (TAC) Program mandated by AB1807 (California Health and Safety Code Sec. 39650 *et seq*.).

[b] The OEHHA has adopted the World Health Organization Toxicity Equivalency Factor (TEF) scheme for evaluating the cancer risk and noncancer hazard due to exposure to samples containing mixtures of polychlorinated dibenzo-*p*-dioxins (PCDD) (also referred to as chlorinated dioxins and dibenzofurans), polychlorinated dibenzofurans (PCDF) and polychlorinated biphenyls (PCBs). The TEF values are revised from time to time to reflect new data and increased scientific knowledge. Currently OEHHA recommends use of the 2005 revision to the WHO TEF values (WHO_{05}-TEF). See Appendix E for more information about the scheme and for the methodology for calculating 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) equivalents for PCDD and PCDFs. For

convenience, OEHHA has calculated chronic REL values for speciated PCDDs, PCDFs and PCBs based on the WHO_{05} TEF values and the chronic REL for 2,3,7,8-TCDD using the procedure discussed in Appendix E. The chronic REL values can be used to calculate a hazard index when the mixtures are speciated from individual congener ground level concentrations. In those cases where speciation of dioxins and furans has not been performed, then 2,3,7,8-TCDD serves as the surrogate for dioxin and furan emissions.

N/A Not Applicable

6.5 Chronic Oral (Noninhalation) Reference Exposure Levels

As specified throughout the guidelines, estimates of long-term exposure resulting from facility air emissions of specific compounds must be analyzed for both inhalation and noninhalation (multipathway) pathways of exposure for humans. Facilities often emit substances under high temperature and pressure in the presence of particulate matter. While some of these substances are expected to remain in the vapor phase, other substances such as metals and semi-volatile organics can be either emitted as particles, form particles after emission from the facility, or adhere to existing particles. Some substances will partition between vapor and particulate phases. Substances in the particulate phase can be removed from the atmosphere by settling and, thus, potentially present a significant hazard via noninhalation pathways.

Particulate-associated chemicals can be deposited directly onto soil, onto the leaves or fruits of crops, or onto surface waters. Exposure via the oral route is the predominant noninhalation pathway, resulting in the noninhalation RELs being referred to as 'oral RELs' in this document. The oral RELs are used for both ingestion and dermal exposures, and are applied using the chronic non-inhalation exposures in the residential scenario and the worker scenarios. The oral RELs are expressed as doses in milligrams of substance (consumed and dermally absorbed) per kilogram body weight per day (mg/kg-day).

Table 6.4 lists the chronic noncancer RELs to be used in the assessment of chronic health effects from noninhalation pathways of exposure. Any substances in Table 6.4 with Development or Reproductive System as a target organ system are represented in HARP and in the Appendix L REL tables under the single endpoint "Reproductive/Development". Appendix L provides a consolidated listing of all chronic RELs and target organs that are approved for use by OEHHA and ARB for the Hot Spots Program. Periodically, new or updated RELs are adopted by OEHHA and these guidelines will be updated to reflect those changes. See OEHHA's web page at http://www.oehha.ca.gov/air/allrels.html to determine if any new or updated RELs have been adopted since the last guideline update. Chapter 8 discusses the methods used for determining potential noncancer health impacts and Appendix I presents example calculations used to determine a HQ and HI.

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Table 6.4 Chronic Noninhalation 'Oral' Reference Exposure Levels (RELs) and Chronic Hazard Index Target Organ System(s)

Substance	Chemical Abstract Service No. (CAS)	Chronic Oral REL (mg/kg-day)	Chronic Oral Hazard Index Target Organ System(s)
Arsenic & Inorganic Arsenic Compounds	7440-38-2	3.5×10^{-6}	Development; Nervous System; Respiratory System; Cardiovascular System; Skin
Beryllium and Beryllium Compounds	7440-41-7	2.0×10^{-3}	Alimentary System (Gastrointestinal Tract)
Cadmium and Cadmium Compounds	7440-43-9	5.0×10^{-4}	Kidney
Chlorinated Dibenzo-*p*-dioxins [a]			
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin [a]	1746-01-6	1.0×10^{-8}	Alimentary System (Liver); Developmental; Endocrine System; Hematologic System; Reproductive System; Respiratory System
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin [a]	40321-76-4	1.0×10^{-8}	
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin [a]	39227-28-6	1.0×10^{-7}	
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin [a]	57653-85-7	1.0×10^{-7}	
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin [a]	19408-74-3	1.0×10^{-7}	
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin [a]	35822-46-9	1.0×10^{-6}	
1,2,3,4,6,7,8,9-Octachlorodibenzo-*p*-dioxin [a]	3268-87-9	3.3×10^{-5}	
Chlorinated Dibenzofurans [a]			
2,3,7,8-Tetrachlorodibenzofuran [a]	5120-73-19	1.0×10^{-7}	Alimentary System (Liver); Development; Endocrine System; Hematologic System; Reproductive System; Respiratory System
1,2,3,7,8-Pentachlorodibenzofuran [a]	57117-41-6	3.3×10^{-7}	
2,3,4,7,8-Pentachlorodibenzofuran [a]	57117-31-4	3.3×10^{-8}	
1,2,3,4,7,8-Hexachlorodibenzofuran [a]	70648-26-9	1.0×10^{-7}	
1,2,3,6,7,8-Hexachlorodibenzofuran [a]	57117-44-9	1.0×10^{-7}	
1,2,3,7,8,9-Hexachlorodibenzofuran [a]	72918-21-9	1.0×10^{-7}	
2,3,4,6,7,8-Hexachlorodibenzofuran [a]	60851-34-5	1.0×10^{-7}	
1,2,3,4,6,7,8-Heptachlorodibenzofuran [a]	67562-39-4	1.0×10^{-6}	
1,2,3,4,7,8,9-Heptachlorodibenzofuran [a]	55673-89-7	1.0×10^{-6}	
1,2,3,4,6,7,8,9-Octachlorodibenzofuran [a]	39001-02-0	3.3×10^{-5}	
Chromium VI & Soluble Chromium VI Compounds (including chromic trioxide)	18540-29-9	2.0×10^{-2}	Hematologic System
Fluorides (including hydrogen fluoride)	7664-39-3	4.0×10^{-2}	Bone and Teeth
Mercury & Mercury Inorganic Compounds	7439-97-6	1.6×10^{-4}	Kidney; Nervous System; Development
Nickel & Nickel Compounds (including nickel oxide)	7440-02-0	1.1×10^{-2}	Development
Polychlorinated biphenyls (PCBs) (speciated) [a]			
3,3',4,4'-Tetrachlorobiphenyl (77) [a]	35298-13-3	1.0×10^{-4}	Alimentary System (Liver); Developmental; Endocrine System; Hematologic System; Reproductive System; Respiratory System
3,4,4',5-Tetrachlorobiphenyl (81) [a]	70362-50-4	3.3×10^{-5}	
2,3,3',4,4'- Pentachlorobiphenyl (105) [a]	32598-14-4	3.3×10^{-4}	
2,3,4,4'5- Pentachlorobiphenyl (114) [a]	74472-37-0	3.3×10^{-4}	
2,3'4,4',5- Pentachlorobiphenyl (118) [a]	31508-00-6	3.3×10^{-4}	
2',3,4,4',5- Pentachlorobiphenyl (123) [a]	65510-44-3	3.3×10^{-4}	
3,3',4,4',5- Pentachlorobiphenyl (126) [a]	57465-28-8	1.0×10^{-7}	
2,3,3',4,4',5-Hexachlorobiphenyl (156) [a]	38380-08-4	3.3×10^{-4}	
2,3,3',4,4',5'-Hexachlorobiphenyl (157) [a]	69782-90-7	3.3×10^{-4}	
2,3',4,4',5,5'-Hexachlorobiphenyl (167) [a]	52663-72-6	3.3×10^{-4}	
3,3',4,4'5,5'- Hexachlorobiphenyl (169) [a]	32774-16-6	3.3×10^{-7}	
2,3,3'4,4',5,5'- Heptachlorobiphenyl (189) [a]	39635-31-9	3.3×10^{-4}	

Table 6.4 Chronic Noninhalation 'Oral' Reference Exposure Levels (RELs) and Chronic Hazard Index Target Organ System(s)

Substance	Chemical Abstract Service No. (CAS)	Chronic Oral REL (mg/kg-day)	Chronic Oral Hazard Index Target Organ System(s)
Selenium and Selenium Compounds (other than hydrogen selenide)	7782-49-2	5.0×10^{-3}	Alimentary System (Liver); Cardiovascular System; Nervous System

[a] The OEHHA has adopted the World Health Organization Toxicity Equivalency Factor (TEF) scheme for evaluating the cancer risk and noncancer risk due to exposure to samples containing mixtures of polychlorinated dibenzo-*p*-dioxins (PCDD) (also referred to as chlorinated dioxins and dibenzofurans), polychlorinated dibenzofurans (PCDF), and polychlorinated biphenyls (PCBs). The TEF values are revised from time to time to reflect new data and increased scientific knowledge. Currently OEHHA recommends use of the 2005 revision to the WHO TEF values (WHO_{05}-TEF). See Appendix E for more information about the scheme and for the methodology for calculating 2,3,7,8-equivalents for PCDD and PCDFs. For convenience, OEHHA has calculated chronic 'oral' REL values for speciated PCDDs, PCDFs, and PCBs based on the WHO_{05} TEF values and the chronic 'oral' REL for 2,3,7,8-tetrachlorodibenzo-*p*-dioxin using the procedure discussed in Appendix E. The chronic 'oral' REL values can be used to calculate a hazard index when the mixtures are speciated from individual congener ground level concentrations. In those cases where speciation of dioxins and furans has not been performed, then 2,3,7,8-TCDD serves as the surrogate for dioxin and furan emissions.

6.6 References

OEHHA, 2008. Air Toxics Hot Spots Risk Assessment Guidelines Technical Support Document for the Derivation of Noncancer Reference Exposure Levels. Available online at: http://www.oehha.ca.gov

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7 - Dose-Response Assessment for Carcinogens

7.1 Introduction

Dose-response assessment characterizes the quantitative relationship between the amount of exposure to a substance (the dose) and the incidence or occurrence of injury (the response). The process often involves establishing a toxicity value or criterion to use in assessing potential health risk. The toxicity criterion, or health guidance value, for carcinogens is the cancer potency slope (potency factor), which describes the potential risk of developing cancer per unit of average daily dose over a 70-year lifetime. Cancer inhalation and oral potency factors have been derived by the Office of Environmental Health Hazard Assessment (OEHHA) or by the United States Environmental Protection Agency (U.S. EPA) and approved by the State's Scientific Review Panel on Toxic Air Contaminants. They are available for many of the substances listed in Appendix A (List of Substances) as carcinogens. Table 7.1 and Appendix L list the inhalation and oral cancer potency factors that should be used in multipathway health risk assessments (HRAs) for the Hot Spots Program.

The details on the methodology of dose-response assessment for carcinogens and the approved cancer potency factors are provided in the Air Toxics Hot Spots Risk Assessment Guidelines. Part II. Technical Support Document for Cancer Potency Factors: Methodologies for derivation, listing of available values, and adjustments to allow for early life stage exposures. May, 2009. (OEHHA, 2009; see http://www.oehha.ca.gov/air/hot_spots/tsd052909.html).

7.2 Carcinogenic Potency

Cancer potency factors used for both the inhalation and oral routes in the Hot Spots program are generally the 95% upper confidence limits (UCL) on the modeled dose-response slope at the low dose range. The cancer slope factor assumes continuous lifetime exposure to a substance, and is expressed in units of inverse dose [i.e., $(mg/kg/day)^{-1}$]. Another common potency expression is in units of inverse concentration [$(\mu g/m^3)^{-1}$)] when the slope is based on exposure concentration rather than dose; this is termed the unit risk factor. To accommodate the use of age-specific exposure variates, the Hot Spots program has translated the unit risk factors based on concentration to units of inverse dose. This allows calculation of risk for age groupings, as exposure varies with age. It also allows for application of Age Sensitivity Factors for early life exposures.

It is assumed in cancer risk assessments that risk is directly proportional to dose and that, for most carcinogens, there is no threshold for carcinogenesis. The derivation of inhalation and oral cancer potency factors takes into account information on pharmacokinetics, when available, and on the mechanism of carcinogenic action.

Table 7.1 and Appendix L list inhalation and oral cancer potency factors that should be used in risk assessments for the Hot Spots Program. Chapter 8 describes procedures for use of potency factors in estimating potential cancer risk.

7.2.1 *Inhalation Cancer Potency Factors*

The risk assessment methodology and algorithms presented in Chapter 8 express the inhalation cancer slope factors in units of inverse dose (i.e., $(mg/kg/day)^{-1}$). Breathing rates, expressed in units of liters per kilogram of body weight-day (L/kg-day), are multiplied with the air concentrations, coupled with the appropriate unit conversion factor, to estimate dose in mg/kg-day. This allows estimation of average and high-end cancer risk point estimates. Estimation of a distribution of cancer risk based on variability in breathing rate can be obtained by Monte Carlo methods using the distributions of breathing rates in L/kg-day, which can then be converted to a dose distribution in mg/kg BW based on the intake rate. Unit risk factors [in the units of inverse concentration (i.e., $(\mu g/m^3)^{-1}$], which were used in previous guidelines for the Hot Spots program, are still listed in the TSD (OEHHA, 2009) and may prove useful in other risk assessment applications.

The average daily inhalation dose (mg/kg-day) multiplied by the cancer potency factor $(mg/kg-day)^{-1}$ will give the inhalation cancer risk (unitless), which is an expression of the chemical's cancer risk during a 70-year lifespan of exposure. For example, an inhalation cancer risk of 5×10^{-6} is the same as stating that an individual has an estimated probability of developing cancer from their exposure of 5 chances per million people exposed. A more complete description of how potential cancer risk is calculated from the exposure dose and cancer potency factors is provided in Chapter 8. Appendix I presents an example calculation for determining cancer risk.

A list of current inhalation potency factors is provided in Table 7.1. Periodically, new or revised cancer potency factors will be peer reviewed by the State's Scientific Review Panel on Toxic Air Contaminants (SRP) and adopted by the Director of OEHHA. For new or updated numbers, consult the OEHHA web site at (http://www.oehha.ca.gov/air/hot_spots/tsd052909.html) to determine if any new or updated cancer potency factors have been adopted since this guideline update. New cancer potency factors that have been approved by the SRP and adopted by the Director of OEHHA should be incorporated into Hot Spots risk assessment for facilities that emit those chemicals.

7.2.2 *Oral Cancer Potency Factors*

Under the Hot Spots Program, a few substances are evaluated for exposure and risk from non-inhalation pathways – these are referred to as multipathway substances. Multipathway substances have the potential to impact a receptor through inhalation and noninhalation (oral and dermal) exposure routes. These substances include heavy metals and semi-volatile organic substances such as dioxins, furans, and polycyclic aromatic hydrocarbons (PAHs). These substances commonly exist in the particle

phase or partially in the particle phase when emitted into the air. They can therefore be deposited onto soil, vegetation, and water. Noninhalation exposure pathways considered under the Hot Spots Program include the ingestion of soil, homegrown produce, meat, milk, surface water, breast milk, and fish as well as dermal exposure to contaminants deposited in the soil. See Table 5.1 for a list of the multipathway substances.

Table 7.1 and Appendix L list oral cancer potency factors in units of $(mg/kg\text{-}day)^{-1}$ that should be used for assessing the potential cancer risk for these substances through noninhalation exposure pathways. The cancer risk from these individual pathways is calculated by multiplying the dose (mg/kg-day) times the oral cancer potency factor $(mg/kg\text{-}day)^{-1}$ to yield the potential cancer risk (unitless) from non-inhalation exposures. Chapter 5 provides all of the algorithms to calculate exposure dose through all of the individual exposure pathways. Appendix I provides a sample calculation for dose and cancer risk using the inhalation exposure pathway.

Three carcinogens (cadmium, beryllium, and nickel), although subject to deposition, are only treated as carcinogenic by the inhalation route and not by the oral route. Therefore, there are no oral cancer potency factors for these substances. However, the oral doses of these substances need to be estimated because of their noncancer toxicity. See Chapters 6 and 8, and Appendices I and L for dose-response factors, and calculations to address these substances.

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Table 7.1 Inhalation and Oral Cancer Potency Factors

Substance	Chemical Abstract Service Number (CAS)	Inhalation Potency Factor $(mg/kg\text{-}day)^{-1}$	Oral Slope Factor $(mg/kg\text{-}day)^{-1}$
Acetaldehyde	75-07-0	1.0×10^{-2}	
Acetamide	60-35-5	7.0×10^{-2}	
Acrylamide	79-06-1	$4.5 \times 10^{+0}$	
Acrylonitrile	107-13-1	$1.0 \times 10^{+0}$	
Allyl chloride	107-05-1	2.1×10^{-2}	
2-Aminoanthraquinone	117-79-3	3.3×10^{-2}	
Aniline	62-53-3	5.7×10^{-3}	
Arsenic (inorganic)	7440-38-2	$1.2 \times 10^{+1}$	$1.5 \times 10^{+0}$
Asbestos [#]	1332-21-4	$2.2 \times 10^{+2}$ [#]	
Benz[*a*]anthracene [BaP]	56-55-3	3.9×10^{-1}	$1.2 \times 10^{+0}$
Benzene	71-43-2	1.0×10^{-1}	
Benzidine	92-87-5	$5.0 \times 10^{+2}$	
Benzo[*a*]pyrene	50-32-8	$3.9 \times 10^{+0}$	$1.2 \times 10^{+1}$
Benzo[*b*]fluoranthrene [BaP]	205-99-2	3.9×10^{-1}	$1.2 \times 10^{+0}$
Benzo[*j*]fluoranthrene [BaP]	205-82-3	3.9×10^{-1}	$1.2 \times 10^{+0}$
Benzo[*k*]fluoranthrene [BaP]	207-08-9	3.9×10^{-1}	$1.2 \times 10^{+0}$
Benzyl chloride	100-44-7	1.7×10^{-1}	
Beryllium	7440-41-7	$8.4 \times 10^{+0}$	
Bis(2-chloroethyl) ether	111-44-4	$2.5 \times 10^{+0}$	
Bis(chloromethyl)ether	542-88-1	$4.6 \times 10^{+1}$	
1,3-Butadiene	106-99-0	6.0×10^{-1}	
Cadmium (and compounds)	7440-43-9	$1.5 \times 10^{+1}$	
Carbon tetrachloride	56-23-5	1.5×10^{-1}	
Chlorinated Dibenzo-p-dioxins [A]			
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin	1746-01-6	$1.3 \times 10^{+5}$	$1.3 \times 10^{+5}$
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin	40321-76-4	$1.3 \times 10^{+5}$	$1.3 \times 10^{+5}$
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin	39227-28-6	$1.3 \times 10^{+4}$	$1.3 \times 10^{+4}$
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin	57653-85-7	$1.3 \times 10^{+4}$	$1.3 \times 10^{+4}$
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	19408-74-3	$1.3 \times 10^{+4}$	$1.3 \times 10^{+4}$
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	35822-46-9	$1.3 \times 10^{+3}$	$1.3 \times 10^{+3}$
1,2,3,4,,6,7,8,9-Octachlorodibenzo-*p*-dioxin	3268-87-9	$3.9 \times 10^{+1}$	$3.9 \times 10^{+1}$
Chlorinated Dibenzofurans [A]			
2,3,7,8-Tetrachlorodibenzofuran	5120-73-19	$1.3 \times 10^{+4}$	$1.3 \times 10^{+4}$
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	$3.9 \times 10^{+3}$	$3.9 \times 10^{+3}$
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	$3.9 \times 10^{+4}$	$3.9 \times 10^{+4}$
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	$1.3 \times 10^{+4}$	$1.3 \times 10^{+4}$
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	$1.3 \times 10^{+4}$	$1.3 \times 10^{+4}$
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	$1.3 \times 10^{+4}$	$1.3 \times 10^{+4}$
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	$1.3 \times 10^{+4}$	$1.3 \times 10^{+4}$

Table 7.1 Inhalation and Oral Cancer Potency Factors

Substance	Chemical Abstract Service Number (CAS)	Inhalation Potency Factor $(mg/kg\text{-}day)^{-1}$	Oral Slope Factor $(mg/kg\text{-}day)^{-1}$
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	$1.3 \times 10^{+3}$	$1.3 \times 10^{+3}$
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	$1.3 \times 10^{+3}$	$1.3 \times 10^{+3}$
1,2,3,4,,6,7,8,9-Octachlorodibenzofuran	39001-02-0	$3.9 \times 10^{+1}$	$3.9 \times 10^{+1}$
Chlorinated paraffins	108171-26-2	8.9×10^{-2}	
Chloroform	67-66-3	1.9×10^{-2}	
4-Chloro-*o*-phenylenediamine	95-83-0	1.6×10^{-2}	
p-Chloro-*o*-toluidine	95-69-2	2.7×10^{-1}	
Chromium (hexavalent)	18540-29-9	$5.1 \times 10^{+2}$	5×10^{-1}
Chrysene [BaP]	218-01-9	3.9×10^{-2}	1.2×10^{-1}
Creosote	8001-58-9	*	
p-Cresidine	120-71-8	1.5×10^{-1}	
Cupferron	135-20-6	2.2×10^{-1}	
2,4-Diaminoanisole	615-05-4	2.3×10^{-2}	
2,4-Diaminotoluene	95-80-7	$4.0 \times 10^{+0}$	
Dibenz[*a,h*]acridine [BaP]	226-36-8	3.9×10^{-1}	$1.2 \times 10^{+0}$
Dibenz[*a,j*]acridine [BaP]	224-42-0	3.9×10^{-1}	$1.2 \times 10^{+0}$
Dibenz[*a,h*]anthracene [BaP]	53-70-3	$4.1 \times 10^{+0}$	$4.1 \times 10^{+0}$
Dibenzo[*a,e*]pyrene [BaP]	192-65-4	$3.9 \times 10^{+0}$	$1.2 \times 10^{+1}$
Dibenzo[*a,h*]pyrene [BaP]	189-64-0	$3.9 \times 10^{+1}$	$1.2 \times 10^{+2}$
Dibenzo[*a,l*]pyrene [BaP]	189-55-9	$3.9 \times 10^{+1}$	$1.2 \times 10^{+2}$
Dibenzo[*a,l*]pyrene [BaP]	191-30-0	$3.9 \times 10^{+1}$	$1.2 \times 10^{+2}$
7H-Dibenzo[*c,g*]carbazole [BaP]	194-59-2	$3.9 \times 10^{+0}$	$1.2 \times 10^{+1}$
1,2-Dibromo-3-chloropropane	96-12-8	$7.0 \times 10^{+0}$	
1,4-Dichlorobenzene	106-46-7	4.0×10^{-2}	
3,3'-Dichlorobenzidine	91-94-1	$1.2 \times 10^{+0}$	
1,1-Dichloroethane	75-34-3	5.7×10^{-3}	
Diesel exhaust [B]	NA	$1.1 \times 10^{+0}$	
Diethylhexylphthalate	117-81-7	8.4×10^{-3}	8.4×10^{-3}
p-Dimethylaminoazobenzene	60-11-7	$4.6 \times 10^{+0}$	
7,12-Dimethylbenz[*a*]anthracene [BaP]	57-97-6	$2.5 \times 10^{+2}$	$2.5 \times 10^{+2}$
1,6-Dinitropyrene [BaP]	42397-64-8	$3.9 \times 10^{+1}$	$1.2 \times 10^{+2}$
1,8-Dinitropyrene [BaP]	42397-65-9	$3.9 \times 10^{+0}$	$1.2 \times 10^{+1}$
2,4-Dinitrotoluene	121-14-2	3.1×10^{-1}	
1,4-Dioxane	123-91-1	2.7×10^{-2}	
Epichlorohydrin	106-89-8	8.0×10^{-2}	
Ethyl benzene	100-41-4	8.7×10^{-3}	1.1×10^{-2}
Ethylene dibromide	106-93-4	2.5×10^{-1}	
Ethylene dichloride	107-06-2	7.2×10^{-2}	
Ethylene oxide	75-21-8	3.1×10^{-1}	

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Table 7.1 Inhalation and Oral Cancer Potency Factors

Substance	Chemical Abstract Service Number (CAS)	Inhalation Potency Factor $(mg/kg\text{-}day)^{-1}$	Oral Slope Factor $(mg/kg\text{-}day)^{-1}$
Ethylene thiourea	96-45-7	4.5×10^{-2}	
Formaldehyde	50-00-0	2.1×10^{-2}	
Hexachlorobenzene	118-74-1	$1.8 \times 10^{+0}$	
Hexachlorocyclohexanes (technical grade)	608-73-1	$4.0 \times 10^{+0}$	$4.0 \times 10^{+0}$
Hydrazine	302-01-2	$1.7 \times 10^{+1}$	$3.0 \times 10^{+0}$
Indeno[1,2,3-*cd*]pyrene [BaP]	193-39-5	3.9×10^{-1}	$1.2 \times 10^{+0}$
Lead and lead compounds	7439-92-1	4.2×10^{-2}	8.5×10^{-3}
Lindane	58-89-9	$1.1 \times 10^{+0}$	$1.1 \times 10^{+0}$
Methyl tertiary-butyl ether	1634-04-4	1.8×10^{-3}	
3-Methylcholanthrene [BaP]	56-49-5	$2.2 \times 10^{+1}$	$2.2 \times 10^{+1}$
5-Methylchrysene [BaP]	3697-24-3	$3.9 \times 10^{+0}$	$1.2 \times 10^{+1}$
4, 4'-Methylene bis(2-chloroaniline) (MOCA)	101-14-4	$1.5 \times 10^{+0}$	
Methylene chloride	75-09-2	3.5×10^{-3}	
4,4'-Methylenedianiline	101-77-9	$1.6 \times 10^{+0}$	$1.6 \times 10^{+0}$
Michler's ketone	90-94-8	8.6×10^{-1}	
Naphthalene	91-20-3	1.2×10^{-1}	
Nickel (and compounds)	7440-02-0	9.1×10^{-1}	
5-Nitroacenaphthene [BaP]	602-87-9	1.3×10^{-1}	1.3×10^{-1}
6-Nitrochrysene [BaP]	7496-02-8	$3.9 \times 10^{+1}$	$1.2 \times 10^{+2}$
2-Nitrofluorene [BaP]	607-57-8	3.9×10^{-2}	1.2×10^{-1}
1-Nitropyrene [BaP]	5522-43-0	3.9×10^{-1}	$1.2 \times 10^{+0}$
4-Nitropyrene [BaP]	57835-92-4	3.9×10^{-1}	$1.2 \times 10^{+0}$
N-Nitroso-n-butylamine	924-16-3	$1.1 \times 10^{+1}$	
N-Nitroso-N-methylethylamine	10595-95-6	$2.2 \times 10^{+1}$	
N-Nitrosodi-*n*-propylamine	621-64-7	$7.0 \times 10^{+0}$	
N-Nitrosodiethylamine	55-18-5	$3.6 \times 10^{+1}$	
N-Nitrosodimethylamine	62-75-9	$1.6 \times 10^{+1}$	
N-Nitrosodiphenylamine	86-30-6	9.0×10^{-3}	
p-Nitrosodiphenylamine	156-10-5	2.2×10^{-2}	
N-Nitrosomorpholine	59-89-2	$6.7 \times 10^{+0}$	
N-Nitrosopiperidine	100-75-4	$9.4 \times 10^{+0}$	
N-Nitrosopyrrolidine	930-55-2	$2.1 \times 10^{+0}$	
Pentachlorophenol	87-86-5	1.8×10^{-2}	
Perchloroethylene	127-18-4	2.1×10^{-2}	5.1×10^{-2}
Polychlorinated biphenyls (PCBs) (unspeciated mixture)	1336-36-3		
(high risk) [P1]		$2.0 \times 10^{+0}$	$2.0 \times 10^{+0}$
(low risk) [P2]		4.0×10^{-1}	4.0×10^{-1}
(lowest risk) [P3]		7.0×10^{-2}	7.0×10^{-2}

Table 7.1 Inhalation and Oral Cancer Potency Factors

Substance	Chemical Abstract Service Number (CAS)	Inhalation Potency Factor $(mg/kg\text{-}day)^{-1}$	Oral Slope Factor $(mg/kg\text{-}day)^{-1}$
Polychlorinated biphenyls[P4] (PCBs) (speciated)			
3,3',4,4'-Tetrachlorobiphenyl (77)	35298-13-3	$1.3 \times 10^{+1}$	$1.3 \times 10^{+1}$
3,4,4',5-Tetrachlorobiphenyl (81)	70362-50-4	$3.9 \times 10^{+1}$	$3.9 \times 10^{+1}$
2,3,3',4,4'- Pentachlorobiphenyl (105)	32598-14-4	$3.9 \times 10^{+0}$	$3.9 \times 10^{+0}$
2,3,4,4'5- Pentachlorobiphenyl (114)	74472-37-0	$3.9 \times 10^{+0}$	$3.9 \times 10^{+0}$
2,3'4,4',5- Pentachlorobiphenyl (118)	31508-00-6	$3.9 \times 10^{+0}$	$3.9 \times 10^{+0}$
2',3,4,4',5- Pentachlorobiphenyl (123)	65510-44-3	$3.9 \times 10^{+0}$	$3.9 \times 10^{+0}$
3,3',4,4',5- Pentachlorobiphenyl (126)	57465-28-8	$1.3 \times 10^{+4}$	$1.3 \times 10^{+4}$
2,3,3',4,4',5-Hexachlorobiphenyl (156)	38380-08-4	$3.9 \times 10^{+0}$	$3.9 \times 10^{+0}$
2,3,3',4,4',5'-Hexachlorobiphenyl (157)	69782-90-7	$3.9 \times 10^{+0}$	$3.9 \times 10^{+0}$
2,3',4,4',5,5'-Hexachlorobiphenyl (167)	52663-72-6	$3.9 \times 10^{+0}$	$3.9 \times 10^{+0}$
3,3',4,4'5,5'- Hexachlorobiphenyl (169)	32774-16-6	$3.9 \times 10^{+3}$	$3.9 \times 10^{+3}$
2,3,3'4,4',5,5'- Heptachlorobiphenyl (189)	39635-31-9	$3.9 \times 10^{+0}$	$3.9 \times 10^{+0}$
Potassium bromate	7758-01-2	4.9×10^{-1}	
1,3-Propane sultone	1120-71-4	$2.4 \times 10^{+0}$	
Propylene oxide	75-56-9	1.3×10^{-2}	2.4×10^{-1}
1,1,2,2-Tetrachloroethane	79-34-5	2.0×10^{-1}	
Thioacetamide	62-55-5	$6.1 \times 10^{+0}$	
2,4-Toluene diisocyanate	584-84-9	3.9×10^{-2}	
2,6-Toluene diisocyanate	91-08-7	3.9×10^{-2}	
1,1,2-Trichloroethane (vinyl trichloride)	79-00-5	5.7×10^{-2}	
Trichloroethylene	79-01-6	7.0×10^{-3}	1.5×10^{-2}
2,4,6-Trichlorophenol	88-06-2	7.0×10^{-2}	
Urethane	51-79-6	$1.0 \times 10^{+0}$	
Vinyl chloride	75-01-4	2.7×10^{-1}	

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Notes for Table 7.1

Asbestos: [100 PCM fibers/m^3]$^{-1}$ A unit risk factor of 2.7×10^{-6} $(\mu g/m^3)^{-1}$ and an inhalation cancer potency factor of $2.2 \times 10^{+2}$ $(mg/kg\ BW*day)^{-1}$ are available (see Appendix C for explanation).

BaP PAHs and PAH Derivatives: Many have potency equivalency factors relative to benzo[*a*]pyrene (see Appendix G). For multipathway chemicals, including PAHs, the oral slope factor is considered the same as the inhalation potency factor unless otherwise noted in the Table.

A Polychlorinated Dibenzo-*p*-dioxins, Polychlorinated Dibenzofurans and speciated poly chlorinated biphenyls: (see Appendix E). For convenience, OEHHA has calculated cancer potency factors for speciated polychlorinated dibenzo-*p*-dioxin, polychlorinated dibenzofuran and polychlorinated biphenyl congeners using the procedure in Appendix E.

B Diesel Exhaust is listed as a Toxic Air Contaminant by the Air Resources Board as "Particulate Matter from Diesel-Fueled Engines". (See Appendix D)

* Creosote: Can be calculated using Potency Equivalency Factors contained in the benzo[*a*]pyrene Toxic Air Contaminant document and in Appendix G of these guidelines.

P1 Polychlorinated Biphenyls (PCBs): High Risk is for use in cases where congeners with more than four chlorines do not comprise less (are greater) than one-half percent of total PCBs. The high risk number is the default for unspeciated PCB mixtures.

P2 The low risk number is generally not applicable to the Hot Spots program. The Hot Spots program addresses PCBs emitted by stationary facilities. It cannot be assumed that such emissions would occur by simple evaporation. There is a dermal absorption factor applied in evaluation of the dermal pathway for PCBs so the medium risk would not apply to dermal exposure (OEHHA, 2009). The water pathway does not include an assumption that PCB isomers are water soluble, so the medium number would not apply to the water pathway.

P3 Polychlorinated Biphenyls (PCBs): Lowest Risk is for use in cases where congeners with more than four chlorines comprise less than one-half percent of total PCBs. In order for the low number to be used, scientific justification needs to be presented.

P4 Number in parentheses is the IUPAC #, the PCB nomenclature is IUPAC. For multipathway chemicals, including PCBs, the oral slope factor is considered the same as the inhalation potency factor unless otherwise noted in the Table.

7.3 References

OEHHA, 2009. Air Toxics Hot Spots Risk Assessment Guidelines. Part II. Technical Support Document for Cancer Potency Factors: Methodologies for derivation, listing of available values, and adjustments to allow for early life stage exposures. May, 2009. Available online at: http://www.oehha.ca.gov/air/hot_spots/tsd052909.html

8 - Risk Characterization for Carcinogens and Noncarcinogens and the Requirements for Hot Spots Risk Assessments

8.1 Introduction

Risk characterization is the final step of the health risk assessment (HRA). In this step, information developed through the exposure assessment is combined with information from the dose-response assessment to characterize risks to the general public from emissions. In the Hot Spots program, OEHHA conducts the dose-response assessment during the development of cancer potency factors and Reference Exposure Levels. These are used in conjunction with the exposure estimates to estimate cancer risk and evaluate hazard from noncancer toxicity of emitted chemicals. Under the Air Toxics Hot Spots (Hot Spots) Act, risk characterizations should present both individual and population-wide health risks (Health and Safety Code Section (HSC) 44306). Persons preparing HRAs for the Hot Spots Program should consult the local Air Pollution Control or Air Quality Management District (District) to determine if the District has special guidelines to assist with HRA format or other requirements of the Hot Spots Program.

OEHHA is recommending that a 30-year exposure duration be used as the basis for estimating cancer risk at the maximum exposed individual resident (MEIR) in the Hot Spots Program. This exposure duration represents the time of residency for 90 to 95% of Californians at a single location and should provide adequate public health protection against individual risk. We also recommend including the 9 and 70-year cancer risk at the MEIR as supplemental information. Note that a 70-year exposure duration is required to estimate cancer burden or provide an estimate of population-wide risk.

This chapter provides guidance on how to evaluate the risk characterization component of risk assessments required by the Hot Spots Program. A general summary of the risk characterization components includes the following items and information.

- The locations of the point of maximum impact (PMI), the MEIR, and the maximum exposed individual worker (MEIW) are to be identified. The PMI, MEIW, and MEIR for cancer risk and for noncancer hazard indices (averaging times for acute 1-hour, repeated 8-hour, and chronic hazard indices) may not be the same location; all should be identified.

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- The location of any specified sensitive receptors (e.g., schools, hospitals, daycare, or eldercare facilities - contact the District or reviewing authority for more information) should be identified
- Estimates of population-wide cancer risk and noncancer hazard

This information must be clearly presented in cross-referenced text, tables, figures, and maps. Chapter 9 provides an outline that specifies the content and recommended format of HRA results. The HARP software is the recommended model for calculating HRA results for the Hot Spots Program. Information on obtaining the HARP software can be found under the Air Toxics Program on the ARB's web site at www.arb.ca.gov.

8.1.1 *Tiered Approach to Risk Assessment*

The tiered approach for risk assessment that is presented in detail in the TSD (OEHHA, 2012) and summarized here should be reviewed prior to conducting the health risk assessment. The tiered approach to risk assessment and the health impacts evaluation described here are included in the HARP software.

The tiered approach provides a risk assessor with flexibility and allows consideration of site-specific differences (Table 8.1). The four-tiered approach to risk assessment is intended to primarily apply to residential cancer risk assessment, both for inhalation and noninhalation pathways. Risk assessors can tailor the level of effort and refinement of an HRA by using either the point estimate exposure assumptions as the basis of the exposure and risk assessment, or both the point estimate and a stochastic treatment of exposure factor distributions.

Table 8.1 The Tiered Approach to Risk Assessment

Tier	Description	When Applied
Tier 1	Utilizes OEHHA default point estimates of exposure variates	All risk assessments must include a Tier 1 assessment
Tier 2	Utilizes site-specific point estimates for exposure variates (justified, and approved by OEHHA)	A Tier 2 approach may be presented in addition to Tier 1
Tier 3	Utilizes OEHHA distributions of exposure variates	A Tier 3 approach may be presented in addition to Tier 1
Tier 4	Utilizes site-specific distributions of exposure variates (justified, and approved by OEHHA)	A Tier 4 approach may be presented in addition to Tier 1

Tier 1 is a standard point estimate approach that uses the recommended exposure variate (e.g., breathing or water ingestion rate) point estimates presented in this document. Derivations of these values are described in detail in OEHHA (2012). The results of the Tier 1 evaluations are required to be presented in the risk characterization section for all HRAs prepared for the Hot Spots Program. Thus, persons preparing an HRA using Tier 2 through Tier 4 evaluations must also include the risk characterization results of a Tier 1 evaluation in the HRA.

As discussed in OEHHA (2012), if the risk characterization results from a Tier 1 assessment are above a regulatory level of concern, the risk assessor may want to proceed with more site-specific analysis as described in Tier 2, or use a more resource-intensive stochastic modeling effort described in Tier 3 and Tier 4 (for cancer risk). While further evaluation may provide more information to the risk manager on which to base decisions, the Tier 1 evaluation is useful in comparing risks among a large number of facilities and must be included in all HRAs.

Tier 2 analysis allows the use of available and justifiable site-specific exposure variates (e.g., fish consumption), when presenting the potential health impacts. The site-specific information applied in a Tier 2 assessment must be adequately justified and approved by OEHHA and the District. In Tier 3, a stochastic approach to exposure assessment is taken using the distributions for the exposure pathways presented in the TSD (OEHHA, 2012) and in Chapter 5 of this Guidance Manual. The exposure distributions apply only to a residential receptor and are used only for the determination of cancer risk. OEHHA has not developed exposure intake distributions for workers to use in the offsite worker exposure scenario. Tier 4 is also a stochastic approach for the residential exposure scenario but allows for utilization of site-specific exposure variate distributions if they are justifiable and more appropriate for the site under evaluation than those derived in OEHHA (2012). Alternative site-specific distributions must be approved by OEHHA and the District. For an off-site worker cancer risk evaluation, Tiers 3 and 4 do not apply. Tier 3 and Tier 4 analyses show what a distribution of potential cancer risk may be to an individual or population based on a distribution of exposure inputs (e.g., water ingestion rate) rather than specific point estimates of exposure.

Table 8.2 summarizes OEHHA's recommendations for use of the four Tiers in cancer and noncancer risk assessment.

Table 8.2 Tiers for Residential and Offsite Worker Cancer and Noncancer Hot Spots Risk Assessments

Tier	Cancer		Non Cancer Chronic and 8-Hour	
	Inhalation	Noninhalation	Inhalation	Noninhalation
Tier-1	X	X	X	X
Tier-2	X	X		X[b]
Tier-3	X[a]	X[a]		
Tier-4	X[a]	X[a]		

[a] Applies to residential exposure scenario only
[b] Applies to chronic noncancer exposure only

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OEHHA has not developed a stochastic approach (Tier 3 or 4) for estimating noncancer health impacts using acute, 8-hour, and chronic Reference Exposure Levels (RELs). Tier 1 is the only option for determining noncancer health impacts from inhalation exposure since calculating the hazard quotient involves dividing the ground level air concentrations for the specified exposure duration by the appropriate RELs. However, chronic noninhalation noncancer risks involve a calculation of dose from oral or dermal pathways to which site-specific evaluations could be considered under a Tier 2 approach.

Small foot-print facilities – Tier 2 or Tier 4

Some facilities subject to the Air Toxics Hot Spots Act (e.g., some in the industry-wide categories such as gas stations or dry cleaners) have very small zones of impact. In some of these instances, there will be very few receptors within the zone of impact. It isn't possible to develop special recommendations for exposure variates for all possible exposure scenarios. Alternative breathing rates (point estimates or distributions) may be used as part of Tier 2 or Tier 4 risk assessments with appropriate supporting justification in the case of a very small zone of impact. OEHHA is willing to work with risk managers at ARB and the Districts on this issue.

8.2 Risk Characterization for Carcinogens

Cancer risk is calculated by multiplying the daily inhalation or oral dose (calculated in Chapter 5), by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home (for residents only), and the exposure duration divided by averaging time, to yield the excess cancer risk (see section 8.2.4). As described below, the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk at the receptor location. A brief description of the age sensitivity factors, exposure duration, and frequency of time spent at home are included in Sections 8.2.1 to 8.2.3 below. These factors are discussed in detail in OEHHA (2009) and OEHHA (2012).

8.2.1 *Adjustment for Early Life Stage Exposures to Carcinogens*

Studies have shown that young animals are more sensitive than adult animals to exposure to many carcinogens (OEHHA, 2009). Therefore, OEHHA developed age sensitivity factors (ASFs) to take into account the increased sensitivity to carcinogens during early-in-life exposure (Table 8.3). These factors were developed and described in detail in OEHHA (2009). In the absence of chemical-specific data, OEHHA recommends a default ASF of 10 for the third trimester to age 2 years, and an ASF of 3 for ages 2 through 15 years to account for potential increased sensitivity to carcinogens during childhood.

Table 8.3 Age Sensitivity Factors by Age Group for Cancer Risk Assessment

Age Group	Age Sensitivity Factor (unitless)
3rd Trimester	10
0<2 years	10
2<9 years	3
2<16 years	3
16<30 years	1
16-70 years	1

For specific carcinogens where data indicate enhanced sensitivity during life stages other than the immediate postnatal and juvenile periods, or for which data demonstrate ASFs different from the default ASFs, the chemical-specific data should be used in order to adequately protect public health.

The risk assessments generated under the Air Toxics Hot Spots Act are reviewed by OEHHA. If a risk assessor had data indicating there are no windows of susceptibility early in life or that a different ASF should be used for a specific carcinogen and wanted to use these data, OEHHA would review the material as part of the review of the risk assessment.

8.2.2 *Fraction of Time Spent at Home for Cancer Risk Assessment*

OEHHA and ARB evaluated information from activity patterns databases to estimate the fraction of time at home (FAH) during the day (OEHHA, 2012). This information can be used to adjust exposure duration and cancer risk from a specific facility's emissions, based on the assumption that exposure to the facility's emissions are not occurring away from home. From the third trimester to age <2 years, 85% of time is spent at home (Table 8.4). From age 2 through <16 years, 72% of time is spent at home. From age 16 years and greater, 73% of time is spent at home. Facilities with any school within the 1×10^{-6} (or greater) isopleth should use FAH = 1 for the child age groups (3rd Trimester, 0<2 years, and 2<16 years). See Appendix I for an example calculation using the FAH.

Table 8.4 Recommendations for Fraction of Time at Home (FAH) for Evaluating Residential Cancer Risk

Age Range	Fraction of Time at Residence
3rd Trimester, and 0<2 years	0.85[1]
2<16 years[2]	0.72[1]
16-70 years[3]	0.73

[1] Use FAH = 1 if a school is within the 1×10^{-6} (or greater) cancer risk isopleth

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[2] Also use FAH = 0.72 for 2<9 yr age group.
[3] Also use FAH = 0.73 for 16<30 yr age group.

The FAH is calculated based on a diary of trips taken over a 24-hour period on the survey day. Ninety-five percent of the diary days were on weekdays. Participants can select "vacation" as one of their trips. However, vacation time represented only a fraction (0.68%) of the over 175,000 trips recorded in the survey. Because much of these vacation trips were presumed to be within-day trips and were only a small fraction of total trips, there is likely little overlap with the Exposure Frequency (EF) variate used in the dose equations in Chapter 5.

8.2.3 *Exposure Duration for Estimating Cancer Risk to Residents and Off-Site Workers*

OEHHA recommends that an exposure duration (residency time) of 30 years be used to estimate individual cancer risk for the maximally exposed individual resident (MEIR) (Table 8.5). OEHHA also recommends that the 30-year exposure duration be used as the basis for public notification and risk reduction audits and plans. The Districts, however, may opt to use the 70 year cancer risk for notification and risk reduction audits and plans.

Note that the 30-year exposure duration starts in the third trimester to accommodate the increased susceptibility of exposures in early life (OEHHA, 2009), and would apply to both the point estimate and stochastic approaches.

Table 8.5 Summary of Recommendations for Exposure Duration for Individual Cancer Risk at the MEIR and MEIW

Receptor	*Recommendation*
Resident (MEIR)	30 years
Resident (supplemental Information)	9 years for central tendency; 70 years for maximum (lifetime)
Worker (MEIW)	25 years

Exposure durations of 9-years and 70-years are also recommended to be evaluated for the MEIR to show the range of cancer risk based on residency periods. If a facility is notifying the public regarding cancer risk, the 9- and 70-year cancer risk estimates are useful for people who have resided in their current residence for periods shorter and longer than 30 years.

The 9-, 30-, and 70-year exposures are chosen to coincide with U.S. EPA's estimates of the average (9 years), high-end estimates (30-years) of residence time, and a lifetime residency (70 years). These estimates are also consistent with what is known about residence time in California. Together, the 9-, 30-, and 70-year cancer risk calculations provide a useful presentation of cancer risk and the relationship to duration of residency and, thus, exposure to a facility's emissions.

For the maximally exposed individual worker (MEIW), OEHHA recommends using an exposure duration of 25 years to estimate individual cancer risk for the off-site worker scenario (Table 8.5). This duration represents approximately the 95th percentile of job tenure with the same employer in the U.S.

8.2.4 *Calculating Residential and Offsite Worker Inhalation Cancer Risk*

Residential Receptors

For residential inhalation exposure, cancer risk must be separately calculated for specified age groups (Eq. 8.2.4A, see Section 8.2.1), because of age differences in sensitivity to carcinogens and age differences in intake rates (per kg body weight). Separate risk estimates for these age groups provide a health-protective estimate of cancer risk by accounting for greater susceptibility in early life, including both age-related sensitivity and amount of exposure. The following equation illustrates the formula for calculating residential inhalation cancer risk. See Appendix I for a detailed example calculation.

A. Equation 8.2.4 A: $$RISK_{inh\text{-}res} = DOSE_{air} \times CPF \times ASF \times ED/AT \times FAH$$

7. $RISK_{inh\text{-}res}$ = Residential inhalation cancer risk
8. $DOSE_{air}$ = Daily inhalation dose (mg/kg-day)
9. CPF = Inhalation cancer potency factor ($mg/kg\text{-}day^{-1}$)
10. ASF = Age sensitivity factor for a specified age group (unitless)
11. ED = Exposure duration (in years) for a specified age group
12. AT = Averaging time for lifetime cancer risk (years)
13. FAH = Fraction of time spent at home (unitless)

a: Recommended default values for EQ 8.2.4 A:

5. $DOSE_{air}$ = Calculated for each age group from Eq. 5.4.1
6. CPF = Substance-specific (see Table 7.1)
7. ASF = See Section 8.2.1
8. ED = 0.25 years for 3rd trimester, 2 years for 0<2, 7 years for 2<9, 14 years for 2<16, 14 years for 16<30, 54 years for 16-70
9. AT = 70 years*
10. FAH = See Table 8.4

*Although AT actually sums to 70.25 years when the 3rd trimester (0.25 years) is included, OEHHA recommends rounding AT = 70 years (and rounding residential exposure durations at 9- and 30-years rather than 9.25- and 30.25-years) to simplify the calculation without causing a significant adjustment. Note that the dose for the 3rd trimester is based on the breathing rate of pregnant women using the assumption that the dose to the fetus during the 3rd trimester is the same as that to the mother.

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Cancer risks calculated above for individual age groups are summed to estimate cancer risk for 9-, 30- and 70-year exposures as shown below. Note that this example includes the Fraction of Time Spent at Home (FAH) for each age grouping.

Calculation of Inhalation Cancer Risk from the Third Trimester to Age Nine:

$$RISK_{inh\text{-}res} = (DOSE_{air}\ third\ trimester \times CPF \times 10 \times 0.25/70\ years \times FAH_{3rd\ tri\ <2}) + (DOSE_{air}\ age\ 0<2 \times CPF \times 10 \times 2/70 \times FAH_{3rd\ tri\ <2}) + (DOSE_{air}\ age\ 2<9 \times CPF \times 3 \times 7/70\ years \times FAH_{2<9})$$

Calculation of Inhalation Cancer Risk from Third Trimester to Age 30:

$$RISK_{inh\text{-}res} = (DOSE_{air}\ third\ trimester \times CPF \times 10 \times 0.25/70\ years \times FAH_{3rd\ tri\ <2}) + (DOSE_{air}\ age\ 0<2 \times CPF \times 10 \times 2/70 \times FAH_{3rd\ tri\ <2}) + (DOSE_{air}\ age\ 2<16 \times CPF \times 3 \times 14/70 \times FAH_{2<16}) + (DOSE_{air}\ age\ 16<30 \times CPF \times 1 \times 14/70\ years \times FAH_{16\text{-}30})$$

Calculation of Inhalation Cancer Risk from Third Trimester to Age 70:

$$RISK_{inh\text{-}res} = (DOSE_{air}\ third\ trimester \times CPF \times 10 \times 0.25/70\ years \times FAH_{3rd\ tri\ <2}) + (DOSE_{air}\ age\ 0<2 \times CPF \times 10 \times 2/70 \times FAH_{3rd\ tri\ <2}) + (DOSE_{air}\ age\ 2<16 \times CPF \times 3 \times 14/70 \times FAH_{2<16}) + (DOSE_{air}\ age\ 16<70 \times CPF \times 1 \times 54/70\ years \times FAH_{16\text{-}70})$$

Expressing cancer risk in "chances per million" is useful as a risk communication tool for the public, but cancer risk can also be expressed in other ways, such as "chances per 100,000" (cancer risk × 10^5) or "chances per 10 million" (cancer risk × 10^7). To convert the resulting cancer risk estimate to chances of developing cancer per million individuals exposed, multiply the cancer risk by 10^6:

$$Cancer\ risk \times 10^6 = chances\ per\ million$$

For exposure to multiple carcinogenic substances, Table 8.7 and Table I.5 in Appendix I are examples of how cancer risks of individual substances are summed to determine the total cancer risk.

Worker Receptors

For assessment of off-site worker cancer risk at the MEIW, the default assumes working age begins at 16 years. Note that the residential FAH factor in Eq. 8.2.4.A above does not apply for workers. The daily inhalation dose ($DOSE_{air}$) (as calculated in Chapter 5, EQ 5.4.1.2) is based on the adjusted 8-hour concentration at the MEIW (for non-continuous sources) and amount of time the offsite worker's schedule overlaps with the facility's emission schedule. The duration of exposure at the MEIW receptor is 25 years, as discussed in the TSD (OEHHA, 2012).

B. Equation 8.2.4 B: $RISK_{inh\text{-}work} = DOSE_{air} \times CPF \times ASF \times ED/AT$

1. $RISK_{inh\text{-}work}$ = Worker inhalation cancer risk

a: Recommended default values for EQ 8.2.4 B:

1. $DOSE_{air}$ = Calculated for workers in Eq. 5.4.1.2
2. CPF = Substance specific (see Table 7.1)
3. ASF = 1 for working age 16-70 yrs (See Section 8.2.1)
4. ED = 25 years
5. AT = 70 yrs for lifetime cancer risk

Work Locations with Daycare Facilities:

An additional risk management consideration for offsite worker cancer risk assessment of a Hot Spots facility is whether there are women of child bearing age at the MEIW location and whether the MEIW has a daycare center. In the case of women of child-bearing age at the MEIW, the Districts may wish to treat the off-site MEIW in the same way as the residential scenario to account for the higher susceptibility during the third trimester of pregnancy (i.e., use of an ASF=10 for third trimester exposure). If there is onsite daycare at the MEIW, then the risks to the children will be underestimated using the offsite adult worker scenario. In this case, the Districts may wish to include a cancer risk assessment for the children in the onsite daycare, assuming they could be there from 0 to age 6 years (ED = 6 years) and using the appropriate exposure factors to calculate $DOSE_{air}$, fraction of time at worksite (e.g., hrs at daycare per 24 hrs), and ASFs in EQ 8.2.4 B to account for the higher susceptibility of infants and children to carcinogens.

Children at a MEIW daycare may also be assessed for noninhalation exposures. Typically, soil ingestion and dermal exposure will be the most common noninhalation pathways. However, all pathways that are present at the daycare should be included. See section 8.2.6 for more discussion of multipathway risk assessment methods.

8.2.5 *Calculation of Noninhalation Cancer Risk*

A small subset of Hot Spots substances is subject to deposition onto the soil, plants, and water bodies (see Table 5.1). These substances need to be evaluated by the appropriate noninhalation pathways, as well as by the inhalation pathway, and the risk characterization results must be presented in all HRAs. These substances include semi-volatile organic chemicals and heavy metals.

For all multipathway substances, the exposure pathways that must be evaluated at every residential and worker site (in addition to inhalation) are soil ingestion and dermal exposure. If PAHs (and creosotes), lead, dioxins, furans, or PCBs are emitted, then the breast-milk consumption pathway becomes mandatory for residential receptors. OEHHA has developed transfer coefficients for these chemicals from the mother to breast milk (see OEHHA, 2012 for details). The other exposure pathways (e.g.,

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ingestion of homegrown produce or fish) are only evaluated for residential receptors if the facility impacts that exposure medium and the receptor under evaluation can be exposed to that medium or pathway. For example, if the facility does not impact a fishable body of water within the isopleth of the facility, or the impacted water body does not sustain fish that are consumed by fishers, then the fish pathway will not be considered for that facility or receptor.

Table 8.6 identifies the residential receptor exposure pathways that are mandatory and those that are dependent on the available routes of exposure. Table 8.6 also identifies the three exposure pathways that are relevant for a worker receptor. The cancer risk estimates should be presented in the risk characterization section of the risk assessment for all the appropriate pathways.

Table 8.6 Mandatory and Site/Route Dependent Exposure Pathways

Mandatory Exposure Pathways	Site/Route Dependent Exposure Pathways
• Inhalation[w] • Soil Ingestion[w] • Dermal Exposure to Contaminated Soil[w] • Breast Milk Consumption[*]	• Homegrown Produce Ingestion • Angler-Caught Fish Ingestion • Drinking Water Ingestion • Home-Raised Animal Product Ingestion (Dairy (Cow's) Milk, Meat (Beef, Pork, Chicken) and Egg).

(w) Identifies the appropriate exposure pathways that should be evaluated for a worker. These pathways are inhalation, dermal exposure, and the soil ingestion pathway.
(*) If PAHs (including creosotes), lead, dioxins, furans, or PCBs are emitted, then the breast-milk consumption pathway becomes mandatory.

The noninhalation residential cancer risk is calculated using the same steps as inhalation cancer risk described in Section 8.2.4. A dose (see Chapters 4 and 5) from the pathway under evaluation (e.g., soil ingestion) is multiplied by the substance-specific oral slope factor, expressed in units of inverse dose (i.e., $(mg/kg/day)^{-1}$) (Table 7.1), the appropriate age sensitivity factor (ASF), and exposure duration divided by averaging time to yield the cancer risk for a specified age grouping. Cancer risk for each age group is summed as appropriate for the exposure duration. The FAH factor is relevant only to the inhalation pathway and is not appropriate to use in the noninhalation pathways.

Equation 8.2.5 illustrates the formula for calculating noninhalation cancer risk. Details (data, algorithms, and guidance) for each exposure pathway are presented in Chapter 5 and in OEHHA (2012).

A. Equation 8.2.5: $RISK_{noninh} = DOSE_{noninh} \times CPF_{oral} \times ASF \times ED/AT$

1. $RISK_{noninh}$ = Noninhalation pathway cancer risk
2. $DOSE_{noninh}$ = Daily dose (mg/kg-day) for a specified non-inhalation pathway for each age group
3. CPF_{oral} = Oral cancer potency (slope) factor ($mg/kg\text{-}day^{-1}$)
4. ASF = Age sensitivity factor for a specified age group (unitless)
5. ED = Exposure duration (in years) for a specified age group
6. AT = Averaging time for lifetime cancer risk

a: Recommended default values for EQ 8.2.5:

1. $DOSE_{noninh}$ = Calculated in Chapter 5 dose algorithms for each age group and for each noninhalation route in Table 8.6 the receptor is exposed to
2. CPF_{oral} = Substance-specific (see Table 7.1)
3. ASF = See Section 8.2.1
4. ED = Residents: 0.25 years for 3rd trimester, 2 years for 0<2, 7 years for 2<9, 14 years for 2<16, 14 years for 16<30, 54 years for 16-70
   = Offsite worker: 25 yrs
5. AT = 70 years

Estimating cancer risk for 9-, 30- and 70-years by summing the individual age-group cancer risks is the same as that shown for the inhalation route in Section 8.2.4. The exception is that the FAH variate is only appropriate for the residential inhalation pathway and is not a factor for oral and dermal exposure pathways.

Calculation of Noninhalation Cancer Risk from Third Trimester to Age 30:

$RISK_{noninh\text{-}res}$ = ($DOSE_{noninh}$ third trimester × CPF × 10 × 0.25/70 years) + ($DOSE_{noninh}$ age 0<2 × CPF × 10 × 2/70) + ($DOSE_{noninh}$ age 2<16 × CPF × 3 × 14/70) + ($DOSE_{noninh}$ age 16<30 × CPF × 1 × 14/70 years)

To convert this estimated probability of risk to chances per million of developing cancer, multiply the estimated cancer risk for each noninhalation exposure route by 10^6. This result is useful communication tool to compare risks for each pathway of exposure.

Cancer risk x 10^6 = cancer risk expressed as chances per million

For assessment of the offsite worker the typical noninhalation pathways that apply for worker cancer risk are the dermal exposure pathway and the soil ingestion pathway.

Children at a MEIW daycare may also be assessed for noninhalation exposures. Typically, soil ingestion and dermal exposure will be the most common noninhalation pathways. However, all pathways that are present at the daycare should be included.

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8.2.6 *Multipathway Cancer Risk Methodology*

Under a Tier 1 assessment, it is necessary to calculate the total cancer risk from both inhalation and noninhalation exposures if multipathway substances are emitted from the facility. The calculation of cancer risk that includes exposure to a multipathway substance or substances has three steps:

1) Calculate cancer risk for the inhalation pathway (EQ 8.2.4 A for residents, EQ 8.2.4 B for off-site workers) for all substances, and the noninhalation pathways that apply (EQ 8.2.5) for all multipathway substances, using high-end point estimates of intake rates.
2) For each multipathway substance, identify the two exposure pathways with the highest risk. These are the dominant pathways that are to be assessed using high-end point estimates of intake rates for the total cancer risk. For all other pathways, the average point estimate of intake rates may be used to calculate the pathway cancer risk (See OEHHA (2012) for more information).
3) To calculate total cancer risk, all inhalation and noninhalation pathways are summed together for all substances.

The final cancer risk calculation using a combination of high-end and average exposure parameters is referred to as the derived risk in the HARP software. This is described in Chapter 1, Section 1.4.1 of OEHHA (2012). The inhalation route is almost always one of the two dominant pathways in a multipathway cancer risk assessment. Therefore, in most cases only one noninhalation pathway would be calculated using a high-end dose point estimate. For all other pathways, the average point estimate may be used to calculate the pathway cancer risk.

For example, if dermal exposure and soil ingestion risks are calculated, then the cancer risks from these pathways would be summed along with the inhalation cancer risks to give the total cancer risk for the single multipathway substance:

Cancer Risk (inhalation) + Cancer Risk (dermal) + Cancer Risk (soil) = Total Risk

The mother's milk pathway also becomes a mandatory pathway to assess risk in nursing infants if the mother is exposed to specific substances (see Table 5.1).

Many facilities will emit multiple carcinogenic substances. If multiple substances are emitted, the substance-specific cancer risks for all exposure pathways are summed to give the (total) multipathway cancer risk at the receptor location. The HARP software will display not only the multipathway risk for each carcinogenic substance, but also show a breakdown of the cancer risk from each exposure pathway. Table 8.7 shows the results of a multipathway risk assessment for a hypothetical facility. While not presented in the following table, it is critical to identify the driving exposure pathways and the driving substances in a multipathway cancer risk assessment when summarizing and presenting the HRA results. See Chapter 9 for more information.

Table 8.7 Multipathway Assessment of a Hypothetical Facility 30-Year Cancer Risk

Substance	Cancer Risk[a]	Cancer risk[b] (chances per million)
Arsenic	1.1×10^{-5} (i) 3×10^{-7} (ni)	11 (i) 0.3 (ni)
Benzene	2.92×10^{-4} (i)	292 (i)
2,3,7,8-TCDD (dioxin)	1.06×10^{-4} (i) 5.7×10^{-5} (ni)	106 (i) 57 (ni)
1,3-Butadiene	6.0×10^{-6} (i)	6 (i)
Total Facility Cancer Risk	**4.723×10^{-4}**	**472**

[a] As calculated in EQ 8.2.4 A or EQ 8.2.5
[b] Calculated as: cancer risk × 10^6 = chances per million
i = inhalation pathway contribution
ni = noninhalation pathway contribution

Cancer risk in Table 8.7 for the multipathway substances, arsenic and 2,3,7,8-TCDD, is arranged by the inhalation pathway risk and the sum of all noninhalation pathway risks. The total facility multipathway cancer risk is the sum of all inhalation and noninhalation pathways.

Cancer risks from different substances are treated additively in risk assessment generally, and in the Hot Spots Program in part because many carcinogens act through the common mechanism of DNA damage. The additive assumption is reasonable from a public health point of view. Other possible interactions of multiple carcinogens include synergism (effects are greater than additive) or antagonism (effects are less than additive). The type of interaction is both chemical and dose dependent and in most cases the data are not available to adequately characterize these interactions.

8.2.7 *Multipathway Cancer Risk for Infant Exposure to Mother's Milk*

The mother' milk pathway becomes mandatory if the nursing mother is exposed to one or more of the following multipathway substances: dioxins and furans, PCBs, PAHs including creosotes, and lead. The default assumption inherent in the intake rate is that the infant's only source of food is breast for the first year (e.g., is fully breastfed, see OEHHA, 2012, for details), which is one-half of the 0<2 year age group used in the Hot Spots program. Thus, the cancer risk by the mother's milk pathway will need to be calculated with a modified cancer risk equation using a different exposure duration:

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A. Equation 8.2.7: $\mathbf{RISK_{mm} = Dose\text{-}Im \times CPF_{oral} \times ASF \times ED/AT}$

1. $RISK_{mm}$ = Infant cancer risk via mother's milk pathway
2. Dose-Im = Daily dose (mg/kg-day) to infant from mother's milk
3. CPF_{oral} = Oral cancer slope factor (mg/kg-day^{-1})
4. ASF = Age sensitivity factor for infant (unitless)
5. ED = Exposure duration (in years) for infant
6. AT = Averaging time for lifetime cancer risk

a: Recommended default values for EQ 8.2.7:

6. Dose-Im = Calculated from EQ 5.4.3.5.2, dose to infant via mother's milk
7. CPF_{oral} = Substance-specific (see Table 7.1)
8. ASF = 10 (See Section 8.2.1)
9. ED = 1 yr (1st yr of 0<2 yr age group)
10. AT = 70 years

Once the cancer risk is determined for the mother's milk pathway for each applicable substance, the pathway risk is summed with other pathway risks.

For Tier 1, the derived approach for cancer risk assessment should be used if the mother's milk pathway applies. As outlined in Section 8.2.6, the two dominant pathways will be calculated using high-end point estimates of intake rates; all additional pathways may be calculated using average point estimates of intake rates. There will be four mandatory pathways to assess (inhalation, mother's milk, soil ingestion and dermal exposure) for cancer risk when exposure to dioxins/furans, PCBs, PAHs including creosotes, and/or lead occurs. Therefore, if the infant is exposed to no other additional site-specific noninhalation pathway(s), only the two dominant pathways among the four will be assessed for cancer risk using high-end point estimates of intake rates; and the others would be assessed using the average point estimate of intake rate.

In short, multipathway cancer risk for a substance is estimated by summing the potential inhalation and noninhalation cancer risks for the receptor location of interest. See the discussion of Tier 1 in Section 8.2.6 or the TSD for more information on the method used to determine the multipathway cancer risk.

8.2.8 *Cancer Risk Characterization for Stochastic Risk Assessment*

Risk characterization for a stochastic risk assessment is similar to that described for the point-estimate approach. However, the stochastic risk assessment produces a distribution of risk that accounts for some of the natural variability in exposure-related factors, such as breathing rates or water intake. The cancer risk distribution for inhalation cancer risk, for example, is generated by multiplying randomly selected values from the breathing rate distribution by the ground level air concentration, and the cancer potency factor. A variation of the Monte Carlo method called Latin hypercube sampling is the method by which the values from the breathing rate distribution are

selected. If noninhalation pathways need to be evaluated, the same process is followed for each pathway and the risk is summed to give an overall inhalation and noninhalation cancer risk distribution. Further, the specification of Age Sensitivity Factors and the need to separately calculate risks require that a Monte Carlo sampling be conducted for each age group and the cancer risk distributions are then summed across age groups.

The HARP software will perform an HRA using a Monte Carlo analysis with either OEHHA-provided or user-provided data distributions and will include the statistics for the distributions. In risk assessments that have chosen to use the distribution of exposure variates, the cancer risk distribution for a 30-year residential exposure duration (MEIR) should be presented in the risk characterization section We also recommend including the 9 and 70-year cancer risk at the MEIR as supplemental information. Note that a 70-year exposure duration is required to estimate cancer burden or provide an estimate of population-wide risk. A stochastic approach has not been developed for acute, 8-hour, and chronic noncancer health impacts or worker (MEIW) exposures.

8.2.9 *Use of Individual Cancer Risk and Population-wide Cancer Risk*

Cancer risk for an individual receptor and a representation of population-wide cancer risk are both important components of a risk assessment. The individual receptor approach reflects the exposures that may occur to an individual receptor over a period of time at a specific location. The individual cancer risk approach has some inherent limitations in terms of illustrating and potentially protecting population-based public health. For example, a facility with a small emissions footprint may impact a few individuals with a high individual potential cancer risk; whereas, a facility with a larger emission footprint may have a lower potential cancer risk for an individual receptor but expose many more people to those levels. Since this larger emitting facility can impact many more people, the population-wide health impacts are magnified due to the larger number of people exposed to the facility's emissions. This potential for higher population impacts is not captured by the individual receptor risk methodology. Therefore, the individual and population-wide heath impacts should be presented for all facilities to provide a more complete illustration of the facility's health impacts.

8.2.9.1 Population Risk

For facilities with large emission footprints (e.g., refineries, ports, or rail yards, etc.), population-based health impacts are critical to provide a better illustration of the potential impacts of emissions since large numbers of people may be exposed to the emissions. The individual cancer risk approach has some inherent limitations in terms of protecting public health. A small facility with a single stack can impact a few individuals with an individual cancer risk that is unacceptable, whereas a large facility may have an individual cancer risk that is below the acceptable limit for individual risk but exposes many more people. Thus, the population-wide impacts are larger for the large facility. Population-wide risk is independent of individual risk, and assumes that a population (not necessarily the same individuals) will live in the impacted zone over a

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70-year period. Thus, a 70-year exposure duration is required for estimates of population-wide risks.

To evaluate population risk, one method that regulatory agencies have used is the cancer burden method to account for the number of excess cancer cases that could occur in a population.

Cancer Burden

The cancer burden can be calculated by multiplying the cancer risk at a census block centroid by the number of people who live in the census block, and adding up the estimated number of potential cancer cases across the zone of impact. The result of this calculation is a single number that is intended to estimate of the number of potential cancer cases within the population that was exposed to the emissions for a lifetime (70 years).

The cancer burden is calculated on the basis of lifetime (70-year) risks (whereas individual cancer risk at the MEIR is based on 30-year residential exposure). Cancer burden is independent of how many people move in or out of the vicinity of an individual facility. For example, if 10,000 people are exposed to a carcinogen at a concentration with a 1×10^{-5} cancer risk for a lifetime the cancer burden is 0.1, and if 100,000 people are exposed to a 1×10^{-5} risk the cancer burden is 1.

Estimate of Population Wide Risk

An estimate of the number of people exposed at various cancer risk levels can provide perspective on the magnitude of the potential public health threat posed by a facility. This approach is intended as a replacement for or addition to the cancer burden calculation used by some Districts in the past. The new approach provides a much easier way for the general public to interpret results when compared to cancer burden estimates. A facility in a sparsely populated area can have a public health impact different from the same facility in a highly populated area; however, under the cancer burden method, those differences may not be seen. Some suggested approaches and methods for performance of a screening or refined population exposure analyses are provided in Section 4.6.

The District or reviewing authority should be consulted before beginning the population exposure estimates and, as results are generated, further consultation may be necessary. Note that a 70-year exposure duration is required to estimate cancer burden or provide an estimate of population-wide risk.

The zone of impact for estimating the number of persons exposed to a cancer risk from facility emissions should be set at a minimum of a 10^{-6} cancer risk level (see Section 4.6.1). Some Districts may prefer to use a cancer risk of 10^{-7} to define the carcinogenic zone of impact. The total number of persons exposed to a series of potential risk levels can be presented to aid risk managers in understanding the magnitude of the potential public health impacts.

The HARP software can provide population-level risk estimates as cancer burden or as the number of persons exposed to a selected (user-identified) cancer risk level at block level centroids.

8.2.9.2 Population Estimates for Noncancer Health Impacts

A noncancer chronic, 8-hour, and acute population estimate of the number of people exposed to acute, 8-hour, and chronic HQs or HIs exceeding 0.5 or 1.0, in increments of 1.0, should also be presented. For example, a facility with a maximum chronic HI of 4.0 would present the number of people exposed to a chronic HI of 0.5, 1.0, 2.0, 3.0, and 4.0. The isopleths used in this determination should be drawn using the smallest feasible grid size. The same methods that are described in Chapter 4 and Section 8.2.9 (for the population exposure estimate for cancer risk) should be used in the chronic, 8-hour and acute population estimates. Population estimates for acute, 8-hour, and chronic health impacts should be presented separately.

8.2.9.3 Factors That Can Impact Population Risk – Cumulative Impacts

Although the Hot Spots program is designed to address the impacts of single facilities and not aggregate or cumulative impacts, there are a number of known factors that influence the susceptibility of the exposed population and thus may influence population risk. Socioeconomic status influences access to health care, nutrition, and outcome after cancer diagnosis. Community unemployment can affect exposure and residency time near a facility. Factors that affect the vulnerability of the population are discussed in the report *Cumulative Impacts: Building a Scientific Foundation* (OEHHA, 2010). Information on many of these factors is relatively easy to obtain at the census tract level. The OEHHA recommends that these types of factors be considered by the risk manager, along with the quantitative measures of population risk. OEHHA is in the process of developing guidance on quantification of the impact of these factors.

8.2.10 *Cancer Risk Evaluation of Short Term Projects*

The local air pollution control districts sometimes use the risk assessment guidelines for the Hot Spots program in permitting decisions for short-term projects such as construction or waste site remediation. Frequently, the issue of how to address cancer risks from short-term projects arises.

Cancer potency factors are based on animal lifetime studies or worker studies where there is long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime. There are some studies indicating that dose rate changes the potency of a given dose of a carcinogenic chemical. In others words, a dose delivered over a short time period may have a different potency than the same dose delivered over a lifetime.

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The OEHHA's evaluation of the impact of early-in-life exposure has reduced some of the uncertainty in evaluating the cancer risk to the general population for shorter-term exposures, as it helps account for susceptibility to carcinogens by age at exposure (OEHHA, 2009).

Due to the uncertainty in assessing cancer risk from very short-term exposures, we do not recommend assessing cancer risk for projects lasting less than two months at the MEIR. We recommend that exposure from projects longer than 2 months but less than 6 months be assumed to last 6 months (e.g., a 2-month project would be evaluated as if it lasted 6 months). Exposure from projects lasting more than 6 months should be evaluated for the duration of the project. In all cases, for assessing risk to residential receptors, the exposure should be assumed to start in the third trimester to allow for the use of the ASFs (OEHHA, 2009). Thus, for example, if the District is evaluating a proposed 5-year mitigation project at a hazardous waste site, the cancer risks for the residents would be calculated based on exposures starting in the third trimester through the first five years of life.

For the MEIW, we recommend using the same minimum exposure requirements used for the residential receptor (i.e., no evaluation for projects less than 2 months; projects longer than 2 months but less than 6 months are assumed to last 6 months; projects longer than 6 months would be evaluated for the duration of the project). Although the off-site worker scenario assumes that the workers are 16 years of age or older with an Age-Sensitivity Factor of 1, another risk management consideration for short-term project cancer assessment is whether there are women of child bearing age at the worksite and whether the MEIW receptor has a daycare center. In this case, the Districts may wish to treat the off-site MEIW in the same way as the residential scenario to account for the higher susceptibility during the third trimester of pregnancy, and for higher susceptibility of infants and children.

Finally, the risk manager may want to consider a lower cancer risk threshold for risk management for very short-term projects. Typical District guidelines for evaluating risk management of Hot Spots facilities range around a cancer risk of 1 per 100,000 exposed persons as a trigger for risk management. Permitting thresholds also vary for each District. There is valid scientific concern that the rate of exposure may influence the risk – in other words, a higher exposure to a carcinogen over a short period of time may be a greater risk than the same total exposure spread over a much longer time period. In addition, it is inappropriate from a public health perspective to allow a lifetime acceptable risk to accrue in a short period of time (e.g., a very high exposure to a carcinogen over a short period of time resulting in a 1×10^{-5} cancer risk). Thus, consideration should be given for very short term projects to using a lower cancer risk trigger for permitting decisions.

8.3 Noncancer Acute, 8-Hour, and Chronic Inhalation Health Impacts – the Hazard Index Approach

All substances in the Hot Spots Program that have noncancer health impacts at a receptor must be evaluated through the inhalation pathway. Estimates of noncancer inhalation health impacts are determined by dividing an airborne concentration at the receptor by the appropriate Reference Exposure Level (REL). This is termed the Hazard Index Approach. A REL is used as an indicator of potential noncancer health impacts and is defined as the concentration at which no adverse noncancer health effects are anticipated. When a health impact calculation is performed for a single substance, then it is called the hazard quotient (HQ). Each REL for a substance will have one or more target organ systems (e.g., respiratory system, nervous system, etc.) where the substance can have a noncancer health impact. Thus, all HQs have specified target organ systems associated with them. The sum of the Hazard Quotients of all chemicals emitted that impact the same target organ is termed the Hazard Index. Inhalation RELs for noncancer health impacts have been developed for acute, 8-hour, and chronic exposures to a number of Hot Spots substances. Acute RELs are designed to protect against the maximum 1-hour ground level concentration at the receptor. Eight-hour RELs are designed to protect people with daily 8-hour schedules, such as offsite workers, in an impacted zone. The 8-hour RELs should be used for typical daily work shifts of 8-9 hours. For further questions, assessors should contact OEHHA, the District, or reviewing authority to determine if the 8-hour RELs should be used in your HRA. Any discussions or directions to exclude the 8-hour REL evaluation should be documented in the HRA. Chronic RELs protect against long-term exposure to the annual average air concentration spread over 24 hours/day, 7 days/week.

OEHHA has added 8-hour RELs to the set of noncancer RELs that were previously comprised of acute and chronic RELs (OEHHA, 2008). Specifically, 8-hour RELs are air concentrations at or below which health impacts would not be expected even for sensitive subpopulations in the general population with repeated daily 8-hour exposures over a significant fraction of a lifetime. The 8-hour RELs can be used to evaluate the potential for health impacts (including effects of repeated exposures) in offsite workers, and to children and teachers exposed during school hours. Although not required in the HRA, they could also be applied by the Districts to a residential scenario where a facility operates only a portion of the day and exposure to residences is not adequately reflected by averaging concentrations over a 24 hour day. The number of chemicals with 8-hour RELs will increase as OEHHA re-evaluates RELs for chemicals under SB-25 to ensure that they are protective of children's health.

Acute, 8-hour, and chronic RELs are needed because the dose metrics and even the health impact endpoints may be different with the different exposure durations of acute, daily 8-hour, and chronic exposures. Also, although chronic REL values are lower or set the same as 8-hour RELs, there are some cases such as special meteorological situations (e.g., significant diurnal-nocturnal meteorological differences) or intermittent exposures where the 8-hour REL may be more protective than the chronic REL.

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Chapter 4 describes air dispersion modeling and both Chapter 6 and Appendix L list the needed dose-response information to evaluate non-cancer hazards. Appendix I presents sample calculations for determining acute HQs and HIs, 8-hour HQs and HIs, and chronic multipathway HQs and HIs. Chapter 9 provides an outline of information required for risk characterization. The HARP software will calculate the HQ and HI for Hot Spots risk assessments.

8.3.1 *Calculation of Noncancer Inhalation Hazard Quotient and Hazard Index*

To calculate the acute HQ, the maximum 1-hour ground level concentration (in $\mu g/m^3$) of a substance at a receptor is divided by the acute 1-hour REL (in $\mu g/m^3$) for the substance:

$$\text{Acute Hazard Quotient} = \frac{\text{1-Hour Max Concentration } (\mu g/m^3)}{\text{Acute REL } (\mu g/m^3)}$$

To calculate the chronic HQ, the annual average ground level concentration of a substance is divided by the chronic REL for the substance:

$$\text{Chronic Hazard Quotient} = \frac{\text{Annual Average Concentration } (\mu g/m^3)}{\text{Chronic REL } (\mu g/m^3)}$$

To calculate the 8-hour HQ, the adjusted annual average ground level concentration of a substance (represented as "Adjusted C_{air}" in EQ 5.4.1.4 A) is divided by the 8-hour REL for the substance:

$$\text{8-hour Hazard Quotient} = \frac{\text{Adjusted Annual Average Concentration } (\mu g/m^3)}{\text{8-hour REL } (\mu g/m^3)}$$

The daily 8-hour average ground level concentrations used for calculating the 8-hour HQs are derived as described in Chapter 4.

An HQ of 1.0 or less indicates that adverse health effects are not expected to result from exposure to emissions of that substance. As the HQ increases above one, the probability of human health effects increases by an undefined amount. However, it should be noted that a HQ above one is not necessarily indicative of health impacts due to the application of uncertainty factors in deriving the RELs.

If a receptor is exposed to multiple substances that target the same organ system, then the HQs for the individual substances are summed to obtain a Hazard Index (HI) for that target organ.

Table 8.8 is an example of an HRA spreadsheet showing acute inhalation HQs arranged by target organ system for several substances. The bottom row shows the summed HQs by target organ system to derive the HIs.

Table 8.8 Individual Hazard Quotients and Total Hazard Index for Acute Inhalation Exposure

Substance	Reproductive/ Developmental	Nervous System	Cardiovascular System	Respiratory System	Eye
Ammonia				0.6	0.6
Arsenic	0.2	0.2	0.2		
Benzene	0.02				
Chlorine				0.7	0.7
Total Hazard Index	**0.22**	**0.2**	**0.2**	**1.3**	**1.3**

A more detailed example of calculating HQs and HIs and of determining noncancer health impacts is shown in Appendix I.

Hazard quotients or HIs for different target organs are not summed together (e.g., do not add the impacts for the eye to the cardiovascular system). Chapter 6 and Appendix L have lists of the organ systems affected by each substance. Unlike the cancer risk algorithms, no exposure duration adjustment (e.g., 9 yrs / 70 yrs) should be made for noncancer assessments.

There are limitations to this method of assessing cumulative noncancer health impacts. The impact on organ systems may not be additive if health effects occur by different mechanisms. However, the impact on organ systems could also be synergistic. An analysis by a trained health professional familiar with the substance's toxicological literature is usually needed to determine the public health significance of an HQ or HI above one. It is recommended that the Air District contact OEHHA if this situation presents itself. For assessing the noncancer health impacts of lead, different procedures are used; please see Appendix F.

8.3.2 *Calculating Noninhalation (oral) Noncancer Hazard Quotient and Hazard Index*

Similar to the situation with multipathway carcinogenic substances, multipathway substances that present a noncancer hazard are assessed by noninhalation routes of exposure (see Table 8.6). Noninhalation routes of exposure are assessed only for chronic exposure. There are no oral acute RELs since it is generally anticipated that health effects from a single exposure via the oral route at typical environmental levels resulting from deposition of facility emissions would be insignificant relative to the inhalation route. The multipathway substances with noninhalation RELs, called chronic oral RELs, are shown in Table 6.4. Similar to inhalation exposure, the hazard quotient

for a noninhalation pathway is obtained by dividing the dose in milligrams per kilogram-day (mg/kg-day) by the oral REL also expressed in units of mg/kg-day:

$$\text{Chronic Non-inhalation HQ} = \frac{\text{Chronic Noninhalation Dose (mg/kg-day)}}{\text{Chronic Oral REL (mg/kg-day)}}$$

The calculated chronic oral HQs are combined with the chronic inhalation HQs for determining the chronic HIs for each affected target organ (see Section 8.3.4). The point estimates and algorithms for calculating the oral dose for all applicable exposure pathways and receptors (e.g., workers or residents) are explained in Chapter 5.

The chronic oral dose calculated in mg/kg-day is based on a time-weighted average 70-year residential exposure combining the 0<2, 2<16 and 16-70 year age groups. Unlike the assessment of cancer risk, no exposure duration adjustment should be made when estimating HQs. In other words, the variates ED and AT in the cancer risk EQ 8.2.5 in Section 8.2.5 are not used for estimating the noncancer HQs. See Appendix I for an example calculation.

8.3.3 *Multipathway Noncancer Risk Methodology*

To determine multipathway chronic noncancer health impacts, it is necessary to calculate the total hazard index from both inhalation and noninhalation exposures. The calculation of HIs has several steps:

1) First, the inhalation HQ is calculated for each substance emitted (Section 8.3.1).
2) Second, if the substance has an oral REL, then the non-inhalation HQ is calculated as shown above using high-end point-estimates for intake rates for each noninhalation pathway that applies.
3) Third, if there are more than two noninhalation pathways to consider for a multipathway substance, then the oral HQ is calculated using high-end point estimates in the dose equation for the two dominant pathways. For any additional noninhalation pathways, the HQs are calculated using average point estimates in the dose equation. This step applies only to residential receptors.
4) Fourth, all noninhalation pathway HQs for a multipathway substance are then summed together by target organ to obtain the total noninhalation HQ for a multipathway substance.
5) The final step is to sum the inhalation and noninhalation HQs together by target organ to determine the HIs. This step is displayed in Table 8.9. If there is only one substance, then the multipathway HQ is the same as the HI.

Table 8.9 Substance-Specific Chronic Inhalation and Noninhalation Hazard Quotients and the Hazard Index by Target Organ System

Substance	Respiratory System	Hematologic System	Alimentary System	Endocrine System	Development	Reproductive System	Nervous System	Cardiovascular System	Skin
Ammonia	0.8								
Arsenic					0.04(i) 0.1(ni)		0.04(i) 0.1(ni)	0.04(i) 0.1(ni)	0.04(i) 0.1(ni)
Benzene		0.08			0.08		0.08		
2,3,7,8-TCDD (dioxin)	0.1(i) 0.2(ni)	0.1(i) 0.2(ni)	0.1(i) 0.2(ni)	0.1(i) 0.2(ni)	0.1(i) 0.2(ni)	0.1(i) 0.2(ni)			
Nickel	0.4(i)	0.4(i)	0.1(ni)						
Hazard Index	**1.50**	**0.78**	**0.40**	**0.3**	**0.52**	**0.30**	**0.22**	**0.14**	**0.14**

i = inhalation pathway contribution

ni = noninhalation pathway contribution

Table 8.9 shows the calculated chronic HIs by combining the chronic inhalation HQs and chronic oral HQs. The HQs or HIs for different target organs are not added together (e.g., do not add the impacts for the respiratory system to the nervous system). The noninhalation pathways for TCDD and arsenic in Table 8.9 have all the noninhalation pathways that apply incorporated into their HQ values. For example, the noninhalation value for arsenic (HQs = 0.1) includes at least the soil ingestion and dermal soil pathways in the HQs because these are the mandatory noninhalation pathways to take into account with exposure to a multipathway substance. For TCDD, the mother's milk pathway is an additional mandatory noninhalation pathway to take into account (See Table 5.1). If there are exposures to any of the site-specific pathways, then these would be included too. A more detailed example calculation of HIs is shown in Appendix I.

When exposure to more than two noninhalation pathways occur, using the high-end point estimates of intake rates for only the two dominant noninhalation pathways will lessen the issue of compounding high-end exposure estimates, while retaining a health-protective approach for the more important exposure pathways. It is unlikely that an individual receptor would be on the high-end of exposure for all the non-inhalation intake parameters (exposure pathways).

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8.3.4 *Summary - Acute, 8-Hour and Chronic Hazard Index Calculation at the MEIR and MEIW*

Eight-hour RELs were developed principally for exposure of individuals during 8-hour work schedules. The 8-hour RELs should be used for typical daily work shifts of 8-9 hours. For further questions, assessors should contact OEHHA, the District, or reviewing authority to determine if the 8-hour RELs should be used in your HRA. Any discussions or directions to exclude the 8-hour REL evaluation should be documented in the HRA. There are currently only a limited number of substances with an 8-hour inhalation REL. Over time as the science supporting REL values for individual substances is reviewed and the RELs are revised by OEHHA, more 8-hour RELs will be developed.

Therefore, for the MEIR, we recommend:

- Estimating the acute Hazard Index based on the maximum 1-hour air concentration and 1-hour RELs
- Estimating the chronic Hazard Index based on the annual average air concentration and the chronic RELs, and the oral RELs for multipathway substances

An 8-hour hazard index based on the daily average 8-hour exposure is not required for the MEIR, but can be performed at the discretion of the District for exposure to non-continuously operating facilities using the adjusted annual average air concentration (See EQ 5.4.1.4 A and B or method in App. M). Eight-hour hazard assessments are not recommended for exposure to continuously operating facilities.

For the MEIW, we recommend:

- Estimating the acute Hazard Index based on the maximum 1-hour air concentration and 1-hour RELs
- Estimating the 8-hour Hazard Index based on daily average 8-hour exposure for those chemicals with 8-hour RELs
- Estimating the chronic Hazard Index based on the annual average air concentration and chronic RELs, and oral RELs for multipathway substances

Until there are 8-hour RELs for many of the Hot Spots substances that have a chronic REL value, we recommend determining the chronic HI for the MEIW to adequately protect the offsite worker.

8.3.5 *Evaluation of Background Criteria Pollutants*

The District should be contacted to determine if the contribution of background criteria pollutants to respiratory health effects is required to be included in an HRA for the Hot Spots Program. If inclusion is required, the methods for calculating the health impact from acute and chronic exposure (respiratory endpoint) is the standard HI approach (see Sections 8.3.1 and 8.3.4). There are currently no 8-hour RELs for criteria

pollutants, so 8-hour health impacts from criteria pollutants are not assessed in HRAs. The background criteria pollutant contribution should be calculated if the HI from the facility's emissions exceeds 0.5 in either the acute or chronic assessment for the respiratory endpoint.

The most recent criteria pollutant concentration data should be obtained from the ARB's ambient air monitoring network and can be found in the *California Almanac of Emissions and Air Quality* on their web site at www.arb.ca.gov. For determining the criteria pollutant contribution in HI calculations, the annual average concentration data should be taken from a monitoring site near the facility. If background contributions are unavailable, the District may direct the risk assessor to make an alternative assumption. The criteria pollutants that should be included in acute and chronic assessments for the respiratory endpoint are ozone, nitrogen dioxide, sulfur dioxide, sulfates, and hydrogen sulfide.

8.4 Uses of Exposure Duration Adjustments for Onsite Receptors

Onsite workers are protected by CAL OSHA and typically are not evaluated under the Hot Spots program. Exceptions may include a worker who also lives on the facility property such as at prisons, military bases, and universities that have worker housing within the facility. Another scenario where the District may require assessment of on-site worker exposure and risk is when a facility (e.g., airport) has multiple businesses owned by different entities within the facility/property (e.g., rental car agencies, restaurants, etc.). In these situations the evaluation of onsite cancer risks, and/or acute, 8-hour, and chronic noncancer hazard indices is appropriate under the Hot Spots program. If the onsite receptor under evaluation can be exposed through a noninhalation exposure pathway, then that exposure pathway must also be included. When a receptor lives and works on the facility, site, or property, then these receptors should be evaluated and reported under both residential and worker scenarios and the one that is most health-protective should be used for risk management decisions.

The cancer risk estimates for the on-site residents may use a 30-year exposure duration while the 25-year exposure duration is used for a worker. Under a Tier 2 analysis, alternate exposure durations may be evaluated and presented with all assumptions supported. See section 8.2.10 for more discussion of short-term exposures.

Other situations that may require on-site receptor assessment include the presence of locations where the public may have regular access for the appropriate exposure period (e.g., a lunchtime café, store, or museum for acute exposures). The District or reviewing authority should be consulted on the appropriate evaluations for the risk for all onsite receptors.

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8.5 References

ERG, 2008. Summary Report of the Peer Review Meeting: EPA's Draft Framework for Determining a Mutagenic Mode of Action for Carcinogenicity. Final Report. Submitted to Risk Assessment Forum, Office of the Science Advisor, U.S. Environmental Protection Agency, Washington, DC., by Eastern Research Group. May 23, 2008.

OEHHA, 2010. *Cumulative Impacts: Building a Scientific Foundation*. Available online at: http://www.oehha.ca.gov

OEHHA, 2008. *Air Toxics Hot Spots Program Risk Assessment Guidelines*. Technical Support Document for Deriving Noncancer Refernce Exposure Levels. Office of Environmental Health Hazard Assessment, California Environmental Protection Agency. Available online at: http://www.oehha.ca.gov

OEHHA, 2009. *Air Toxics Hot Spots Program Risk Assessment Guidelines. Technical Support Document for Cancer Potency Factors: Methodologies for derivation, listing of available values, and adjustments to allow for early life stage exposures*. Office of Environmental Health Hazard Assessment, California Environmental Protection Agency. May 2009. Available online at: http://www.oehha.ca.gov

OEHHA, 2012. *Air Toxics Hot Spots Program Risk Assessment Guidelines; Technical Support Document for Exposure Assessment and Stochastic Analysis*. Office of Environmental Health Hazard Assessment, California Environmental Protection Agency. Available online at http://www.oehha.ca.gov

U.S. EPA, 2005a. Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens EPA/630/R-03/003F March 2005.

U.S.EPA, 2005b. Guidelines for Carcinogen Risk Assessment. Risk Assessment Forum, Washington, DC. EPA/630/P-03/001F.

9 - Summary of the Requirements for a Modeling Protocol and a Health Risk Assessment Report

The AB 2588 program is a community right-to-know act. Although risk assessment is a technical field, AB 2588 risk assessments need to be clear and understandable to the educated lay person. An Executive Summary that explains the process and the results of the risk assessment in lay terms is necessary. Clear risk communication is imperative in situations where the facility is required to notify the surrounding community. In addition, the risk assessment is by law reviewed by the local Air Pollution Control or Air Quality Management District (District) and OEHHA in order to ensure that AB 2588 risk assessment procedures have been followed. This chapter clarifies the type of information that is needed for District and OEHHA review of modeling protocols and health risk assessments (HRAs).

The material presented here is intended to promote transparent, consistent presentation and efficient review of the modeling protocol and the health risk assessment report (products). We recommend that persons preparing these products consult with the local District to determine if the District has modeling or HRA guidelines that supersede these products. If the District does not have guidelines for these products, then we recommend Section 9.1 be used for modeling protocols and Section 9.2 be used for the presentation of HRAs. Persons preparing modeling protocols and HRAs should specify the guidelines that were used to prepare their products.

9.1 Submittal of a Modeling Protocol

It is strongly recommended that a modeling protocol be submitted to the District for review and approval prior to extensive analysis with an air dispersion model. The modeling protocol is a plan of the steps to be taken during the air dispersion modeling and risk assessment process. We encourage people who are preparing protocols to take advantage of the protocol step and fully discuss anticipated methodologies for any portion of your project that may need special consideration. Below, we have provided an example of the format that may be followed in the preparation of the modeling protocol. **Consult with the District to confirm format and content requirements or to determine the availability of District modeling guidelines before submitting the protocol.**

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9.1.1 *Outline for a Modeling Protocol*

I. Introduction

Include the facility name, address, and a brief overview describing the facility's operations.

- Provide a description of the terrain and topography surrounding the facility and potential receptors.
- Indicate the format in which data will be provided. Ideally, the report and summary of data will be on paper and all data and model input and output files will be provided electronically (e.g., compact disk or CD).
- Identify the guidelines used to prepare the protocol (e.g., District Guidelines).

II. Emissions

For each pollutant and process whose emissions are required to be quantified in the HRA, list the annual average emissions (pounds/year and grams/second) and the maximum one-hour emissions (pounds/hour and grams/second)[1]. Maximum 1-hour emissions are used for acute noncancer health impacts while annual emissions are used for chronic exposures (i.e., chronic and 8-hour noncancer health impacts or cancer risk assessment).

- Identify the reference and method(s) used to determine emissions (e.g., source tests, emission factors, etc.). Clearly indicate any emission data that are not reflected in the previously submitted emission inventory report. In this event, a revised emission inventory report will need to be submitted to the District.
- Identify if this will be a multipathway assessment based on emitted substances.

[1] Except radionuclides, for which annual and hourly emissions are reported in Curies/year and millicuries/hour, respectively.

III. Models / Modeling Assumptions

Specify the model and modeling assumptions

- Identify the model(s) to be used, including the version number.
- Identify the model options that will be used in the analysis.
- Identify the modeling domain(s) and the spacing of receptor grid(s). Grid spacing should be sufficient in number and detail to capture the concentration at all of the receptors of interest.
- Indicate complex terrain options that may be used, if applicable.
- Identify the source type(s) that will be used to represent the facility's operations (e.g., point, area, or volume sources, flare options or other).
- Indicate the preliminary source characteristics (e.g., stack height, gas temperature, exit velocity, dimensions of volume source, etc.).
- Identify and support the use of urban or rural dispersion coefficients for those models that require dispersion coefficients. For other models, identify and support the parameters required to characterize the atmospheric dispersion due to land characteristics (e.g., surface roughness, Monin-Obukhov length).

IV. Meteorological Data

Specify the type, source, and year(s) of hourly meteorological data (e.g., hourly surface data, upper air mixing height information).

- State how the data are representative for the facility site.
- Describe QA/QC procedures.
- Identify any gaps in the data; if gaps exist, describe how the data gaps are filled.

V. Deposition

- Specify the method to calculate deposition (if applicable).

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VI. Receptors

Specify the type and location of receptors. Include all relevant information describing how the individual and population-related receptors will be evaluated.

- Identify and describe the location(s) of known or anticipated potential sensitive receptors, the point of maximum impact (PMI), the maximum exposed individual residential (MEIR), and worker (MEIW) receptors. Identify any special considerations or grids that will be used to model these receptors. This information should correspond with information provided in Section III (e.g., fine receptor spacing of 20 meters at the fence line and centered on the maximum impacts; coarse receptor spacing of 100 meters out to 2,000 meters; extra coarse spacing of 1,000 meters out to 20,000 meters).
- Identify if spatial averaging will be used. Include necessary background information on each receptor including how the domain and spacing will be determined for each receptor or exposure pathway.
- Describe how the cancer burden or population impact estimates are calculated. Clarify the same information for the presentation of noncancer population impacts (e.g., centroids of the census tracts in the area within the zone of impact).
- Specify that actual UTM coordinates and the block/street locations (i.e., north side of 3,000 block of Smith Street), where possible, will be provided for specified receptor locations.
- Identify and support the use of any exposure adjustments (e.g., time at location, diurnal).
- Include the list of anticipated exposure pathways that will be included and indicate which substance will be evaluated in the multipathway assessment. Identify if sensitive receptors are present and which receptors will be evaluated in the HRA.

VII. Maps

Identify how the information will be graphically presented.

- Indicate which cancer risk isopleths will be plotted for the cancer zone of impact (e.g., 10^{-7}, 10^{-6} see Section 4.6.1).
- Indicate the hazard quotients or hazard indices to be plotted for the noncancer acute, 8 hour, and chronic zones of impact (e.g., 0.5, 1.0, etc.).

9.2 Health Risk Assessment Report

The purpose of this section is to provide an outline to assist with the preparation and review of HRAs. This outline specifies the key components that should be included in HRAs. All information used for the report must be presented in the HRA. Ideally, the HRA report and a summary of data used in the HRA will be on paper and all data and model input and output files will be provided electronically (e.g., CD). Persons preparing HRAs for the Hot Spots Program should consult the District to determine if HRA guidelines or special formats are to be followed when preparing and presenting the HRA's results.

If District guidelines or formats do not exist that supersede this outline, then the HRA should follow the format presented here. If the HRA is prepared for other programs, the reviewing authority should be consulted for clarification of format and content. We recommend that those persons preparing HRAs specify the guidelines that were used to prepare their product. **The HRA may be considered deficient by the reviewing authority if components that are listed here are not included**.

9.2.1 *Outline for the Health Risk Assessment Report*

I. Table of Contents

- Section headings with page numbers indicated.
- Tables of tables and Table of figures with page numbers indicated.
- Appendices with page numbers indicated.

II. Executive Summary

Overview of all relevant information regarding the project or facility.

- Facility identifier number (consult the District).
- Description of facility operations and a list identifying emitted substances including table of maximum 1-hour emissions, and annual average emissions.
- Provide a brief description of acute, 8-hour, chronic, and cancer health impacts of the emitted substances, based on OEHHA's descriptions in the appropriate Technical Support Documents.
- Text presenting overview of dispersion modeling and exposure assessment.
- Text describing estimated cancer risk for carcinogens, noncancer Hazard Quotients and Hazard Indices and a table showing target organ systems by substance for noncancer impacts.

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- Summarize the individual and population-wide health impacts including the driving substance(s) and the driving exposure pathways:
  - Location (block/street location; e.g., north side of 3,000 block of Smith Street) and description of the off-site point of maximum impact (PMI), maximum exposed individual resident (MEIR), and maximum exposed individual worker (MEIW).
  - Location (block/street location; e.g., north side of 3,000 block of Smith Street) and description of any on-site receptors that were evaluated at the facility (consult District or agency).
  - Location (block/street location; e.g., north side of 3,000 block of Smith Street) and description of any sensitive receptors that are required by the district or reviewing authorities (consult District or agency).

    NOTE: When presenting information described in the following bullets, cancer risk should be presented separately for a residential 30-year, Tier–1 analysis. Results of other exposure assumptions (e.g., 9 or 70-year) or other tier evaluations should also be presented, and must be clearly labeled. For the Hot Spots Program, while the 30-year exposure duration is recommended as the basis for public notification and risk reduction audits and plans, the District has discretion to use the 70 year exposure scenario for its decisions. In addition, the 70 year cancer risk must be calculated to estimate population-wide impacts.
  - Text presenting an overview of the total cancer risk (including multipathway substances, if present) at the PMI, MEIR, MEIW, and sensitive receptors. Provide a table of cancer risk by substance for the MEIR and MEIW (if applicable). Include a statement indicating which of the substances appear to contribute most to (drive) the potential health impacts. In addition, identify the exposure pathways evaluated in the HRA.
  - Provide a map of the facility and surroundings and identify the location of the MEIR, MEIW, PMI, and other locations or receptors of interest.
  - Provide a map of 30-year and 70-year cancer risk zone of impact(s), if applicable.
  - Text presenting an overview of the acute and chronic noncancer hazard quotients and the (total) hazard indices for the PMI, MEIR, MEIW, and sensitive receptors. Additionally, include 8-hour hazard quotients and hazard indices for the MEIW. Include separate statements (for acute, 8-hour, and chronic exposures) indicating which

of the substances appear to drive the potential health impacts. In addition, clearly identify the primary target organ(s) that are impacted from acute, 8-hour, and chronic exposures.

- Identify any sensitive subpopulations (e.g., child daycare facilities, schools, nursing homes) of concern.
- Table and text presenting an overview of estimates of population exposure (e.g., cancer burden or population estimates from HARP) (consult District or agency) (see Section 8.4).
- Version of the Risk Assessment Guidelines and computer program(s) used to prepare the risk assessment (e.g., HARP).

III. Risk Assessment Procedures

A. ***Hazard identification***

- Table and text identifying all substances emitted from the facility, plus any other substances required by the District or reviewing authority. Include the CAS number of the substance and the physical form of the substance if possible. [The Hot Spots substances are listed in Appendix A, and also in the ARB's Emission Inventory Criteria and Guidelines Regulations (Title 17, California Code of Regulations, Sections 93300-93300.5), and the Emission Inventory Criteria and Guidelines Report (EICG Report), which is incorporated by reference therein (ARB, 1997)].
- Table and text identifying all substances that are evaluated for cancer risk and/or noncancer acute, 8-hour, and chronic health impacts. In addition, identify any multipathway substances that present a cancer risk or chronic noncancer hazard via noninhalation routes of exposure.
- Describe the types and amounts of continuous or intermittent predictable emissions from the facility that occurred during the reporting year. As required by statute, releases from a facility include spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping (fugitive), leaching, dumping, or disposing of a substance into ambient air. Include the substance(s) released and a description of the processes that resulted in long-term and continuous releases.

B. ***Exposure Assessment***

This section describes the information related to the air dispersion modeling process that needs to be reported in the risk assessment; the information is also presented in Chapter 4 (see Section 4.15). The District may have specific requirements regarding format and content (see Section 4.14). Sample calculations should be provided at each step to indicate how reported emissions

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data were used. Reviewing agencies must receive input, output, and supporting files of various model analyses on computer-readable media (e.g., CD).

1. Information on the Facility and its Surroundings

Report the following information regarding the facility and its surroundings:

- Facility Name
- Location (UTM coordinates and street address)
- Land use type (see Section 2.4)
- Local topography
- Facility plot plan identifying:
  - source locations
  - property line
  - horizontal scale
  - building heights
  - emission sources

2. Source and Emission Inventory Information

a. Release Parameters

Report the following information for each release location in table format:

- Release location identification number
- Release name
- Release type (e.g., point, volume, area, line, pit, etc.)
- Source identification number(s) used by the facility for sources that emit out of this release location
- Release location using UTM coordinates
- Release parameters by release type (e.g., shown for point source):
- Stack height (m), stack diameter (building dimensions for downwash, exhaust gas exit velocity (m/s), exhaust gas volumetric flow rate (ACFM), exhaust gas exit temperature (K), etc.

b. Source Description and Operating Schedule

The description and operating schedule for each source should be reported in table form including the following information:

- Source identification number used by the facility
- Source name
- Number of operating hours per day and per year (e.g., 0800-1700, 2700 hr/yr)
- Number of operating days per week (e.g., Mon-Sat)

- Number of operating days or weeks per year (e.g., 52 wk/yr excluding major holidays)
- Release point identification number(s) for where source emissions are released
- Fraction of source emissions emitted at each release point by release point ID number

c. *Emission Control Equipment and Efficiency*

- Report emission control equipment and efficiency by source and by substance

d. *Emissions Data Grouped By Source*

Report emission rates for each toxic substance, grouped by source (i.e., emitting device or process identified in Inventory Report), in table form including the following information:

- Source name
- Source identification number
- Substance name and CAS number (from Inventory Guidelines)
- Annual average emissions for each substance (lb/yr)
- Hourly maximum emissions for each substance (lb/hr)

e. *Emissions Data Grouped by Substance*

Report facility total emission rate by substance for all emitted substances listed in the Air Toxics “Hot Spots” Program including the following information:

- Substance name and CAS number (from Inventory Guidelines)
- Annual average emissions for each substance (lb/yr)
- Hourly maximum emissions for each substance (lb/hr)

f. *Emission Estimation Methods*

Report the methods used in obtaining the emissions data indicating whether emissions were measured or estimated. Clearly indicate any emission data that are not reflected in the previously submitted emission inventory report and submit a revised emission inventory report to the district. A reader should be able to reproduce the risk assessment without the need for clarification.

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g. *List of Substances*

Include tables listing all "Hot Spots" Program substances which are emitted, plus any other substances required by the District. Indicate substances to be evaluated for cancer risks and noncancer effects.

h. *Exposed Population and Receptor Location*

Report the following information regarding exposed population and receptor locations:

- Description of zone of impact including map showing the location of the facility, boundaries of zone of impact, census tracts, emission sources, sites of maximum exposure, and the location of all appropriate receptors. This should be a true map (one that shows roads, structures, etc.), drawn to scale, and not just a schematic drawing. USGS 7.5 minute maps or GIS based maps are usually the most appropriate choices. (If significant development has occurred since the user’s survey, this should be indicated.)

- Separate maps for the cancer risk zone of impact and the hazard index (noncancer) zone of impact(s). The cancer zone of impact should include isopleths down to at least the 1/1,000,000 risk level. Because some districts use a level below 1/1,000,000 to define the zone of impact, the District should be consulted. For the noncancer zone of impact, three separate isopleths (to represent chronic, 8-hour, and acute HI) should be created to define the zone of impact for the hazard index from both inhalation and noninhalation pathways greater than or equal to 0.5. The point of maximum impact (PMI), maximum exposed individual at a residential receptor (MEIR), and maximum exposed individual worker (MEIW) for both cancer and noncancer risks should be located on the maps.

- Tables identifying population units and sensitive receptors (UTM coordinates, receptor IDs or index from the modeling, and street addresses of specified receptors)

- Heights or elevations of the receptor points.

- **Spatial averaging**: For each receptor type (e.g., PMI, MEIR, and MEIW, or other location of interest) that will utilize spatial averaging, the domain size and grid resolution must be clearly identified. If another domain or grid resolution other than 20 meters by 20 meters with 5-meter grid spacing will be used for a receptor, then care should be taken to determine the proper domain size and grid resolution that should be used. For a worker, the HRA shall support all assumptions used, including, but not limited to, documentation for all workers

showing the area where each worker routinely performs their duties. The final domain size should not be greater than the smallest area of worker movement. Other considerations for determining domain size and grid spacing resolution may include an evaluation of the concentration gradients across the worker area. The grid spacing used within the domain should be sufficient in number and detail to obtain a representative concentration across the area of interest. When spatial averaging over the deposition area of a pasture, garden, or water body, care should be taken to determine the proper domain size to make sure it includes all reasonable areas of potential deposition. The size and shape of the pasture, garden, or water body of interest should be identified and used for the modeling domain. The grid spacing or resolution used within the domain should be sufficient in detail to obtain a representative deposition concentration across the area of interest. One way to determine the grid resolution is to include an evaluation of the concentration gradients across the deposition area. The HRA shall support all assumptions used, including, but not limited to, documentation of the deposition area (e.g., size and shape of the pasture or water body, maps, representative coordinates, grid resolution, concentration gradients, etc.). The use or spatial averaging is subject to approval by the reviewing authority. This includes the size of the domain and grid resolution that is used for spatial averaging of a worksite or multipathway deposition area.

3. **Meteorological Data**

If meteorological data were not obtained directly from the District, then the report must clearly indicate the data source and time period used. Meteorological data not obtained from the District must be submitted in electronic form along with justification for their use including information regarding representativeness and quality assurance.

The risk assessment should indicate if the District required the use of a specified meteorological data set. All memos indicating the District's approval of meteorological data should be attached in an appendix.

4. **Model Selection and Modeling Rationale**

The report should include an explanation of the model chosen to perform the analysis and any other decisions made during the modeling process. The report should clearly indicate the name of the models that were used, the level of detail (screening or refined analysis) and the rationale behind the selection.

Also report the following information for each air dispersion model used:

- Version number
- Selected options and parameters in table form

- Identify the modeling domain(s) and the spacing of receptor grid(s). Grid spacing should be sufficient in number and detail to capture the concentration at all receptors of interest.

5. **Air Dispersion Modeling Results**

The report should include tables, text, and appendices that clearly present all of the following information

- Maximum hourly and annual average concentrations of chemicals at appropriate receptors such as the residential and worker MEI receptors
- Annual average and maximum one-hour (and 30-day average for lead only) concentrations of chemicals at appropriate receptors listed and referenced to computer printouts of model outputs
- Model printouts (numbered), annual concentrations, maximum hourly concentrations
- Disk with input/output files for air dispersion program (e.g., the AERMOD input file containing the regulatory options and emission parameters, receptor locations, meteorology, etc.)
- Include tables that summarize the annual average concentrations that are calculated for all the substances at each site. The use of tables that present the relative contribution of each emission point to the receptor concentration is recommended. (These tables should have clear reference to the computer model which generated the data. It should be made clear to any reader how data from the computer output were transferred to these tables.) [As an alternative, the above two tables could contain just the values for sites of maximum impact (i.e., PMI, MEIR and MEIW), and sensitive receptors, if required. All the values would be found in the Appendices.]

C. ***Health Values Used in Dose-Response and Dose Estimates***

- Provide tables of the acute, 8-hour and chronic inhalation RELs, chronic oral RELs (if applicable), and cancer potency factors for each substance that is quantified in the HRA.
- Identify the guidelines (title and date) that were used to obtain these factors, or indicate whether newly approved values obtained from the OEHHA website were used.
- Provide a table of target organ systems for each noncancer substance, including acute (1 hour), 8-hour, and chronic inhalation, and chronic oral (if applicable).

- Include tables of the estimated dose for each substance by each exposure pathway at the PMI, MEIR, MEIW, and at any sensitive receptor locations (required by the District).

D. ***Risk Characterization***

The Hot Spots Analysis and Reporting Program (HARP) will generate the risk characterization data needed for the outline below. Any data needed to support the risk characterization findings should be clearly presented and referenced in the text and appendices. A listing of HARP output files that meet these HRA requirements is provided in this outline under the section entitled "Appendices". All HARP files should be included in the HRA. Ideally, the HRA report and a summary of data used in the HRA will be on paper and all data and model input and output files will be provided electronically (e.g., CD). Information on obtaining copies of HARP is available on the California Air Resources Board's Internet web site under the Air Toxics Program at www.arb.ca.gov.

NOTE: The cancer risk for the PMI, MEIR, and sensitive receptors of interest must be presented in the HRA's text, tables, and maps. OEHHA recommends that cancer risk for a 30-year exposure duration be presented for the MEIR, and that cancer risk for 9-year and 70-year exposure durations for the MEIR be presented to provide the risk managers with supplemental information. Note that the assessment of population impacts must be based on a 70-year exposure duration; thus all risk assessments need to estimate cancer risk for a 70-year exposure duration in order to report the number of individuals residing in the risk isopleths, or to calculate cancer burden if the District so requires. In addition, some Districts may opt to make risk management decisions based on a 70-year exposure duration. The MEIW location should use a 25-year exposure period.

All HRAs must include the results of a Tier-1 exposure assessment (see Chapter 2 and 8, or the 2012 TSD). If the reviewing authority specifies that additional exposure periods should be presented, or if persons preparing the HRA would like to present additional information (i.e., exposure duration adjustments or the inclusions of risk characterizations using Tier-2 through Tier-4 exposure data), then this information should be presented in separate, clearly titled, sections, tables, and text.

The following information should be presented in this section of the HRA. If not fully presented here, then by topic, clearly identify the section(s) and pages within the HRA where this information is presented.

- Description of receptors to be quantified.
- Table and text providing the location [UTM coordinates, receptor ID number or index from the modeling, and the block/street address

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(e.g., north side of 3,000 block of Smith Street)] and description of the PMI, MEIR, and MEIW for both cancer and noncancer risks.

- Separate tables and text providing description of the PMI and MEIR for 30-year cancer risk, and 9- or 70-year cancer risk.
- Tables and text describing MEIW 25-year cancer risk.
- Table and text providing the location [UTM coordinates, receptor ID number or index from the modeling, and the block/street address (e.g., north side of 3,000 block of Smith Street)] and description of any sensitive receptor that is of interest to the District or reviewing authorities (consult District or agency).
- Provide any exposure information that is used for risk characterization (e.g., concentrations at receptors, emissions information, census information, figures, zone of impact maps, etc.). If multipathway substances are emitted, identify the site/route dependent exposure pathways (e.g., water ingestion) for the receptor(s), where appropriate (e.g., MEIR).
- Provide a summary of the site-specific inputs used for each exposure pathway (e.g., water or grazing intake assumptions). This information may be presented in an appendix with the information clearly presented and cross-referenced to the text. In addition, provide reference to the appendix (section and page number) that contains the modeling (i.e., HARP/dispersion modeling) files that show the same information.
- If any exposure parameters were used other than those provided in the Air Toxics Risk Assessment Guidelines: Technical Support Document for Exposure Assessment and Stochastic Analysis (2012), they must be presented in detail. The derivation and data used must be presented so that it is clear to the reviewer. The justification for using site-specific exposure parameters must be clearly presented.
- Table and text presenting the potential multipathway cancer risk by substance, by pathway, and total, at the PMI, MEIR, MEIW, and sensitive receptor locations (required by the District).
- Table and text presenting the acute (inhalation only) and chronic noncancer (inhalation and oral) hazard quotients (by substance, exposure pathways, and target organs) and the (total) hazard indices by substance and target organs for the PMI, MEIR, MEIW, and sensitive receptors. For 8-hour exposure at the MEIW (inhalation only), table and text presenting hazard quotients (by substance, exposure pathways, and target organs) and the (total) hazard indices by substance and target organs. Note:

Chronic noncancer results should be shown with inhalation and oral contributions (shown separately) and for the combined (multipathway) impact.

- Identify any sensitive subpopulations (e.g., child daycare facilities, schools, nursing homes) of concern.

- Table and text presenting estimates of population exposure (e.g., population exposure estimates or cancer burden from HARP) (consult District or agency). Tables should indicate the number of persons exposed to a (total) cancer risk greater than 10^{-7}, 10^{-6}, 10^{-5}, 10^{-4}, etc., and total hazard quotient or hazard index greater than 0.5, 1.0, 2.0, and 3.0, etc. Provide a table that shows excess cancer burden for each population unit and the total excess cancer burden, if cancer burden calculation is required.

- Provide maps that illustrate the HRA results for the three sub-bullet points below. These maps should be an actual street map of the area impacted by the facility with elevation contours and actual UTM coordinates, and the facility boundaries clearly labeled. In some cases the elevation contours will make the map too crowded and should therefore not appear. This should be a true map (one that shows roads, structures, etc.), drawn to scale, and not just a schematic drawing. USGS 7.5-minute maps are usually the most appropriate choice (see Section 4.6).

    - The facility (emission points and boundaries), the locations of the PMI, MEIR, MEIW, and sensitive receptors.

    - Maps of the cancer zone of impacts (e.g., 10^{-6} or 10^{-7} levels - consult District or Agency). The map should clearly identify the zone of impact for the inhalation pathway, the minimum exposure pathways (soil ingestion, dermal exposure, and breast-milk consumption) if multipathway substances are emitted, and the zone of impact for all the applicable exposure pathways (minimum exposure pathways plus any additional site/route specific pathways) for multipathway analyses. Two maps may be needed to accomplish this. The legend of these maps should state the level(s) used for the zone of impact and identify the exposure pathways that were included in the assessment.

    - Maps of the noncancer hazard index (HI) zone of impacts (e.g., 0.5 or 1.0 - consult District or Agency). The noncancer maps should clearly identify the noncancer zones of impact. These include the acute (inhalation), 8-hour (inhalation), chronic (inhalation), and chronic (multipathway) zones of impact. For clarity, presentation of the noncancer zones of impact may require two or more maps. The

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legend of these maps should state the level(s) used for the zone of impact and identify the exposure pathways.

- The risk assessor may want to include a discussion of the strengths and weaknesses of the risk analyses and associated uncertainty directly related to the facility HRA.

- If appropriate, comment on the possible alternatives for control or remedial measures. How do the risks compare?

- If possible, identify any community concerns that influence public perception of risk.

- Sample calculations may be needed for all analyses in the HRA if proprietary software other than HARP was used. The District should be consulted. These calculations should be clearly presented and referenced to the findings they are supporting in the HRA text.

- Version of the Risk Assessment Guidelines and computer program used to prepare the risk assessment.

- If software other than HARP is used for the health assessment modeling, all supporting material must be included with the HRA (e.g., all algorithms and parameters used in a clear, easy to review format).

E. ***References***

Include any references used for the HRA in this section.

F. ***Appendices***

The appendices should contain all data, sample calculations, assumptions, and all modeling and risk assessment files that are needed to reproduce the HRA results. Ideally, a summary of data used in the HRA will be on paper and all data and model input and output files will be provided electronically (e.g., CD), unless otherwise specified by the district or reviewing authority. All appendices and the information they contain should be referenced, clearly titled, and paginated.

Potential Appendix Topics (if not presented elsewhere in the HRA report):

- List of all receptors locations (UTM coordinates, receptor ID number or index from the modeling, and the block/street address (e.g., north side of 3,000 block of Smith Street)) for the PMI, MEIR, MEIW, and sensitive receptors.
- List of all emitted substances.
- All emissions files.

- List of dose-response factors (Reference Exposure Levels and cancer potency factors).
- All air dispersion modeling input and output files. Detailed discussions of meteorological data, regulatory options, emission parameters, receptor locations, etc.
- Census data.
- Maps.
- Identify the site/route dependent exposure pathways for the receptor(s), where appropriate (e.g., MEIR). Provide a summary of the site-specific inputs used for each pathway (e.g., water or grazing intake assumptions) and the data to support them.
- All calculations used to determine emissions, concentrations, and potential health impacts at the PMI, MEIR, MEIW, and sensitive receptors.
- All HRA model input and output (HARP) files for receptors of concern.
- (Total) cancer and noncancer impacts by receptor, substance, and exposure pathway (by endpoint for noncancer) at all receptors.
- Presentation of alternate risk assessment methods (e.g., alternate exposure durations, or Tier-2 to Tier-4 evaluations with supporting information).

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List of Abbreviations

A - Area
AB2588 - Air Toxics "Hot Spots" Information and Assessment Act, 1987
ACFM - Actual Cubic Feet per Minute
ADL - Annual Dermal Load
AQMD - Air Quality Management District (District)
ARB - Air Resources Board
ASF - Age Sensitivity Factor
AT - Average Time for Lifetime Cancer Risk
BAF - Bioaccumulation Factor
BG - Urban Block Groups
BLP - Buoyant Line and Point Source Dispersion Model
BMI - Breast Milk Intake
BPIP - Building Profile Input Program
BPIPPRM - Building Profile Input Program for PRIME
BSA - Body Surface Area
BW - Bodyweight
C_{air} - annual average air concentration
CALMPRO - Calms processor program
CAPCOA - California Air Pollution Control Officer's Association
CAS - Chemical Abstracts Service
CERCLA - Comprehensive Environmental Response, Compensation and Liability Act
C_f - Average concentration of a substance in fish
C_m - Average concentration of a substance in mother's milk (mislabeled on 114 as Cf)
C_{fa} - Average concentration of a substance in animal products
CONST2 - Constant in the Briggs' stable plume rise equation using BLP
CONST3 - Constant in the Briggs' neutral plume rise equation using BLP
CPF - Cancer Potency Factor
CRIT - Convergence criterion for the line source calculations using BLP
Cs - Concentration of Substance in the Soil
CTDMPLUS - Complex Terrain Dispersion Model
CTSCREEN - Complex Terrain Screening Model
Cv - Average concentration of a substance in and on vegetation
Cw - Concentration of a Substance in the Water
DECFAC - Pollutant decay factor for use with BLP
DF - Discount Factor
$DOSE_{air}$ - Daily inhaled dose
$DOSE_{fa}$ - Exposure through ingesting home-raised or farm animal products
$DOSE_{fish}$ - Exposure through ingestion of angler-caught fish
Dose-Im - Exposure through mother's milk ingestion
$DOSE_p$ - Exposure through ingesting home-grown produce
$DOSE_{water}$ - Exposure through ingesting water

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DTHTA - Vertical potential temperature gradient
DTSC - Department of Toxic Substance Control
EASA - Exposure Assessment and Stochastic Analysis
ED - Rural Enumeration Districts or Exposure Duration (in years)
EF - Exposure Frequency
EICG - Emission Inventory Criteria and Guidelines
EPA - Environmental Protection Agency
EQ - Equation
F - Fahrenheit
FAH - Fraction of Time at Home
FG - Fraction of diet provided by grazing
GIS - Geographic Information Systems
GLC - Ground-Level Concentrations
GRAF - Gastrointestinal Relative Absorption Factor
HARP - Hot Spots Analysis and Reporting Program
HESIS - Hazard Evaluation System and Information Service
HI - Hazard Index
HQ - Hazard Quotient
HRA - Health Risk Assessment
HSC - Health and Safety Code
IARC - International Agency for Research on Cancer
IDELS - Maximum variation in number of stability classes per hour (BLP option)
ISCST3 - Industrial Source Complex Short Term
IUPAC - International Union of Pure and Applied Chemistry
K - Kelvin
L - Fraction of locally-grown (source-impacted) feed that is not pasture (site-specific)
LOAEL - Lowest Observed Adverse Effects Level
LOD - Level of Detection
LSHEAR - Plume rise wind shear (BLP option)
LTRANS - Transitional point source plume rise (BLP option)
MAXIT - Maximum iterations allowed for line source calculations (BLP option)
MEIR - Maximally Exposed Individual Resident
MEIW - Maximally Exposed Individual Worker
METDB - Meteorological Database
METS - Metabolic Equivalents
MPRM - Meteorological Processor for Regulatory Models
MWAF - Molecular Weight Adjustment Factor
NAS - National Academy of Sciences
NCDC - National Climatic Data Center
NOAEL-No Observed Adverse Effects Level
NTP - National Toxicology Program
NWS - National Weather Station
OCD - Offshore and Coastal Dispersion Model
OEHHA - Office of Environmental Health Hazard Assessment
p - Population density
PAH - Polycyclic Aromatic Hydrocarbons

PCB - Polychlorinated Biphenyl
PCDD - Polychlorinated dibenzo-p-dioxins
PCDF - Polychlorinated dibenzofurans
PEXP - Vertical wind speed power law profile exponents
PM2.5 - Particulate Matter less than 2.5 microns in diameter
PM10 - Particulate Matter less than 10 microns in diameter
PMI - Point of Maximum Impact
QA - Quality Assurance
QC - Quality Control
RCRA - Resource Conservation and Recovery Act
REL - Reference Exposure Level
RfC - Reference Concentration
RfD - Reference Dose
SCRAM - Support Center for Regulatory Air Models
SDM - Shoreline Dispersion Model
SIR - Soil Ingestion Rate
SMAQMD - Sacramento Metropolitan Air Quality Management District
SRP - Scientific Review Panel
TAC - Toxic Air Contaminant
Tco – Biotransfer coefficient
TEF - Toxic Equivalency Factor
TERAN – Terrain option in BLP
TSD - Technical Support Document
TSP - Total Suspended Particulates
UCL - Upper Confidence Limits
USGS - U.S. Geological Survey
UTM - Universal Transvers Mercator
WAF - Worker Adjustment Factor
WHO - World Health Organization

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EXHIBIT 6

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MOST POPULAR LINKS
- All RELs
- Environmental Tobacco Smoke (ETS)
- East Bay Kids Web
- Hot Spots
- Criteria Air Pollutants
- Diesel Exhaust

LISTSERVS
- OEHHA Listserv
- Biomonitoring Listserv
- Fish Listserv
- Prop. 65 Listserv

CONTACT OEHHA
- Help!
- Contact OEHHA Staff

Home » Air » Hot Spots » Adoption of the Revised Technical Support Document for Cancer Potency Factors

Air Toxicology and Epidemiology

ADOPTION OF THE REVISED AIR TOXICS HOT SPOTS PROGRAM TECHNICAL SUPPORT DOCUMENT FOR CANCER POTENCY FACTORS [06/01/09] APPENDIX C UPDATED 2011

The Office of Environmental Health Hazard Assessment (OEHHA) is required to develop guidelines for conducting health risk assessments under the Air Toxics Hot Spots Program (Health and Safety Code Section 44360(b)(2)). OEHHA initially developed Technical Support Documents (TSDs) in 1999-2000 in response to this statutory requirement, including one which listed and described the derivation of cancer potencies for individual air contaminants. OEHHA has developed a revised draft TSD, "Air Toxics Hot Spots Program Technical Support Document for Cancer Potencies," which is designed to replace the original TSDs. The revised TSD presents updated methodology that reflects scientific knowledge and techniques developed since the previous guidelines were prepared, and in particular to explicitly include consideration of possible differential effects on the health of infants, children and other sensitive subpopulations, in accordance with the mandate of the Children's Environmental Health Protection Act (Senate Bill 25, Escutia, Chapter 731, Statutes of 1999, Health and Safety Code Sections 39669.5 et seq.).

A draft of the TSD was released on June 20, 2008 to solicit public comment. The document was then reviewed by the State's Scientific Review Panel on Toxic Air Contaminants (SRP). It was initially presented to the SRP on October 10, 2008. Revised versions of the document reflecting new data and comments from the public and the SRP were discussed at meetings held on December 5, 2008 and May 12, 2009. At the latter meeting, the SRP approved the final versions of the methodology section and the associated appendices.

Following this process, and by this memo, OEHHA is finalizing and adopting the TSD for Cancer Potency Factors. Adoption of the TSD does not automatically affect the existing cancer potency factors for individual air contaminants (which are listed in the appendices to the TSD). These existing cancer potency values are listed in Appendix A to the new TSD, and the toxicological summaries describing their derivation are presented in Appendix B. Any further new or revised cancer potencies approved by the SRP will be adopted and also included in these appendices.

Follow this link to download the "Air Toxics Hot Spots Risk Assessment Guidelines Part II: Technical Support Document for

MORE RESOURCES
- Criteria Air Pollutants
- Diesel Exhaust
- Environmental Tobacco Smoke
- Hot Spots Guidelines: Technical Support Documents
  - Non-cancer health effects (RELs)
  - Table of all RELs
  - Cancer Potency Factors
  - Table of all CPFs
- Exposure Assessment and Stochastic
- Risk Assessment Methodology
- MTBE and Ethanol
- Toxic Air Contaminants
- Wildfire Smoke: A Guide for Public Health Officials
- Air Pollution and Children's Health
- Toxicity Criteria Database
- Outside Air Links

RESOURCES FOR KIDS AND EDUCATORS
- CEEIN
- Green California Schools Summit
- California State Science Fair
- Lawrence Hall of Science

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Cancer Potency Factors" (May 2009)

Appendices

Appendix A. A lookup table containing unit risk and cancer potency values. updated 2011

Appendix B. Chemical-specific summaries of the information used to derive unit risk and cancer potency values. updated 2011

Appendix C. A description of the use of toxicity equivalency factors for determining unit risk and cancer potency factors for polychlorinated dibenzo-p-dioxins, dibenzofurans and dioxin-like polychlorinated biphenyls. Revised 01/20/11

Appendix D. A listing of Toxic Air Contaminants identified by the California Air Resources Board.

Appendix E. Descriptions of the International Agency for Research on Cancer (IARC) and U.S. Environmental Protection Agency (U.S. EPA) carcinogen classifications.

Appendix F. An asbestos quantity conversion factor for calculating asbestos concentrations expressed as 100 fibers/m3 from asbestos concentrations expressed as µg/m3.

Appendix G. Procedures for revisiting or delisting cancer potency factors by the program of origin.

Appendix H. Exposure routes and studies used to derive cancer unit risks and slope factors.

Appendix I. "Assessing susceptibility from early-life exposure to carcinogens": Barton et al., 2005 (from Environmental Health Perspectives).

Appendix J. "In Utero and Early Life Susceptibility to Carcinogens: The Derivation of Age-at-Exposure Sensitivity Measures" – conducted by OEHHA's Reproductive and Cancer Hazard Assessment Branch.

- California Regional Environmental Education Community
- Chabot Space and Science Center

Flex Your Power Web site

IF CALLED CONSERVE

Energy efficiency and conservation information. Find incentives/rebates, technical assistance, retailers, product guides, case studies and more.

AMBER ALERT: Save a Child

AMBER ALERT empowers law enforcement, the media and the public to combat abduction by sending out immediate information.

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EXHIBIT 7

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Air Toxicology and Epidemiology

NOTICE OF ADOPTION OF AIR TOXICS HOT SPOTS PROGRAM RISK ASSESSMENT GUIDELINES: REVISED TECHNICAL SUPPORT DOCUMENT FOR EXPOSURE ASSESSMENT AND STOCHASTIC ANALYSIS [08/27/12]

The Office of Environmental Health Hazard Assessment (OEHHA) is adopting an updated version of the document, *Air Toxics Hot Spots Program Risk Assessment Guidelines: Technical Support Document for Exposure Assessment and Stochastic Analysis.* The document becomes available on the OEHHA Home Page at http://www.oehha.ca.gov on August 27, 2012.

BACKGROUND

OEHHA is required to develop guidelines for conducting health risk assessments under the Air Toxics Hot Spots Program (Health and Safety Code Section 44360(b)(2)). OEHHA previously developed Technical Support Documents (TSDs) in response to this statutory requirement, including one in 2000 for exposure assessment. This revised draft TSD replaces the original TSD, and reflects new scientific knowledge developed since the previous guidelines were prepared. We have updated exposure parameters (e.g., inhalation rate, food consumption rate, etc.) based on the most recent data, including exposure factors for infants and children, in accordance with the mandate of the Children's Environmental Health Protection Act (Senate Bill 25, Escutia, Chapter 731, Statutes of 1999, Health and Safety Code Sections 39669.5 *et seq.*). The revised document also updates the approach to assessing dermal exposure.

A draft version of this TSD was released for public comment on November 7, 2011, and was discussed at public workshops in Oakland and Diamond Bar, CA in December 2011. The document was then revised to reflect public comments, and peer reviewed by the State's Scientific Review Panel on Toxic Air Contaminants (SRP). It was initially presented to the SRP on April 5, 2012. A revised version of the document reflecting comments of the SRP was discussed at a second meeting held on June 25, 2012. At the latter meeting, the SRP approved the document describing the RELs and their derivation, subject to some additional editorial changes which have been incorporated into the final version.

Download the document Air Toxics Hot Spots Program Risk Assessment Guidelines: Technical Support Document for Exposure

MORE RESOURCES
- Criteria Air Pollutants
- Diesel Exhaust
- Environmental Tobacco Smoke
- Hot Spots Guidelines: Technical Support Documents
  - Non-cancer health effects (RELs)
  - Table of all RELs
  - Cancer Potency Factors
  - Table of all CPFs
- Exposure Assessment and Stochastic
- Risk Assessment Methodology
- MTBE and Ethanol
- Toxic Air Contaminants
- Wildfire Smoke: A Guide for Public Health Officials
- Air Pollution and Children's Health
- Toxicity Criteria Database
- Outside Air Links

RESOURCES FOR KIDS AND EDUCATORS
- CEEIN
- Disney's Planet Challenge
- Education Links
- Guidelines for Safe Use of Art and Craft Materials

OEHHA Air Revised Technical Support Document for Exposure Assessment And Stochastic Analysis, August 2012

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EXHIBIT 8

3 Daily Breathing Rates

3.1 Introduction

This chapter presents age-specific breathing rates for use in health risk assessments for short-term exposure to maximum 1-hour facility emissions and for long-term daily average exposures resulting from continuous or repeated 8-hour exposure. The specified age ranges of interest in the "Hot Spots" program are ages third trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years.

The term ventilation rate has been frequently used for the metric of volume of air inhaled per minute (i.e., mL/min) and is used in this document to describe short-term, one hour exposures. For convenience, the term "breathing rate" is applied throughout this chapter for chronic daily exposure, both to the metric of volume of air inhaled per day (L/day) and the volume of air inhaled per kg body weight per day (L/kg-day). The normalized daily breathing rate in L/kg-day is the preferred metric for use in the "Hot Spots" program. The term "respiratory rate" is not used in this chapter interchangeably with "breathing rate" because respiratory rate usually represents the number of breaths taken per unit time, and not the volume of air taken in per unit time.

The 8-hour breathing rates were developed for specialized exposure scenarios that involve exposures only during facility operations of about 8-12 hours/day. Eight-hour breathing rates reflect exposures to off-site workers or exposures that may occur in schools when class is in session. Ventilation rates for 1-hour exposure were developed to meet the SB-352 mandate for school districts to conduct a risk assessment at school sites located within 100 meters of a freeway or busy roadway. These ventilation rates were developed for exposures to 1-hour maximum facility emissions that may occur during passive activities such as sitting at a desk during class instruction or during higher intensity activities such as play during recess.

OEHHA recommends the breathing rates presented in Section 3.2. Various published methods for deriving daily breathing rates and their advantages and limitations are discussed in Sections 3.3 to 3.7. Where possible, the breathing rates from these reports were re-evaluated to correspond with the five specific age groups used in OEHHA's risk assessment guidelines.

At elevations above 5000 feet, the ventilation rate will increase due to lower air pressure (NOLS, 2012). The respiratory rate at this elevation peaks at one week and then slowly decreases over the next few months, although it tends to remain higher than its normal rate at sea level. There have been a few facilities located at 5000 feet or higher that have been required to produce a Hot Spots risk assessment. However, long-term residents at high altitude will have breathing rates near what is found in residents at sea level. OEHHA does not anticipate any adjustments will be needed to the breathing rates at higher altitudes in California, although the Districts should consider this issue and adjust if needed for very high altitude facilities.

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3.2 Breathing Rate Recommendations

3.2.1 Long-Term Breathing Rates

The recommended long-term daily breathing rate point estimates in Table 3.1 are based on a mean of two different methods used to determine daily breathing rates, the doubly labeled water method and an energy intake approach based on food consumption data from the Continuing Survey of Food Intake of Individuals (CSFII) (See Section 3.5.5). These methods are described in detail below. The recommended distributions for stochastic analysis are presented in Tables 3.2a-b. The breathing rates normalized to body weight are expressed in L/kg-day, and the non-body weight-normalized breathing rates are expressed in m^3/day. All values were rounded to two or three significant figures.

Table 3.1. Recommended Point Estimates for Long-Term Daily Breathing Rates

	3rd Trimester	0<2 years	2<9 years	2<16 years	16<30 years	16<70 years
	L/kg-day					
Mean	225	658	535	452	210	185
95th Percentile	361	1090	861	745	335	290
	m^3/day					
Mean	15.3	6.2	10.7	13.3	15.0	13.9
95th Percentile	23.4	11.2	16.4	22.6	23.5	22.9

OEHHA calculated mean and high end breathing rates for the third trimester assuming the dose to the fetus during the third trimester was the same as that to the mother.

TABLE 3.2a. Recommended Breathing Rate Distributions (L/kg-day) by Age Group for Stochastic Analysis

	3rd Trimester	0<2 years	2<9 years	2<16 years	16<30 years	16-70 years
Distribution	Max extreme	Max extreme	Max extreme	Log-normal	Logistic	Logistic
Minimum	78	196	156	57	40	13
Maximum	491	2,584	1,713	1,692	635	860
Scale	59.31	568.09	125.59		40.92	36.19
Likeliest	191.50	152.12	462.61			
Location				-144.06		
Mean	225	658	535	452	210	185
Std Dev	72	217	168	172	75	67
Skewness	0.83	2.01	1.64	1.11	0.83	1.32
Kurtosis	3.68	10.61	7.88	6.02	5.17	10.83
Percentiles						
5%	127	416	328	216	96	86
10%	142	454	367	259	118	104
25%	179	525	427	331	161	141
50%	212	618	504	432	207	181
75%	260	723	602	545	252	222
80%	273	758	631	572	261	233
90%	333	934	732	659	307	262
95%	361	1090	861	745	335	290
99%	412	1430	1,140	996	432	361

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TABLE 3.2b. Recommended Breathing Rate Distributions (M^3/day) by Age Group for Stochastic Analysis

	3rd Trimester	0<2 years	2<9 years	2<16 years	16<30 years	16-70 years
Distribution	Logistic	Log-normal	Log-normal	Log-normal	Logistic	Log-normal
Minimum	4.0	0.8	2.7	2.7	1.5	1.8
Maximum	29.0	20.1	31.7	52.3	75.4	75.4
Scale	2,403.72				2,992.97	
Location		-650.7	-1,072.8	598.9		-8,251.3
Mean	15.1	6.2	10.7	13.3	15.0	13.9
Std Dev	4.3	2.6	3.1	4.9	5.4	5.4
Skewness	0.48	1.06	0.912	1.39	1.16	1.42
Kurtosis	3.73	4.69	5.18	7.14	12.22	11.19
Percentiles						
5%	8.6	2.9	6.1	6.9	6.4	6.3
10%	10.4	3.3	6.9	8.1	8.5	7.6
25%	12.3	4.4	8.5	9.9	11.8	10.3
50%	15.1	5.8	10.4	12.3	14.7	13.6
75%	17.6	7.6	12.4	15.9	18.0	16.8
80%	18.2	8.1	13.0	16.7	18.9	17.6
90%	21.4	9.6	14.8	19.5	21.5	20.1
95%	23.4	11.2	16.4	22.6	23.5	22.9
99%	28.8	13.9	20.0	28.1	29.9	28.0

3.2.2 Eight-hour Breathing Rate Point Estimates

The 8-hour breathing rates are based on minute ventilation rates derived by U.S. EPA (2009). The minute ventilation rates, presented in Section 3.6, were multiplied by 480 (60 min x 8) to generate 8-hour breathing rate point estimates shown in Table 3.3. The 8-hour breathing rates may be useful for cancer risk assessment for the off-site worker exposure scenario, and school exposures to facility emissions. They may also be useful for evaluating residential exposures where the facility operates non-continuously. The 8-hour breathing rates vary depending on the intensity of the activity. Exposed individuals may be engaged in activities ranging from watching TV to desk work, which would reflect breathing rates of sedentary/passive or light activities, to yard work or farm worker activities, which would reflect breathing rates of moderate intensity or greater. Breathing rates resulting from high intensity activities generally cannot be sustained for an 8-hour period (see Section 3.6).

OEHHA recommends using point estimate 8-hour breathing rates in L/kg-8-hrs based on the mean and 95th percentile of moderate intensity activities, 170 and 230 L/kg-8-hrs, respectively, for adults 16-70 yrs old. Point estimates for lower breathing rates of

sedentary/passive and light intensity work activities may be used in site-specific scenarios (i.e., work in which activity is limited to desk jobs or similar work). Pregnant women will generally participate in lower intensity activities than non-pregnant women, but as shown in Tables 3.1 and 3.2, breathing rate normalized to body weight will be slightly greater than breathing rates of adult men and non-pregnant women combined. OEHHA recommends using the mean and 95th percentile 8-hour breathing rates based on moderate intensity activity of 16<30 year-olds for third trimester women.

Table 3.3a. Eight Hour Breathing Rate (L/kg-8 Hr) Point Estimates for Males and Females Combined

	0<2 years	2<9 years	2<16 years	16<30 years	16-70 years
	Sedentary & Passive Activities (METS ≤ 1.5)				
Mean	200	100	80	30	30
95th Percentile	250	140	120	40	40
	Light Intensity Activities (1.5 < METs ≤ 3.0)				
Mean	490	250	200	80	80
95th Percentile	600	340	270	100	100
	Moderate Intensity Activities (3.0 < METs ≤ 6.0)				
Mean	890	470	380	170	170
95th Percentile	1200	640	520	240	230

Table 3.3b. Eight-Hour Breathing Rate (M^3/8-Hr) Point Estimates for Males and females Combined

	0<2 years	2<9 years	2<16 years	16<30 years	16-70 years
	Sedentary & Passive Activities (METS ≤ 1.5)				
Mean	1.86	2.24	2.37	2.33	2.53
95th Percentile	2.69	2.99	3.20	3.23	3.34
	Light Intensity Activities (1.5 < METs ≤ 3.0)				
Mean	4.61	5.44	5.66	5.72	6.03
95th Percentile	6.51	7.10	7.52	7.75	7.80
	Moderate Intensity Activities (3.0 < METs ≤ 6.0)				
Mean	8.50	10.20	10.84	12.52	12.94
95th Percentile	12.36	13.47	14.52	18.08	18.07

3.2.3 Short-term (1-Hour) Ventilation Rate Point Estimates

One-hour ventilation rates (Tables 3.4a-b) were calculated from U.S. EPA (2009) minute ventilation rates (e.g., minute ventilation rate x 60) to meet the SB-352 mandate for school districts to conduct a risk assessment for school sites located within 100 M of a freeway or busy roadway. These ventilation rates allow assessment of exposures to facility emissions during the course of the school day.

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The age groups for children mostly deviate from those child age groupings designed for AB2588. The age groups attempt to address specific school categories (e.g., kindergarten, grade school, high school) under SB-352. However, if 1-hr ventilation rates are required that fit the AB2588 age groups, 1-hr ventilation rates can be calculated from the 8-hr breathing rates shown in Tables 3.28a-b.

Table 3.4a. One-Hour Breathing Rates for SB352 School Sites in L/kg-60 min (Males and Females Combined)

	0<2 Years	2<6 years	6<11 years	11<16 years	16-70 years
	Sedentary & Passive Activities (METS ≤ 1.5)				
Mean	25	17	10	6	4
95th Percentile	31	23	14	8	5
	Light Intensity Activities (1.5 < METS ≤ 3.0)				
Mean	61	41	23	14	10
95th Percentile	75	54	32	19	13
	Moderate Intensity Activities (3.0 < METS ≤ 6.0)				
Mean	110	76	44	28	21
95th Percentile	140	100	62	39	29
	High Intensity Activities (METS ≥ 6.0)				
Mean	-	140	82	55	38
95th Percentile	-	190	110	80	56

Table 3.4b. One-Hour Breathing Rates for SB352 School Sites in M^3/60 min (Males and Females Combined)

	0<2 Years	2<6 years	6<11 years	11<16 years	16-70 years
	Sedentary & Passive Activities (METS ≤ 1.5)				
Mean	0.23	0.27	0.29	0.33	0.32
95th Percentile	0.34	0.36	0.39	0.45	0.42
	Light Intensity Activities (1.5 < METS ≤ 3.0)				
Mean	0.58	0.68	0.68	0.76	0.75
95th Percentile	0.81	0.86	0.91	1.03	0.97
	Moderate Intensity Activities (3.0 < METS ≤ 6.0)				
Mean	1.06	1.25	1.30	1.50	1.62
95th Percentile	1.54	1.63	1.73	2.05	2.26
	High Intensity Activities (METS ≥ 6.0)				
Mean	-	2.24	2.49	2.92	3.01
95th Percentile	-	2.98	3.51	4.18	4.39

For children at school, MET activity levels equivalent to sitting at a desk during instruction and outside at play can be used as guidance for determining 1-hour breathing rates. As shown in Table 3.26 below, sitting was assigned a MET of 1.5, while play outdoors, recess and physical education had mean MET values in the range

of 4.5 to 5.0 (U.S. EPA, 2009). Thus, 1-hour breathing rates based on sedentary/passive or light activities to represent activities within the class room and moderate intensity activities to represent activities during recess and some physical education classes, are recommended.

U. S. EPA (2009) also determined ventilation rates for high intensity activities with MET values $\geq$ 6.0. The distributions generated by U.S. EPA for hrs/day spent at MET values ≥6.0 for infants (age 0<2 yrs) suggests that this level of activity is unlikely for this age group. However, there is a subgroup of children in the older child age groups that exercise at this level for at least one hr/day, although this level of activity may not happen all in one hour's time. OEHHA recommends using 1-hr high intensity ventilatory rates for after-school sports and training that require high energy output such as track, football, tennis etc. This MET category may also be used for demanding sports during physical education classes.

3.3 Estimation of Daily Breathing Rates

3.3.1 Inhalation Dose and Cancer Risk

The approach to estimating cancer risk from long-term inhalation exposure to carcinogens requires calculating a range of potential doses and multiplying by cancer potency factors in units of inverse dose to obtain a range of cancer risks. This range reflects variability in exposure rather than in the dose-response. In equation 3-1, the daily breathing rate (L/kg BW-day) is the variate which is varied for each age group.

The general algorithm for estimating dose via the inhalation route is as follows:

$$DOSEair = Cair \times [BR/BW] \times A \times EF \times (1 \times 10^{-6}) \quad \textbf{(Eq. 3-1)}$$

where:

DOSEair	= dose by inhalation (mg/kg BW-day)
Cair	= concentration in air (μg/m^3)
[BR/BW]	= daily breathing rate normalized to body weight (L/kg BW-day)
A	= inhalation absorption factor, if applicable (default = 1)
EF	= exposure frequency (days/365 days)
1 x 10^{-6}	= conversion factors (μg to mg, L to m^3)

The inhalation absorption factor (A) is a unitless factor that is only used if the cancer potency factor itself includes a correction for absorption across the lung. It is inappropriate to adjust a dose for absorption if the cancer potency factor is based on applied rather than absorbed dose. The exposure frequency (EF) is set at 350 days per year (i.e., per 365 days) to allow for a two week period away from home each year.(US EPA, (1991). Another factor may come into consideration in the inhalation dose equation, the fraction of time at home (FAH). See Chapter 11 for more details.
For cancer risk, the risk is calculated for each age group using the appropriate age sensitivity factors (ASFs) and the chemical-specific cancer potency factor (CPF), expressed in units of (mg/kg-day)$^{-1}$.

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$$RISKair = DOSEair * CPF * ASF * ED/AT \quad \textbf{(Eq. 3-2)}$$

RISK is the predicted risk of cancer (unitless) over a lifetime as a result of the exposure, and is usually expressed as chances per million persons exposed (e.g., 5 x 10^{-6} would be 5 chances per million persons exposed).

The dose-response phase of a cancer risk assessment aims to characterize the relationship between an applied dose of a carcinogen and the risk of tumor appearance in a human. This is usually expressed as a cancer potency factor, or CPF, in the above equation. The CPF is the slope of the extrapolated dose-response curve and is expressed as units of inverse dose (mg/kg-d)$^{-1}$, or inverse concentration (μg/m^3)$^{-1}$.

Exposure duration (ED) is the number of years within the age groupings. In order to accommodate the use of the ASFs (OEHHA, 2009), the exposure for each age grouping must be separately calculated. Thus, the DOSEair and ED are different for each age grouping. The ASF, as shown below, is 10 for the third trimester and infants 0<2 years of age, is 3 for children age 2<16 years of age, and is 1 for adults 16 to 70 years of age.

ED = exposure duration (yrs):

0.25 yrs for third trimester	(ASF = 10)
2 yrs for 0<2 age group	(ASF = 10)
7 yrs for 2<9 age group	(ASF = 3)
14 yrs for 2<16 age group	(ASF = 3)
14 yrs for 16<30 age group	(ASF = 1)
54 yrs for 16-70 age group	(ASF = 1)

AT, the averaging time for lifetime cancer risks, is 70 years in all cases. To determine lifetime cancer risks, the risks are then summed across the age groups:

$$RISKair_{(lifetime)} = RISKair_{(3rdtri)} + RISKair_{(0<2\ yr)} + RISKair_{(2<16\ yr)} + RISKair_{(16\text{-}70yr)} \quad \textbf{(Eq. 3-3)}$$

As explained in Chapter 1, we also need to accommodate cancer risk estimates for the average (9 years) and high-end (30 years) length of time at a single residence, as well as the traditional 70 year lifetime cancer risk estimate. For example, assessing risk in a 9 year residential scenario assumes exposure during the most sensitive period, from the third trimester to 9 years of age and would be presented as follows:

$$RISKair_{(9\text{-}yr\ residency)} = RISKair_{(3rdtri)} + RISKair_{(0<2\ yr)} + RISKair_{(2<9\ yr)} \quad \textbf{(Eq. 3-4)}$$

For 30-year residential exposure scenario, the 2<16 and 16<30 age group RISKair would be added to the risk from exposures in the third trimester and ages 0<2yrs. For 70 year residency risk, Eq 3-3 would apply.

3.3.2 Methods for Estimating Daily Breathing Rates

Two basic techniques have been developed to indirectly estimate daily breathing rates: the time-activity-ventilation (TAV) approach and an energy expenditure derivation

method. Ideally, daily breathing rates would be directly measured. However, the equipment for direct measurement is bulky and obtrusive and thus impractical for measuring breathing rates over an entire 24-hour period, especially on children performing their typical activities. Thus, ventilation measurements are typically taken for shorter time periods under specific conditions (e.g., running or walking on a treadmill).

The TAV approach relies on estimates or measurements of ventilation rates at varying physical activity levels, and estimates of time spent each day at those activity levels. An average daily breathing rate is generated by summing the products of ventilation rate (L/min) and time spent (min/day) at each activity level.

The second approach derives breathing rates based on daily energy expenditure and was first proposed by Layton (1993). Layton reasoned that breathing rate is primarily controlled by the amount of oxygen needed to metabolically convert food into energy the body can use. Because the volume of oxygen required to produce one kcal of energy and the ratio of the volume of oxygen consumed to the volume of air inhaled per unit time are both constant values, the amount of energy a person expends is directly proportional to the volume of air the person breathes. Layton (1993) developed an equation that models this relationship and that can be used to derive breathing rates from energy expenditure data:

$$VE = H \times VQ \times EE \qquad \textbf{(Eq. 3-5)}$$

where:

VE = the volume of air breathed per day (L/day),
H = the volume of oxygen consumed to produce 1 kcal of energy (L/kcal),
VQ = the ratio of the volume of air to the volume of oxygen breathed per unit time and is referred to as the breathing equivalent (unitless)
EE = energy (kcal) expended per day

Layton calculated an H value of 0.21 L/kcal for noninfant children. Arcus-Arth and Blaisdell (2007) calculated essentially the same H value of 0.22 L/kcal from data of non -breastfed infants based on food surveys. For VQ, Layton calculated a value of 27 from adult data. Children have different respiratory minute ventilation rates, as well as other respiratory parameter values, relative to adults. Therefore, children's VQ values can be different from those of adults. Arcus-Arth and Blaisdell (2007) calculated VQ values for children from which daily breathing rates can be derived (Table 3.5).

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Table 3.5. Mean VQ Values Calculated for Children

	Weighted mean VQ	Recommended VQ
Infants 0-11 mo.	nd[a]	33.5
Boys & girls 1-3 yrs	nd[a]	33.5
Boys & girls 4-8 yrs	33.5	33.5
Boys 9-18 yrs	30.6	30.6
Girls 9-18 yrs	31.5	31.5

[a] Insufficient or no data

Three variations of estimating EE have been used based on conversion of metabolic energy to derive a breathing rate: (1) from the caloric content of daily food intake, (2) as the product of basal metabolic rate (BMR) and ratios of average daily energy expenditure to BMR, and (3) as time-weighted averages of energy expenditure (expressed as multiples of BMR) across different levels of physical activity during the course of a day. Published reports applying these variations in metabolic energy conversion to arrive at breathing rates using Layton's equation are summarized below.

In addition to using energy intake data with Layton's method to derive breathing rates, an approach called the doubly labeled water (DLW) technique has also been used to derive total energy expenditure and is summarized below. The DLW data have been shown to be quite accurate, but the approach has only been applied to specific sub-populations.

3.4 Available Daily Breathing Rate Estimates

There are a number of sources of information on daily breathing rates for various age groups and other subpopulations that have been derived via the methods described above. Some sources have compiled breathing rates from other studies.

3.4.1 Traditional Breathing Rate Estimation

The book Reference Man (Snyder et al., 1975), a report by the International Commission on Radiological Protection (ICRP), presents breathing rates based on about 10 limited studies. Using an assumption of 8 hour (hr) resting activity and 16 hr light activity and the breathing rates (see Table 3.6), ICRP recommended daily breathing rates of 23 m^3/day for adult males, 21 m^3/day for adult females, and 15 m^3/day for a 10 year old child. In addition, assuming 10 hr resting and 14 hr light activity each day, ICRP recommends a daily breathing rate of 3.8 m^3/day for a 1 year old. Finally, assuming 23 hr resting and 1 hr light activity, ICRP recommends a daily breathing rate of 0.8 m^3/day for a newborn. The breathing rates estimated by the ICRP used sources that had a small sample size and were limited in scope. Table 3.6 is the minute volume data upon which the daily breathing rates were based.

Table 3.6. Minute Volumes from ICRP'S Reference Man [a]

	Resting L/min (m^3/hr)	Light Activity L/min (m^3/hr)
Adult male	7.5 (0.45)	20 (1.2)
Adult female	6.0 (0.36)	19 (1.14)
Child, 10 yr	4.8 (0.29)	13 (0.78)
Child, 1 yr	1.5 (0.09)	4.2 (0.25)
Newborn	0.5 (0.03)	1.5 (0.09)

[a] Data compiled from available studies measuring minute volume at various activities by age/sex categories

This report provided the approach used in traditional risk assessment, in that a single estimate of daily breathing was employed, often 20 m^3/day for a 70-kg person.

3.4.2 Daily Breathing Rate Estimates Based on Time-Activity-Ventilation (TAV) Data

3.4.2.1 Marty et al. (2002)

Marty et al. (2002) derived California-specific distributions of daily breathing rates using estimates and measurements of ventilation rates at varying physical activity levels, and estimates of time spent each day at those activity levels. Two activity pattern studies were conducted in which activities of a randomly sampled population of 1762 adults and 1200 children were recorded retrospectively for the previous 24 hours via telephone interview (Phillips et al., 1991; Wiley et al., 1991a; Wiley et al., 1991b; Jenkins et al., 1992). Measured breathing rates in people performing various laboratory and field protocols were conducted by Adams et al. (1993). The subjects in this study were 160 healthy individuals of both sexes, ranging in age from 6 to 77 years. An additional forty 6 to 12 year olds and twelve 3 to 5 year olds were recruited for specific protocols.

For adults, each activity was assigned to a resting, light, moderate, moderately heavy, or heavy activity category to reflect the ventilation rate that could reasonably be associated with that activity. For children there were only resting, light, moderate, and heavy activity categories. The ventilation rates were classified into similar levels (e.g., the lying down protocol was considered the resting category of ventilation rate). The measured ventilation for each individual in the lab and field protocols was divided by that person's body weight. For each individual, the time spent at each activity level was summed over the day. The mean ventilation rate for each category (resting, etc.) was then multiplied by the summed number of minutes per day in that category to derive the daily breathing rate for each category. The breathing rates were then summed over categories to give a total daily breathing rate. The moments and percentiles for the raw derived breathing rates as well as for the breathing rates fit to a gamma distribution are presented in Tables 3.7 and 3.8 for the combined group of adolescents and adults (i.e., >12 years age) and for children (<12 years age). OEHHA staff also derived distributions of breathing rates for the equivalent of a 63-kg adult and

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an 18-kg child. These breathing rates form the basis of the current risk assessment guidelines (OEHHA, 2000), which this document is revising.

Table 3.7 Children's (<12 Years) Daily Breathing Rates (L/Kg-Day)

	Moments and Percentiles from Empirical Data	Moments and Percentiles, Fitted Gamma Parametric Model	Breathing Rate Equivalent for a 18 kg Child, m^3/Day (Empirical Data)
N	1200		
Mean	452	451	8.1
Std Dev	67.7	66.1	1.22
Skewness	0.957	0.9	
Kurtosis	1.19	4.32	
%TILES	**L/kg-day**		
1%	342.5	(not calculated)	6.17
5%	364.5	360.3	6.56
10%	375	374.9	6.75
25%	401.5	402.7	7.23
50%	441	440.7	7.94
75%	489.5	488.4	8.81
90%	540.5	537.9	9.73
95%	580.5	572.1	10.5
99%	663.3	(not calculated)	11.9
Sample Max	747.5		13.5

Table 3.8 Adult/Adolescent (>12 Years) Breathing Rates (L/kg-Day)

	Moments and Percentiles from Empirical Data	Moments and Percentiles, Fitted Gamma Parametric Model	Breathing Rate Equivalent for a 63 kg Adult, m^3/Day
N	1579		
Mean	232	233	14.6
Std Dev	64.6	56.0	4.07
Skewness	2.07	1.63	
Kurtosis	6.41	6.89	
%TILES	**L/kg-day**		
1%	174	(Not calculated)	11.0
5%	179	172.3	11.3
10%	181	178.0	11.4
25%	187	192.4	11.8
50%	209	218.9	13.2
75%	254	257.9	16.0
90%	307	307.8	19.3
95%	381	342.8	24.0
99%	494.0	(Not calculated)	31.1
Sample Max	693		43.7

Advantages of these rates are that the activity pattern data were from a large randomly sampled population of California adults and children, and that ventilation rates were normalized by body weight for each individual in the ventilation rate study. However, body weight information was not available for the activity pattern subjects. Measured breathing rates during specified activities were also collected from California participants with the intention that the data would be used in conjunction with the activity pattern data to derive daily breathing rates.

Limitations include the use of one-day activity pattern survey data that may tend to overestimate long-term daily breathing rates because both intraindividual variability and interindividual variability are poorly characterized. However, intraindividual variability is believed to be small relative to interindividual variability, which would make the breathing rate distributions reasonably accurate for chronic exposure assessment. Despite these limitations, the derived breathing rates were reasonably similar to those measured by the doubly-labeled water method (described in (OEHHA, 2000)).

Because the time-weighted average method involves professional judgment in assigning a breathing rate measured during a specific activity to various other types of activities, some uncertainty is introduced into the resulting daily breathing rates. Lastly, there is a paucity of breathing rate data for specific activities in children in the 3 to 6

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year age range, and no data for children and infants younger than 3 years old. Thus, only a broad age range (i.e., < 12 years old) could be used for estimating daily breathing rates in children. Daily breathing rates cannot be reliably estimated from this study for children and infants over narrow age ranges, such as the critical 0<2 year age group.

3.4.2.2 Allan et al. (2008)

Allan et al. (2008) also estimated breathing rates for specified age groups by the TAV approach, but employed a greater number of time-activity data sets than that used by Marty et al. (2002). This study updated TAV inhalation rate distributions from a previous report by Allan and Richardson (1998) by incorporating supplemental minute volume and time-activity data, and by correlating minute volume with metabolic equivalents (METs) for performing the physical activities at the time of measurement. Published time-activity and minute volume data used by Marty et al. (2002) were also used by the authors to develop the distributions (Wiley et al., 1991a; Wiley et al., 1991b; Adams, 1993), but also a number of other reports primarily conducted in the USA and Canada.

Their TAV approach calculated mean expected breathing rates for five different activity levels (i.e., level 1 – resting; level 2 – very light activity; level 3 – light activity; level 4 – light to moderate activity, level 5 – moderate to heavy activity). For infants, only three levels of activity were defined (i.e., sleeping or napping, awake but not crying, and crying).

Probability density functions describing 24-hour inhalation rates were generated using Monte Carlo simulation and can be described with lognormal distributions. Table 3.9 presents the estimated breathing rates in m^3/day for males and females (combined) by age groupings commonly used in Canada for risk assessment purposes. In their report, Allan et al. (2008) also provided breathing rates for males and females separately. However, breathing rate distributions adjusted for body weight (m^3/day-kg) were not included in the report.

Table 3.9. Allan et al. (2008) TAV-Derived Daily Breathing Rates (m^3/Day) for Males And Females Combined

Age Category	Males and Females Combined (m^3/day)			
	Mean + SD	50%-ile[a]	90%-ile[a]	95%-ile[a]
Infants (0-6 mo)	2.18 ± 0.59	2.06	2.87	3.12
Toddlers (7 mo-4 yr)	8.31 ± 2.19	7.88	10.82	11.72
Children (5-11 yr)	14.52 ± 3.38	13.95	18.49	19.83
Teenagers (12-19 yr)	15.57 ± 4.00	14.80	20.09	21.69
Adults (20-59 yr)	16.57 ± 4.05	15.88	21.30	22.92
Seniors (60+ yr)	15.02 ± 3.94	14.35	19.72	21.36

[a] Percentiles provided courtesy of Allan (e-mail communication)

Allan et al. (2008) compared the breathing rate distribution derived by the DLW method (see below, Table 3.12) to their TAV breathing rate probability density function results and found that there appeared to be longer tails in the upper bounds for all age groups except teenagers and infants for the TAV method, suggesting the TAV distribution gives

a better representation of the more exposed members of the population such as athletes. For teenagers, the TAV and DLW distributions show considerable overlap. But for infants, lower breathing rates were observed by the TAV approach compared with the DLW approach. The authors could not explain this discrepancy. Unlike the Marty et al. (2002) study, daily breathing rates could be estimated in infants and toddlers. However, there is still a shortage of TAV data in children in the younger age groups relative to adults.

Uncertainty was reduced by grouping activities by expected METs. However, Allen et al. (2008) noted that there is still uncertainty about actual physical exertion at an activity level because of the way some source studies grouped activities (e.g., grouping walking with running). Uncertainty was also reduced by using, wherever possible, studies that documented all activities over a multi-day period rather than studies that considered only a few hours of behavior. Nevertheless, there is some uncertainty in combining data from disparate studies and in assigning ventilation rates to activities that are not described by energy expenditure levels. In particular, interpolations and extrapolations were used to fill in minute volume data gaps and may have resulted in overestimates or underestimates. For example, minute volume data for some activity levels in toddlers and children were considered insufficient to adequately characterize their minute volumes.

3.4.3 Daily Breathing Rate Estimates Based on Energy Expenditure

As discussed above, Layton (1993) developed a mathematical equation to estimate daily breathing rates based on energy expenditure. The paper also presented examples of breathing rates that had been derived using this method.

3.4.3.1 Layton (1993)

Layton took three approaches to estimating breathing rates from energy estimates. The first approach used the U.S.D.A.'s National Food Consumption Survey (1977-78) data to estimate energy (caloric) intake. The National Food Consumption Survey used a retrospective questionnaire to record three days of food consumption by individuals in households across the nation, and across all four seasons. Layton recognized that food intake is underreported for individuals 9 years of age and older in these surveys and therefore adjusted the reported caloric intake for these ages. These data are no longer the most current population based energy intake data available. Further, the breathing rates are not normalized to body weight.

The second approach to estimating breathing rates multiplied the BMR estimated for a given age-gender group by the estimated ratio of energy intake to basal metabolic rate (EFD/BMR) for that age-gender group. The BMR can be determined as a linear function of body weight, after accounting for gender and age. An activity multiplier can then be applied which is derived from previously reported ratios of daily food intake to BMR. The advantages of this approach include linking breathing rates to BMR, which is valuable since breathing rates are considered to be determined primarily by BMR.

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However, the BMR for each age-gender group was calculated from equations derived from empirical but non-representative data. Further, these data were collected using techniques that may be outdated (e.g., for the 0-3 year age group, 9 of the 11 studies were conducted between 1914 and 1952). These data may no longer be representative of the current population. The EFD/BMR ratios for males and females over 18 years of age were estimated from data collected over one year in one study while those for other age groups were estimated based on the consistency of the value in calculating energy expenditures similar to other studies. Average body weights do not capture the variability of body weights in the population. Thus the BMR values may not be as accurate as current technology can provide nor are they representative of the population.

Layton's third approach to calculate daily breathing rates involves the metabolic equivalent (MET) approach, which is a multiple of the BMR and reflects the proportional increase in BMR for a specific activity. For example, the MET for standing is 1.5 (i.e., 1.5*BMR), and the MET for cycling and swimming is 5.3. Layton categorized METs into 5 levels (from light activity with a MET = 1 to very strenuous activities with a MET = 10). MET levels were then assigned to each activity in a study that had categorized activities by energy expenditure level and recorded the time study participants spent at each activity. The energy expended at each activity was converted to a breathing rate and then summed over the day to give a daily breathing rate. However, the time-activity data used in this approach were only available for ages over 18 years.

The results of Layton's approaches are presented in Table 3.10. Layton did not report statistical distributions of the breathing rates that he derived. Other limitations, for our purposes, are that the breathing rates in Table 3.6 are not representative of the current U.S. population, are not normalized to body weight, and were for broad age ranges. In addition, no distributions were reported in the paper.

Table 3.10. Layton (1993) Estimates of Breathing Rate Based on Caloric and Energy Expenditure

Method	Breathing Rate – Men m^3/day	Breathing Rate – Women m^3/day
Time-weighted average lifetime breathing rates based on food intake	14	10
Average daily breathing rates based on the ratio of daily energy intake to BMR	13-17 (over 10 years of age)	9.9-12 (over 10 years of age)
Breathing rates based on average energy expenditure	18	13

Finley et al. (1994) presented probability distributions for several exposure factors, including inhalation rates. Based on the data Layton used to derive point estimates via his third approach (i.e., with energy expenditure equivalent to a multiple of BMR), Finley

et al. (1994) expanded on Layton's results to develop a probability distribution for breathing rate for several age groups (Table 3.11).

Table 3.11. Selected Distribution Percentiles from Finley et al. (1994) for Breathing Rates by Age

Age Category (years)	Percentile (m^3/day)		
	50th	90th	95th
<3	4.7	6.2	6.7
3 -10	8.4	10.9	11.8
10 – 18	13.1	17.7	19.3
18 – 30	14.8	19.5	21.0
30 – 60	11.8	15.4	16.7
>60	11.9	15.6	16.7

Because Finley largely used the same data as Layton to develop breathing rate distributions, the same limitations apply.

3.4.3.2 Arcus-Arth and Blaisdell (2007)

Arcus-Arth and Blaisdell (2007) derived daily breathing rates for narrow age ranges of children and characterized statistical distributions for these rates. The rates were derived using the metabolic conversion method of Layton (1993) and energy intake data (calories consumed per day) from the Continuing Survey of Food Intake of Individuals (CSFII) 1994–1996, 1998 conducted by the USDA (2000). The CSFII provided the most recent population based energy data at the time. The CSFII dataset consisted of two days of recorded food intake for each individual along with self-reported body weights. The individual data allowed for the assessment of interindividual variability. Because one-day intakes may be less typical of average daily intake, the two-day intakes were averaged to obtain a better estimate of typical intake available from these limited repeated measures. The CSFII energy intakes were weighted to represent the U.S. population. The rates were intended to be more representative of the current U.S. children's population than prior rates that had been derived using older or non-representative data.

The premise for Layton's equation is that breathing rate is proportional to the oxygen required for energy expenditure. While there are no energy expenditure data that are representative of the population, there are population representative energy intake data (i.e., calories consumed per day). Energy intake data can be used in Layton's equation when energy intake equals energy expenditure. Energy intake is equal to energy expended when the individual is neither gaining nor losing body weight (i.e., all energy intake is expended). Because the percentage of daily energy intake that is needed to result in a discernible change in body weight for adults is very small, it can be assumed that for adults energy intake equals energy expended. However, in young infants, a significant portion of their daily energy intake is deposited in new tissue (e.g., adipose, bone and muscle). The deposited energy is referred to as the energy cost of deposition (ECD). Therefore, the daily energy intake needed for normal growth of infants is used

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both for energy expenditure (EE) and ECD (i.e., energy intake = EE + ECD). If the breathing rate is to be estimated by the caloric intake approach for growing infants, the ECD must be subtracted from the total daily energy intake in order to determine an accurate breathing rate.

Accounting for the ECD is primarily important for newborn infants (Butte et al., 1990; Butte et al., 2000). For example, at ages 3 and 6 months the energy cost for growth constituted 22 and 6%, respectively, of total energy requirements. In older children the energy cost is only 2-3% of total energy requirements. By the age of 25 years in males and 19 years in females, the ECD has essentially decreased to zero and remains at that level throughout adulthood (Brochu et al., 2006a).

Because Layton's equation requires only energy expenditure to derive the breathing rate, a small modification to Eq. 3-5 is made when deriving the infant breathing rate using the caloric intake approach:

$$VE = H \times VQ \times (TDEI - ECD) \times 10^{-3} \qquad \text{(Eq. 3-6)}$$

where:

TDEI = Total daily energy intake (kcal/day)
ECD = Daily energy cost of deposition (kcal/day)

Arcus-Arth and Blaisdell (2007) subtracted the ECD from the TDEI to give a more accurate estimate of energy expended. The ECD for each month of age for infants up to 11 months of age was estimated from Scrimshaw et al. (1996). Although there is typically a burst of growth just prior to and during adolescence, Arcus-Arth and Blaisdell did not subtract the ECD during adolescence because investigators considered it negligible relative to total energy intake (Spady, 1981; Butte et al., 1989).

Layton (1993) reported on the bias associated with underreporting of dietary intakes by older children. He calculated a correction factor for this bias (1.2) and multiplied the daily energy intake of each child nine years of age and older by 1.2. Arcus-Arth and Blaisdell, having evaluated the literature and finding Layton's adjustment to be reasonable, likewise multiplied daily energy intake of adolescent ages by 1.2.

Arcus-Arth and Blaisdell (2007) also evaluated the numerical values used by Layton for the VQ and H conversion factors in his metabolic equation. Their estimated value for the conversion factor H was similar to that found by Layton. However, they found data in the literature indicating that other values of VQ may be more specific to children than those used by Layton (see Table 3.5). The VQ values Arcus-Arth and Blaisdell calculated were used to derive breathing rates.

Non-normalized (L/day) and normalized (L/kg-day) breathing rates shown in Tables 3.8a-e) were derived for both children and adults from the CSFII dataset using the methodology described in Arcus-Arth and Blaisdell (2007). Briefly, the CSFII used a multistage complex sampling design to select individuals to be surveyed from the population. The CSFII recommended using a Jacknife Replication (JK) statistical

method (Gossett et al., 2002; Arcus-Arth and Blaisdell, 2007), which is a nonparametric technique that is preferred to analyze data from multistage complex surveys.

For each age group, the mean, standard error of the mean, percentiles (50th, 90th, and 95th) of non-normalized and normalized breathing rates, derived as described, are presented in Tables 3.12a and 3.12b, respectively. Child breathing rates are for males and females combined, except for the 9-18 yr adolescent age group breathing rates shown at the bottom of the tables.

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TABLE 3.12a. Non-Normalized Daily Breathing Rates (L/Day) for Children and Adults Using CSFII Energy Intake and Layton's Equation

Age	Sample Size Nonweighted	Mean	SEM	50%-ile	90%-ile	95%-ile	SE of 95%-ile
Age (months)	**Infancy**						
0-2	182	3630	137	3299	5444 [1]	7104 [1]	643
3-5	294	4920	135	4561	6859	7720	481
6-8	261	6089	149	5666	8383	9760	856
9-11	283	7407	203	6959	10,212	11,772	**
0-11	1020	5703	98	5323	8740	9954	553
Age (years)	**Children**						
1	934	8770	75	8297	12,192	13,788	252
2	989	9758	100	9381	13,563	14,807	348
3	1644	10,642	97	10,277	14,586	16,032	269
4	1673	11,400	90	11,046	15,525	17,569	234
5	790	12,070	133	11,557	15,723	18,257	468
6	525	12,254	183	11,953	16,342	17,973	868
7	270	12,858	206	12,514	16,957	19,057	1269
8	253	13,045	251	12,423	17,462	19,019	1075
9	271	14,925	286	14,451	19,680	22,449 [1]	1345
10	234	15,373	354	15,186	20,873	22,898 [1]	1021
11	233	15,487	319	15,074	21,035	23,914 [1]	1615
12	170	17,586	541	17,112	25,070 [1]	29,166 [1]	1613
13	194	15,873	436	14,915	22,811 [1]	26,234 [1]	1106
14	193	17,871	615	15,896	25,748 [1]	29,447 [1]	4382
15	185	18,551	553	17,913	28,110 [1]	29,928 [1]	1787
16	201	18,340	536	17,370	27,555	31,012	2065
17	159	17,984	957	15,904	31,421 [1]	36,690 [1]	**
18	135	18,591	778	17,339	28,800 [1]	35,243 [1]	4244
0<2	1954	7502	75	7193	11,502	12,860	170
2<16	7624	14,090	120	13,128	20,993	23,879	498
	Adolescent Boys						
9-18	983	19,267	278	17,959	28,776	32,821	1388
	Adolescent Girls						
9-18	992	14,268	223	13,985	21,166	23,298	607

[1] Value may be less statistically reliable than other estimates due to small cell size
** Unable to calculate

Table 3.12b. Normalized Daily Breathing Rates (L/kg-Day) for Children and Adults Using CSFII Energy Intake and Layton's Equation

Age	Sample Size Nonweighted	Mean	SEM	50%-ile	90%-ile	95%-ile	SE of 95%-ile
Age (months)	**Infancy**						
0-2	182	839	42	725	1305	1614	290
3-5	294	709	24	669	1031	1232	170
6-8	261	727	16	684	1017	1136	73
9-11	283	760	20	710	1137	1283	96
0-11	1020	751	11	694	1122	1304	36
Age (years)	3.4.3.3 **Children**						
1	934	752	7	716	1077	1210	33
2	989	698	9	670	986	1107	31
3	1644	680	6	648	966	1082	18
4	1673	645	5	614	904	1011	19
5	790	602	7	587	823	922	25
6	525	550	10	535	765	849	28
7	270	508	9	495	682	788	39
8	253	458	11	439	657	727	37
9	271	466	11	445	673	766 [1]	21
10	234	438	12	425	661	754 [1]	38
11	233	378	9	350	566	616 [1]	32
12	170	373	13	356	545 [1]	588 [1]	46
13	194	311	12	289	459 [1]	588 [1]	55
14	193	313	12	298	443 [1]	572 [1]	92
15	185	299	10	285	461 [1]	524 [1]	25
16	201	278	10	258	434	505	46
17	159	276	15	251	453 [1]	538 [1]	**
18	135	277	10	244	410 [1]	451 [1]	42
0<2	1954	752	6	706	1094	1241	24
2<16	7624	481	3	451	764	869	6
	Adolescent Boys						
9-18	983	367	5	343	567	647	14
	Adolescent Girls						
9-18	992	315	6	288	507	580	24

[1] Value may be less statistically reliable than other estimates due to small cell size
** Unable to calculate

Ideally, breathing rates and other variates used in risk assessment should be as representative as possible of the exposed population. Population representative daily energy (caloric) intake can be estimated from national food consumption surveys, such as the CSFII and the National Health and Nutrition Examination Survey (NHANES). These surveys can be analyzed to provide results that are representative of the nation

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and of several subpopulations, including narrow age groups. The sample sizes are large with these surveys and thus provide relatively robust results, which is of particular concern for the tails of probability distributions.

Limitations for the CSFII energy intake-derived breathing rates include the underreporting of food intakes discussed above. Underestimation of energy intake leads to underestimation of breathing rates. Another limitation is that only two days of food intake data had been collected. Although collection of two consecutive days of food intake is an improvement over earlier collections of one day of food intake, the repeated measures in the survey were still too limited to reduce the impact of daily variations in food intake and would tend to overestimate the upper and lower percentiles. Typical intake is not captured by the caloric intake of two days, and breathing rate and dietary intake on any given day are not tightly coupled.

3.4.3.4 US EPA (2009) Metabolic Equivalent-Derived Daily Breathing Rate Estimates

Similar to one of the approaches Layton (1993) used to estimate the breathing rate, U.S. EPA employed a metabolic equivalent (METS) approach for estimating breathing rates. This method determines daily time-weighted averages of energy expenditure (expressed as multipliers of the basal metabolic rate) across different levels of physical activity. METs provide a scale for comparing the physical intensities of different activities. Recent energy expenditure data including the 1999-2002 NHANES and U.S EPA's Consolidated Human Activity Database (CHAD) were used that considers variability due to age, gender, and activities. NHANES (CDC, 2000; 2002) was used as the source of body weight data, and CHAD (U.S. EPA, 2002) was the central source of information on activity patterns and METS values for individuals. The 4-year sampling weights assigned to the individuals within NHANES 1999-2002 were used to weight each individual's data values in the calculations of these statistics.

Data were grouped into age categories and a simulated 24-hour activity pattern was generated by randomly sampling activity patterns from the set of participants with the same gender and age. Each activity was assigned a METS value based on statistical sampling of the distribution assigned by CHAD to each activity code. Using statistical software, equations for METS based on normal, lognormal, exponential, triangular and uniform distributions were generated as needed for the various activity codes. The METS values were then translated into energy expenditure (EE) by multiplying the METS by the basal metabolic rate (BMR), which was calculated as a linear function of body weight. The VO2 was calculated by multiplying EE by H, the volume of oxygen consumed per unit energy.

The inhalation rate for each activity within the 24-hour simulated activity pattern for each individual was then estimated as a function of VO2, body weight, age, and gender. Following this, the average inhalation rate was calculated for each individual for the entire 24-hour period, as well as for four separate classes of activities based on METS value (sedentary/passive [METS less than or equal to 1.5], light intensity [METS greater than 1.5 and less than or equal to 3.0], moderate intensity [METS greater than 3.0 and less than or equal to 6.0], and high intensity [METS greater than 6.0]. Data for

individuals were then used to generate summary tables with distributional data based on gender and age categories (Tables 3.13a and 3.13b). No parametric distributional assumptions were placed on the observed data distributions before these statistics were calculated.

Table 3.13a. US EPA (2009) Metabolically-Derived Daily Breathing Rate (m^3/Day in Males and Females Unadjusted For Body Weight

Age Category (years)	Means and Percentiles in m^3/day							
	Males				Females			
	Mean	50th	90th	95th	Mean	50th	90th	95th
Birth to <1	8.76	8.70	11.93	12.69	8.53	8.41	11.65	12.66
1	13.49	13.11	17.03	17.89	13.31	13.03	17.45	18.62
2	13.23	13.19	16.27	17.71	12.74	12.60	15.58	16.37
3 to <6	12.65	12.58	14.63	15.41	12.16	12.02	14.03	14.93
6 to <11	13.42	13.09	16.56	17.72	12.41	11.95	15.13	16.34
11 to <16	15.32	14.79	19.54	21.21	13.44	13.08	16.25	17.41
16 to <21	17.22	16.63	21.94	23.38	13.59	13.20	17.12	18.29
21 to <31	18.82	18.18	24.57	27.14	14.57	14.10	19.32	21.14
31 to <41	20.29	19.83	26.77	28.90	14.98	14.68	18.51	20.45
41 to <51	20.93	20.60	26.71	28.37	16.20	15.88	19.91	21.35
51 to <61	20.91	20.41	27.01	29.09	16.18	15.90	19.93	21.22
61 to <71	17.94	17.60	21.78	23.50	12.99	12.92	15.40	16.15

Table 3.13b. US EPA (2009) Metabolically-Derived Daily Breathing Rate (m^3/Kg-Day) in Males and Females Adjusted for Body Weight

Age Category (years)	Means and Percentiles in m^3/kg-day							
	Males				Females			
	Mean	50th	90th	95th	Mean	50th	90th	95th
Birth to <1	1.09	1.09	1.26	1.29	1.14	1.13	1.33	1.38
1	1.19	1.17	1.37	1.48	1.20	1.18	1.41	1.46
2	0.95	0.94	1.09	1.13	0.95	0.96	1.07	1.11
3 to <6	0.70	0.69	0.87	0.92	0.69	0.68	0.88	0.92
6 to <11	0.44	0.43	0.55	0.58	0.43	0.43	0.55	0.58
11 to <16	0.28	0.28	0.36	0.38	0.25	0.24	0.31	0.34
16 to <21	0.23	0.23	0.28	0.30	0.21	0.21	0.27	0.28
21 to <31	0.23	0.22	0.30	0.32	0.21	0.20	0.26	0.28
31 to <41	0.24	0.23	0.31	0.34	0.21	0.20	0.27	0.30
41 to <51	0.24	0.23	0.32	0.34	0.22	0.21	0.28	0.31
51 to <61	0.24	0.24	0.30	0.34	0.22	0.21	0.28	0.30
61 to <71	0.21	0.20	0.24	0.25	0.18	0.17	0.21	0.22

US EPA (2009) described the strengths and weaknesses of their approach. The strengths of this metabolically-derived method include nationally representative data sets with a large sample size, even within the age and gender categories. This approach also yields an estimate of ventilation rate that is a function of VO2 rather than

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an indirect measure of oxygen consumption such as VQ as other researchers have used.

Another strength is that the breathing rates included a BMR component which had been derived from NHANES body weights and to which NHANES sampling weights were linked. The BMR component of the breathing rates was representative of the population because of the sampling weights. That is, the degree of association between body weight and breathing rate was incorporated into the distribution of breathing rate distributions.

However, the degree of association between breathing rate and other characteristics (e.g., race, geographic region) was not incorporated into the distributions (US EPA, 2009). These non-body weight characteristics can be highly associated with variability in activity patterns. Although BMR may contribute the greatest percent to the quantitative breathing rate value, the variability in breathing rates is most likely driven by differing levels of physical activity by different persons. Because the activity data was collected over a 24-hour period, day-to-day variability is not well characterized (US EPA, 2009; US EPA, 2011). The outcome is that the simulated 24-hour activity pattern assigned to an NHANES participant is likely to contain a greater variety of different types of activities than one person may typically experience in a day.

Furthermore, because the simulated activity profiles did not consider possible limits on the "maximum possible METS value" that would account for previous activities, ventilation rates may be overestimated (US EPA, 2009). This happens, in part, because the MET approach does not take into consideration correlations that may exist between body weight and activity patterns. For example, high physical activity levels can be associated with individuals of high body weight, leading to unrealistically high inhalation rates at the upper percentiles levels (US EPA 2011). The result is that the central tendency of the MET breathing rates may be fairly representative of the population, but the breathing rates may not appropriately capture the variability within the population. This limitation was probably most evident in children <3 years of age where the data used to calculate BMR values may be less representative of the current population (US EPA, 2009).

3.4.4 Daily Breathing Rate Estimates from Doubly Labeled Water Measurements

In another method used to quantify human energy expenditure, published doubly-labeled water (DLW) energy expenditure data can be used in conjunction with Layton's equation to convert metabolic energy to daily inhalation rates (Brochu et al., 2006a; 2006b; Stifelman, 2007). In the DLW method, isotopically labeled water containing $^2H_20$ (i.e., heavy water) and $H_2{}^{18}0$ is given orally to the study participant. The isotopes then distribute in the body and disappear from body water pools by dilution from new unlabeled water into the body, by the excretion of the labeled isotope from the body, or by the production of CO_2. The difference in disappearance rates between the two isotopes represents CO_2 production over an optimal period of 1–3 half-lives (7 to 21 days in most human subjects) of the labeled water. CO_2 production is an indirect

measure of metabolic rate and can be converted into units of energy using knowledge of the chemical composition of the foods consumed.

A major advantage of the DLW method is that it provides an index of total energy expenditure over a period of 1 to 3 weeks, which is a more biologically meaningful period of time compared to the other methods, and can reduce the impact of daily variations in physical activity or food intake (IOM, 2005). In addition, the DLW method is non-invasive, requiring only that the subject drink the stable isotopes and provide at least three urine samples over the study period. Thus, measurements can be made in subjects leading their normal daily lives (i.e., free-living individuals). The DLW method is considered to be the most accurate method for determining the breathing rate of an individual (IOM, 2005).

A disadvantage is that the DLW method is expensive to undertake, and that essentially all the available studies investigated different age ranges but the subjects were not randomly selected to be representative of populations. However, measurements are available in a substantial number of men, women and children whose ages, body weights, heights and physical activities varied over wide ranges.

DLW measurements of total daily energy expenditures (TDEE) include basal metabolism, physical activity level, thermogenesis, and the synthetic cost of growth (Butte et al., 2000). The synthetic cost of growth is the energy that is expended to synthesize the molecules that will be stored. This is different from the energy deposited for growth (ECD), which is the energy intake that is deposited in the body for new tissue. The ECD is an important factor in newborn infants and is not accounted for in DLW measurements. Thus, the derivation of breathing rates using Layton's equation does not require an adjustment to subtract out the ECD to determine TDEE, as was necessary for deriving the breathing rates of infants by the caloric intake approach (Section 3.5.3.2).

3.4.4.1 Brochu et al. (2006a,b)

Brochu et al. (2006a) calculated daily inhalation rates for 2210 individuals aged 3 weeks to 96 years using DLW energy expenditure data mainly from the IOM (2005). The IOM database is a compilation of DLW-derived energy expenditure results and other raw data from individuals collected from numerous studies. Breathing rates were estimated for different groups of individuals including healthy normal-weight males and females with normal active lifestyles (n=1252), overweight/obese individuals with normal active lifestyles (n=679), individuals from less affluent societies (n=59), underweight adults (n=34), and individuals during various extreme physical activities (n=170). Normal weight adults age 20 yrs and above were categorized as having BMIs between 18.5 and 25 kg/m^2. Overweight/obese adults had BMIs above 25 kg/m^2. For children and teenagers aged 4 to 19 yrs, BMIs corresponding to the 85th percentile or below were considered normal. The breathing rate data were presented as 5th, 10th, 25th, 50th, 75th, 90th, 95th, and 99th percentile values as well as mean and SEM values for the derived inhalation rates for narrow age groups ranging from 1 month to 96 years. A partial

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listing of the breathing rate percentiles for normal weight individuals by age group are shown in Tables 3.14a and 3.14b.

Table 3.14a. Means and Percentiles of Daily Breathing Rates (in m^3/Day) for Free-Living Normal-Weight Males and Females Derived from DLW Measurements by Brochu et al. (2006a)

Age Category (years)	Means and Percentiles in m^3/day									
	Males[a]					Females[a]				
	N	Mean	50th	90th	95th	N	Mean	50th	90th	95th
0.22 to <0.5	32	3.38	3.38	4.30	4.57	53	3.26	3.26	4.11	4.36
0.5 to <1	40	4.22	4.22	5.23	5.51	63	3.96	3.96	4.88	5.14
1 to <2	35	5.12	5.12	6.25	6.56	66	4.78	4.78	6.01	6.36
2 to <5	25	7.60	7.60	9.25	9.71	36	7.06	7.06	8.54	8.97
5 to <7	96	8.64	8.64	10.21	10.66	102	8.22	8.22	9.90	10.38
7 to <11	38	10.59	10.59	13.14	13.87	161	9.84	9.84	12.00	12.61
11 to <23	30	17.23	17.23	21.93	23.26	87	13.28	13.28	16.61	17.56
23 to <30	34	17.48	17.48	21.08	22.11	68	13.67	13.67	16.59	17.42
30 to <40	41	16.88	16.88	20.09	21.00	59	13.68	13.68	15.94	16.58
40 to <65	33	16.24	16.24	19.67	20.64	58	12.31	12.31	14.96	15.71
65 to <96	50	12.96	12.96	16.13	17.03	45	9.80	9.80	12.58	13.37

[a] Percentiles based on a normal distribution assumption for all age groups

Table 3.14b. Means and Percentiles of Daily Breathing Rates (in m^3/kg-Day) for Free-Living Normal-Weight Males and Females Derived from DLW Measurements by Brochu et al. (2006a)

Age Category (years)	Mean and Percentiles in m^3/kg-day									
	Males[a]					Females[a]				
	N	Mean	50th	90th	95th	N	Mean	50th	90th	95th
0.22 to <0.5	32	0.509	0.509	0.627	0.661	53	0.504	0.504	0.623	0.657
0.5 to <1	40	0.479	0.479	0.570	0.595	63	0.463	0.463	0.545	0.568
1 to <2	35	0.480	0.480	0.556	0.578	66	0.451	0.451	0.549	0.577
2 to <5	25	0.444	0.444	0.497	0.512	36	0.441	0.441	0.532	0.559
5 to <7	96	0.415	0.415	0.475	0.492	102	0.395	0.395	0.457	0.474
7 to <11	38	0.372	0.372	0.451	0.474	161	0.352	0.352	0.431	0.453
11 to <23	30	0.300	0.300	0.360	0.377	87	0.269	0.269	0.331	0.349
23 to <30	34	0.247	0.247	0.297	0.311	68	0.233	0.233	0.287	0.302
30 to <40	41	0.237	0.237	0.281	0.293	59	0.235	0.235	0.279	0.292
40 to <65	33	0.230	0.230	0.284	0.299	58	0.211	0.211	0.257	0.270
65 to <96	50	0.188	0.188	0.228	0.239	45	0.172	0.172	0.220	0.233

[a] Percentiles based on a normal distribution assumption for all age groups

Comparing the largest subgroups (i.e., overweight/obese individuals vs. normal-weight individuals), Brochu et al. observed that overweight/obese individuals inhaled between 0.8 to 3.0 m^3 more air per day than normal-weight individuals, but their physiological daily breathing rates are 6 to 21% lower than that of their leaner counterparts when

expressed in m^3/kg-day. Also of interest is that the daily inhalation rates (in m^3/kg-day) of newborns and normal-weight infants aged 2.6 to less than 6 months are 2.1 to 5.1 times higher than those of normal-weight and overweight/obese adults aged 18 to 96 years with normal lifestyles.

Besides the lack of randomly selected individuals representative of a population for estimating energy expenditure, much of the DLW data used to derive the breathing rate percentiles relied heavily on adults with sedentary lifestyles (Black et al., 1996). Occupations of many participants included professionals, white collar workers or other sedentary occupations, and almost no participants were in manual labor occupations that are known to result in higher breathing rates. Although a small group of athletic individuals appear to be included in the DLW database by Brochu et al. (2006a), it was suggested by Black et al. (1996) that not enough participants involved in manual labor are represented in the DLW database. This may result in breathing rate percentiles that are lower than what might be obtained from a population-based study. Nevertheless, as noted above, the DLW method provides an index of total energy expenditure over a period of 1 to 3 weeks, which is a better determinant of long-term breathing rate than other methods described that rely on 1 to 2 days of energy intake or expenditure to estimate long-term breathing rates. Thus, the DLW method is considered to be the most accurate method for determining an average daily breathing rate of a free-living individual.

3.4.4.2 Stifelman (2007)

Using energy expenditure data based on extensive DLW measurements from two sources (FAO, 2004a; 2004b; IOM, 2005), Stifelman (2007) calculated inhalation rates with Layton's equation for long-term physical activity levels categorized as active to very active individuals. The breathing rate data are presented in Table 3.15 in one year age groupings for infants and children and in three age groupings for adults up to age 70.

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TABLE 3.15. Equivalent Breathing Rates Based on Institute of Medicine Energy Expenditure Recommendations for Active and Very Active People

Age (Years)	Inhalation rate – males active – very active (m^3/day)	Inhalation rate – females active – very active (m^3/day)
<1	3.4	3.4
1	4.9	4.9
2	5.9	5.5
3	8.4 – 9.5	7.9 – 9.3
4	8.8 – 10.1	8.3 – 9.9
5	9.4 – 10.7	8.8 – 10.5
6	9.8 – 11.3	9.3 – 11.1
7	10.4 – 11.9	9.7 – 11.6
8	10.9 – 12.6	10.2 – 12.3
9	11.5 – 13.3	10.7 – 12.8
10	12.1 – 14.0	11.1 – 13.4
11	12.9 – 14.9	11.7 – 14.1
12	13.7 – 15.9	12.3 – 14.9
13	14.8 – 17.2	12.9 – 15.6
14	16.0 – 18.5	13.2 – 16.0
15	17.0 – 19.8	13.3 – 16.2
16	17.8 – 20.7	13.4 – 16.3
17	18.2 – 21.2	13.3 – 16.2
18	18.6 – 21.5	13.2 – 16.1
19-30	17.0 – 19.7	13.4 – 15.2
31-50	16.2 – 18.9	12.8 – 14.5
51-70	15.1 – 17.8	12.0 – 13.8

Physical activity levels (PALs) were categorized into four levels of activity by the IOM, two of which were the active and very active levels. A PAL is the ratio of total energy expended (TEE) divided by the basal metabolic rate, defined as the minimum level of energy needed to support essential physiologic functions in free-living people. Stifelman (2007) also calculated the breathing rate associated with each level, as shown in Table 3.16. It is believed unlikely that the PAL "very active" category (i.e., PAL range 1.9-2.5) would be exceeded over a duration of years. PALs exceeding the IOM and FAO ranges are generally not sustainable over long periods of time, but can be quite high for limited periods of time (Westerterp, 2001). For example, highly trained athletes during periods of high-intensity training competition, including cross-country skiers and Tour de France bicycle racers, can reach a PAL of 3.5-5.5.

The IOM and FAO PALs describe a range of 1.4-2.5 in accord with ranges of sustainable PALs described by others, including people actively engaged in non-mechanized agriculture, deployed military personnel, and long-distance runners (Stifleman, 2007; Westerterp, 2001; Westerterp, 1998; Black et a., 1996; Haggerty et al., 1994). Individuals among the general population exceeding PALs of 2-2.5 for long

periods of time are expected to experience negative energy balance (i.e., weight loss) mainly because an important limit to sustainable metabolic rate is the energy intake (Westerterp 1998; Westerterp, 2001).

TABLE 3.16. IOM Physical Activity Categories, Associated Breathing Rates and Equivalent Walking Distance

PAL Category	PAL midpoint value (range)	Breathing rate midpoint value	Equivalent walking distance (km /day)[a]
Sedentary	1.25 (1.0-1.39)	14.4 m^3/day	0
Low active	1.5 (1.4-1.59)	15.7 m^3/day	3.5
Active	1.75 (1.6-1.89)	17.3 m^3/day	11.7
Very active	2.2 (1.9-2.5)	19.4 m^3/day	26.9

[a] Equivalent walking distance in addition to energy expended during normal daily life, based on a 70 kg adult walking 5-6 km per hour. Adapted from Stifelman (2007) and Brooks et al. (2004)

Based on the DLW data, Stifelman's analysis indicates that human energy expenditure occurs within a fairly narrow range of activity levels (PAL in the range of 1.4-2.5), and that for breathing rates estimated by the DLW method, a breathing rate of 19.4 m^3/day (equivalent to a PAL of 2.2) is near the maximum energy expenditure that can be sustained for long periods of time in adults. This finding supports the idea that the traditional 20 m^3/day is an upper end breathing rate (Snyder et al. (1975).

The narrow range in breathing rates was found to be consistent with the daily energy expenditure estimated from the adult breathing rate distribution in Marty et al. (2002) where the range is slightly over 2-fold between the 5th and 95th percentile in Table 3.7. A roughly 2-fold range in between the 5th and 95th percentiles is also exhibited in the MET-derived breathing rates by US EPA (2009).

3.4.4.3 Limits of Sustainable Breathing Rates Derived from PALs

As noted above, DLW studies have shown that a PAL of approximately 2 to 2.5 in the general population of adults is the limit of sustainable energy expenditure for long periods of time (Westerterp, 2001; IOM, 2005; Stifelman, 2007). The PAL of novice athletes training for endurance runs and soldiers during field training falls within this range (Westerterp, 1998; 2001). The PAL has been found to be twice the upper limit (PALs = 3.5 to 5.5) in professional endurance athletes in the most demanding sports (cross-country skiing and cycling) during training and competition. The PALs of these professional athletes are in the right tail of the breathing rate distribution of the general population (Westerterp, 2001). However, the high PALs are not expected to be sustained at these high levels when averaged over years.

Knowing the average basal energy expenditure (BEE) for adults and the upper range of daily energy expenditure, the upper limit of long-term daily breathing rates for the general population can be estimated from Layton's equation (eq. 3.1). Marty et al. (2002) observed that the 95th percentile breathing rate should be found within this PAL range of 2 to 2.5. Thus, it might be reasonable to compare the 95th percentile adult

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breathing rate calculated by other methods to the breathing rates derived from an upper limit PAL range of 2 to 2.5.

Table 3.17 show the expected breathing rates of adults in a PAL range of 2.0 to 2.5. The mean BEE in kcal/day for the adult age groups is obtained from Brooks et al. (2004). Mean weights for the adult age groups were also obtained from this reference in order to convert breathing rates in L/day to L/kg-day. The results from the DLW-derived energy expenditure data suggest that for normal weight adults (i.e., adults with BMIs within the healthy range of 18.5 to 25), the upper limit of breathing rates for males and females combined would be 16,629 to 20,787 L/day, or 256 to 320 L/kg-day.

Table 3.17. Description of the Normative Adult DLW Data from Brooks et al. (2004) for Persons with a Healthy BMI, and the Resulting Calculations of Breathing Rate Within the Sustainable PAL Range of 2.0 to 2.5

	Age years	n	Mean BEE kcal/d	TEE limits[a] kcal/d	Breathing rate L/d	Mean weight kg	Breathing rate L/kg-d
Males	19-30	48	1769	3538 - 4423	20,060 - 25,078	71.0	283 - 353
	31-50	59	1675	3350 - 4188	18,995 - 23,746	71.4	266 - 333
	51-70	24	1524	3048 - 3810	17,282 - 21,603	70.0	247 - 309
	19-70[b]	-	-	-	18,582 - 23,229	-	263 - 328
Females	19-30	82	1361	2722 - 3403	15,434 - 19,295	59.3	260 - 325
	31-50	61	1322	2644 - 3305	14,991 - 18,739	58.6	256 - 320
	51-70	71	1226	2452 - 3065	13,903 - 17,379	59.1	235 - 294
	19-70[b]	-	-	-	14,675 - 18,344	-	249 - 311
Males/ females[c]	19-70	-	-	-	16,629 - 20,787	-	256 - 320

[a] Sustainable PAL range (2.0 to 2.5) multiplied by mean BEE equals the daily total energy expenditure (TEE) that can be sustained over long periods of time.
[b] 19-70 yr breathing rates calculated as a weighted average from the three smaller age groupings
[c] Average breathing rates of males and females combined, assuming each gender represents 50% of the population.

Although the PAL limits were estimated for adults, it might also be useful to estimate high-end sustainable breathing rates for adolescents using the same assumption that a PAL of 2 to 2.5 represents the limit of sustainable energy expenditure over a long-term period. Some of the highest daily breathing rates in L/day were calculated for adolescents from the CSFII caloric intake data (Arcus-Arth and Blaisdell, 2007).

For deriving adolescent breathing rates from the mean BEE in Brooks et al. (2004) for 14-18 year olds, an upper limit of sustainable energy expenditure would be in the range of 3458-4323 kcal/d for males, and 2722-3403 kcal/d for females. Using Layton's equation to derive the breathing rates from these daily energy expenditures, sustainable upper limit breathing rates of 22,221-27,780 L/day for adolescent males, and 18,006-22,511 L/day for adolescent females were calculated. After normalizing for weight using the mean weights for the 14-18 year age groups in Brooks et al. (2004),

upper range daily breathing rates of 378-472 L/kg-day for males and 332-513 L/kg-day for females were calculated.

3.4.5 Compilations of Breathing Rate Data

In the US EPA (2011) Exposure Factors Handbook, ranges of measured breathing rate values were compiled for infants, children and adults by age and sex. Table 3.18 presents the recommended breathing rate values for males and females combined for specific age groups up to age ≥81 yrs based on the average of the inhalation rate data from four recent key studies: Brochu et al. (2006a); U.S. EPA, (2009); Arcus-Arth and Blaisdell, (2007); and Stifelman (2007). The Table represents the unweighted means and 95th percentiles for each age group from the key studies. U.S. EPA noted that there is a high degree of uncertainty associated with the upper percentiles, including the 95th percentile shown in Table 3.18, thus they should be used with caution. The upper percentiles represent unusually high inhalation rates for long-term exposures, but were included in the handbook to provide exposure assessors a sense of the possible range of inhalation rates for children.

Table 3.18. US EPA (2011) Recommended Long-Term Exposure (More than 30 Days) Breathing Rate Values for Infants and Children (Males and Females Combined) Averaged From Four Key Studies

Age Group	Mean m^3/day	Sources Used for Means	95th Percentile m^3/day	Sources Used for 95th-ile
Birth to <1 month	3.6	a	7.1	a
1 to <3 months	3.5	a,b	5.8	a,b
3 to <6 months	4.1	a,b	6.1	a,b
6 to <12 months	5.4	a,b	8.0	a,b
Birth to <1 year	5.4	a,b,c,d	9.2	a,b,c
1 to <2 years	8.0	a,b,c,d,	12.8	a,b,c
2 to <3 years	8.9	a,b,c,d	13.7	a,b,c
3 to <6 years	10.1	a,b,c,d	13.8	a,b,c
6 to <11 years	12.0	a,b,c,d	16.6	a,b,c
11 to <16 years	15.2	a,b,c,d	21.9	a,b,c
16 to <21 years	16.3	a,b,c,d	24.6	a,b,c
21 to <31 years	15.7	b,c,d	21.3	b,c
31 to <41 years	16.0	b,c,d	21.4	b,c
41 to <51 years	16.0	b,c,d	21.2	b,c
51 to <61 years	15.7	b,c,d	21.3	b,c
61 to <71 years	15.7	b,c,d	18.1	b,c
71 to <81 years	14.2	b,c	16.6	b,c
≥91 years	12.2	b,c	15.7	b,c

a Arcus-Arth and Blaisdell, 2007; b Brochu et al. 2006a;
c U.S. EPA, (2009) d Stifelman 2007

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3.5 OEHHA-Derived Breathing Rate Distributions for the Required Age Groupings Using Existing Data.

The summarized published reports provide breathing rate distributions by month/year of age or in specific age groups, but seldom in age groups applicable to OEHHA's age groupings for cancer risk assessment. However, individual data were obtainable from the CSFII food intake study and the DLW database in the IOM (2005) report, from which breathing rate distributions could be derived in the specific age groups of third trimester, 0<2, 2<9, 2<16, 16<30, and 16-70 years. In addition, the U.S. EPA's breathing rate distributions based on the MET approach, shown in Tables 3.13a and 3.13b, can be merged to obtain the necessary age group breathing rates.

3.5.1 OEHHA-derived breathing rates based on CSFII energy intake data

In Tables 3.19a-e, non-normalized (L/day) and normalized (L/kg-day) breathing rates for the specific OEHHA age groups were derived for both children and adults from the CSFII dataset using the Jacknife Replication statistical method (Arcus-Arth and Blaisdell, 2007). Breathing rates for pregnant women, for determination of third trimester breathing rates, are presented in Section 3.5.4.

In addition, each age group was also fit to a lognormal distribution using Crystal Ball® (Oracle Corp., Redwood Shores, CA, 2009). Crystal Ball® was also used to determine the best parametric model fit for the distribution of breathing rates for each age group. The Anderson-Darling test was chosen over other goodness-of-fit tests available in Crystal Ball® because this test specifically gives greater weight to the tails than to the center of the distribution. OEHHA is interested in the tails since the right tail represents the high-end (e.g., 95th percentile) breathing rates.

Tables 3.19a-e. Breathing Rate Distributions by Age Group (Males and Females Combined) Derived from CSFII Food Intake Data Using Jacknife Methodology and Parameter Estimates of Log-Normally and Best Fit Distributions

Table 3.19a. Breathing Rate Distributions for the 0<2 Year Age Group

	Jacknife Approach		Lognormal Parametric Model		Best Fit Parametric Model	
					Max Extreme	Lognormal
N (sample)	1954	1954	-	-	-	-
Skewness	na[a]	na	0.74	0.77	1.47	0.77
Kurtosis	na	na	3.96	4.34	7.81	4.34
%-ile or mean	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**
Sample Min	43	79	-	-	-	-
Mean (SE)[b]	752 (9)	7502 (91)	752 (1)	7568 (13)	752 (1)	7568 (13)
50%-ile (SE)	706 (7)	7193 (91)	720	7282	706	7282
75%-ile (SE)	870 (11)	9128 (91)	909	9201	871	9201
90%-ile (SE)	1094 (19)	11,502 (120)	1107	11,523	1094	11,523
95%-ile (SE)	1241 (24)	12,860 (170)	1241	12,895	1241	12,895
Sample Max	2584	24,411	-	-	-	-

[a] Not applicable [b] SE = Standard error

Table 3.19b. Breathing Rate Distributions For the 2<9 Year Age Group

	Jacknife Approach		Lognormal Parametric Model		Best Fit Parametric Model	
					Log-normal	Lognormal
N (sample)	6144	6144	-	-	-	-
Skewness	na[a]	na	0.95	0.86	0.95	0.86
Kurtosis	na	na	4.63	4.96	4.63	4.96
%-ile or mean	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**
Sample Min	144	2661	-	-	-	-
Mean (SE)[b]	595 (4)	11,684 (82)	595 (1)	11,680 (16)	595 (1)	11,680 (16)
50%-ile (SE)	567 (5)	11,303 (70)	567	11,303	567	11,303
75%-ile (SE)	702 (5)	13,611 (110)	702	13,606	702	13,606
90%-ile (SE)	857 (7)	16,010 (170)	857	16,012	857	16,012
95%-ile (SE)	975 (9)	17,760 (229)	975	17,758	975	17,758
Sample Max	1713	31,739	-	-	-	-

[a] Not applicable [b] SE = Standard error

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Table 3.19c. Breathing Rate Distributions for the 2<16 Year Age Group

	Jacknife Approach		Lognormal Parametric Model		Best Fit Parametric Model	
					Gamma	Max Extreme
N (sample)	7624	7624	-	-	-	-
Skewness	na[a]	na	0.74	0.75	0.91	1.46
Kurtosis	na	na	3.97	4.02	4.38	7.26
%-ile or mean	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**
Sample Min	57	2661	-	-	-	-
Mean (SE)[b]	481 (5)	14,090 (135)	481 (1)	14,094 (24)	481 (1)	14,095 (24)
50%-ile (SE)	450 (5)	13,128 (110)	456	13,465	451	13,131
75%-ile (SE)	603 (4)	16,644 (189)	606	17,239	603	16,655
90%-ile (SE)	764 (6)	20,993 (361)	763	21,214	763	20,993
95%-ile (SE)	869 (6)	23,879 (498)	868	23,870	868	23,886
Sample Max	1713	53,295	-	-	-	-

[a] Not applicable [b] SE = Standard error

Table 3.19d. Breathing Rate Distributions for the 16<30 Year Age Group

	Jacknife Approach		Lognormal Parametric Model		Best Fit Parametric Model	
					Max Extreme	Lognormal
N (sample)	2155	2155	-	-	-	-
Skewness	na[a]	na	0.69	1.90	1.69	1.90
Kurtosis	na	na	3.75	11.15	8.94	11.15
%-ile or mean	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**
Sample Min	23	1029	-	-	-	-
Mean (SE)[b]	197 (3)	13,759 (204)	200 (<1)	13,899 (31)	200 (<1)	13,899 (31)
50%-ile (SE)	180 (3)	12,473 (125)	190	12,494	182	12,494
75%-ile (SE)	238 (4)	16,975 (245)	259	17,192	242	17,192
90%-ile (SE)	320 (4)	21,749 (305)	331	22,136	323	22,136
95%-ile (SE)	373 (11)	26,014 (634)	378	26,481	377	26,481
Sample Max	976	75,392	-	-	-	-

[a] Not applicable [b] SE = Standard error

Table 3.19e. Breathing Rate Distributions for the 16-70 Year Age Group

	Jacknife Approach		Lognormal Parametric Model		Best Fit Parametric Model	
					Max Extreme	Lognormal
N (sample)	8512	8512	-	-	-	-
Skewness	na[a]	na	0.67	2.05	1.87	2.05
Kurtosis	na	na	3.74	12.35	10.67	12.35
%-ile or mean	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**
Sample Min	13	740	-	-	-	-
Mean (SE)[b]	165 (2)	12,078 (134)	165 (<1)	12,074 (26)	165 (<1)	12,074 (26)
50%-ile (SE)	152 (1)	10,951 (86)	157	10,951	152	10,951
75%-ile (SE)	200 (1)	14,687 (141)	212	14,685	200	14,685
90%-ile (SE)	257 (3)	18,838 (173)	269	18,834	257	18,834
95%-ile (SE)	307 (4)	21,812 (371)	307	21,831	307	21,831
Sample Max	975	75,392	-	-		

[a] Not applicable [b] SE = Standard error

3.5.2 OEHHA-derived breathing rates based on the IOM DLW Database

The Institute of Medicine (IOM) 2005 dietary reference report includes an extensive database that is a compilation of DLW-derived energy expenditure results and other raw data for individuals collected from numerous studies. An advantage of this dataset over the U.S. EPA MET approach and the TAV approaches is that individual data on energy expenditure are matched with the weight and age of the individuals. The disadvantage is that the data are not necessarily representative of a random sample of a population.

When breathing rates were calculated from the energy expenditure data, it became apparent that there were some extreme individual breathing rates that did not appear physically possible. Using the results from the PAL limits (Section 3.4.4.3), breathing rates with a PAL greater than 2.5 were removed. Additionally, some breathing rates were below the expected BMR for an individual. Based on evidence that energy expenditure during sleep is 5 to 10% lower than the BMR, derived breathing rates that were 10% or more below the expected BMR were also removed (Brooks et al., 2004). However, relatively few individuals were removed due to an extreme breathing rate; <1 to 6% of the values were removed from any one age group.

Rather than assume a normal distribution for the age groupings as Brochu et al. (2006a) had done, OEHHA arranged the data to be more representative of a population by weighting the energy expenditure data by age and gender. The modeled populations were weighted towards an equal number of persons per year of age and the assumption was used that males and females in a population are at a ratio of 50:50. In addition, the IOM database separated individuals by weight, or more specifically, by body mass index

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(BMI). Children 3 to 18 years of age are considered at risk of overweight when their BMI is greater than the 85th percentile, and overweight when their BMI is greater than the 95th percentile (Kuczmarski et al., 2000). Thus, the IOM (2005) placed overweight/obese children in a separate dataset. For the modeled populations, an 85:15 weighting for normal:overweight children in the 2<9 and 2<16 age groups was used. Adults (>19 years of age) were placed in the overweight/obese dataset if they had BMIs of 25 kg/m^2 and higher by the IOM. The results from USDA's 1994-96 Diet and Health Knowledge Survey (Tippett and Clevelend, 2001) found that 54.6% of the U.S. population have a BMI of 25 kg/m^2 or greater (n=5530). Thus, for the adult age groups (16<30 and 16-70 yrs), 45:55 weighting for normal:overweight adults was used to model the populations.

For infants, the source of the raw data in the IOM (2005) database was from Butte et al. (2000), a DLW study conducted at the Children's Nutrition Research Center in Houston, TX. Butte et al. (2000) monitored energy expenditure in 76 healthy infants by the DLW method up to six times during the study, at 3, 6, 9, 12, 18, and 24 months of age, generating a total of 351 measurements that fell within the OEHHA-specified 0<2 year age group. Thus, many of the infants were tested more than once during the study period. Following each administration of DLW by mouth, urine samples were collected over 10 days and analyzed for the hydrogen and oxygen isotopes to calculate energy expenditure.

The percentage of breast-fed infants at ages 3, 6, 9, 12, 18, and 24 months were 100%, 80%, 58%, 38%, 15%, and 5%, respectively in the Butte et al. (2000) study. The racial distribution by maternal lineage was 55 white, 7 African American, 11 Hispanic, and 3 Asian infants. The NCHS growth reference (Hamill et al., 1979) was used to evaluate the adequacy of growth in these infants. The growth performance of these infants was comparable with that of other breast-fed and formula-fed infant populations in whom socioeconomic and environmental constraints would not be expected to limit growth. Relative to the NCHS reference and compared with other breast-fed and formula-fed study populations, the growth of the children was considered satisfactory by the researchers.

Although the study did not choose subjects representative of any particular population, the range of activities that individuals of this age engage in is not as variable as the range of activities engaged in by older children and adults. In addition, even though many of the infants were tested more than once during the study period, repeated measures on the same individuals can reduce the amount of intraindividual variability in the distribution of measurements because a better estimate of typical energy expenditure is captured. Considering the limitations, the study results were judged by OEHHA to be similar enough to a randomly sampled population to calculate distributional statistics for breathing rate.

An additional observation from Butte et al. (2000) was that total energy expenditure measurements differed by age and by feeding group, but not by sex, when adjusted for weight. As expected, PAL increased significantly with age from 1.2 at 3 months to 1.4 at 24 months.

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Breathing rates determined by the DLW method for women in their third trimester of pregnancy are presented separately in Section 3.5.4.

To obtain the daily breathing rate distributions for all age groups shown in Table 3.20a-e, OEHHA fit the data to a lognormal distribution using Crystal Ball® and sampled 250,000 times using Latin-Hypercube. The lognormal distribution is commonly used in stochastic risk assessment and has been found to be a reasonable parametric model for a variety of exposure parameters, including breathing rate. Latin-Hypercube analysis in Crystal Ball® was also used to determine the best parametric model fit for the distribution of breathing rates. The Anderson-Darling statistic was used for the goodness-of-fit test because it gives greater weight to the tails than to the center of the distribution.

Tables 3.20a-e. Breathing Rate Distributions by Age Group (Males and Females Combined) Derived from IOM (2005) DLW Database Using Parameter Estimates of Lognormal and Best Fit Distributions

Table 3.20a. 0<2 Year Age Group Breathing Rate Distribution

	Moments and Percentiles, Empirical Data		Moments and Percentiles, Lognormal Parametric Model		Moments and Percentiles, Best Fit Parametric Model	
N	281	281				
Skewness	-0.044	0.28	-0.001	0.44	-0.044	0.28
Kurtosis	2.10	2.59	3.00	3.35	2.10	2.59
	L/kg-day	**L/day**	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**
					Beta	Beta
Sample Min	357	2228	-	-	-	-
Mean (SE)	567	5031	567	5031	567	5031
50%-ile	562	4967	567	4925	568	4943
80%-ile	657	6323	644	6232	655	6325
90%-ile	689	6889	685	6981	691	7042
95%-ile	713	7595	718	7638	714	7607
Sample Max	752	9210	-	-	-	-

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Table 3.20b. 2<9 Year Age Group Breathing Rate Distribution

	Moments and Percentiles, Empirical Data		Moments and Percentiles, Lognormal Parametric Model		Moments and Percentiles, Best Fit Parametric Model	
N	810	810				
Skewness	0.0759	0.4676	0.0796	0.4763	0.0796	0.0290
Kurtosis	2.93	3.62	3.00	3.40	3.00	3.50
	L/kg-day	**L/day**	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**
					Log-normal	Student's T
Sample Min	240	5085	-	-	-	-
Mean (SE)	482	9708	482	9708	482	9711
50%-ile	479	9637	481	9521	481	9708
80%-ile	551	11,478	555	11,650	555	11,641
90%-ile	597	12,629	595	12,880	595	12,704
95%-ile	631	13,626	628	13,962	628	13,632
Sample Max	703	21,152	-	-	-	-

Table 3.20c. 2<16 Year Age Group Breathing Rate Distribution

	Moments and Percentiles, Empirical Data		Moments and Percentiles, Lognormal Parametric Model		Moments and Percentiles, Best Fit Parametric Model	
N	1227	1237				
Skewness	0.2729	0.8705	0.4613	1.12	0.2729	1.14
Kurtosis	2.45	3.70	3.38	5.32	2.45	5.43
	L/kg-day	**L/day**	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**
					Beta	Max Ext.
Sample Min	168	5328	-	-	-	-
Mean (SE)	423	12,695	423	12,700	423	12,695
50%-ile	411	11,829	414	12,000	416	11,988
80%-ile	529	16,184	517	15,833	527	15,788
90%-ile	580	18,944	576	18,328	583	18,303
95%-ile	623	20,630	628	20,694	626	20,716
Sample Max	737	27,803	-	-	-	-

Table 3.20d. 16<30 Year Age Group Breathing Rate Distribution

	Moments and Percentiles, Empirical Data		Moments and Percentiles, Lognormal Parametric Model		Moments and Percentiles, Best Fit Parametric Model	
N	245	245				
Skewness	0.3471	0.4786	0.4008	0.6962	0.4008	0.6962
Kurtosis	3.03	3.11	3.28	3.88	3.28	3.88
	L/kg-day	**L/day**	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**
					Log-normal	Log-normal
Sample Min	135	7246	-	-	-	-
Mean (SE)	222	16,458	222	16,464	222	16,464
50%-ile	220	16,148	219	16,053	219	16,053
80%-ile	256	19,468	259	19,395	259	19,395
90%-ile	282	21,954	282	21,410	282	21,410
95%-ile	308	23,295	302	23,231	302	23,231
Sample Max	387	26,670	-	-	-	-

Table 3.20e. 16-70 Year Age Group Breathing Rate Distribution

	Moments and Percentiles, Empirical Data		Moments and Percentiles, Lognormal Parametric Model		Moments and Percentiles, Best Fit Parametric Model	
N	842	846				
Skewness	0.4264	0.6323	0.4506	0.7346	0.4506	0.7346
Kurtosis	3.18	3.32	3.36	3.98	3.36	3.98
	L/kg-day	**L/day**	**L/kg-day**	**L/day**	**L/kg-day**	**L/day**
					Log-normal	Log-normal
Sample Min	95	7235	-	-	-	-
Mean (SE)	206	15,713	206	15,715	206	15,715
50%-ile	204	15,313	203	15,282	203	15,282
80%-ile	241	18,773	243	18,664	243	18,664
90%-ile	268	20,612	266	20,687	266	20,687
95%-ile	286	22,889	286	22,541	286	22,541
Sample Max	387	29,136	-	-	-	-

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3.5.3 OEHHA Age Group Breathing Rate Distributions Derived From U.S. EPA (2009) MET Approach

In Tables 3.21a-e, non-normalized (L/day) and normalized (L/kg-day) breathing rates for the specific OEHHA age groups were derived for both children and adults from the data included in the U.S. EPA (2009) report and presented above. Values for males and females were combined by taking weighted averages for each age range provided, assuming that the numbers of males and females in the population are equal. Ages were combined by the same means to create the age ranges of toxicological interest to the "Hot Spots" program.

The breathing rates used in preparation of the U.S. EPA report were derived by selecting an activity pattern set from a compilation of daily activity pattern sets (CHAD) and assigning them to a person in NHANES of the same sex and age group, although the age groups are fairly narrow for the very young (i.e., 3-month or 1-year intervals), the older age groups consist of broad age categories (i.e., 3 to 5 year intervals). These broad age groups include periods, for example 3 to <6 years, when activity can vary greatly by year of age. In addition, NHANES calculates a "sampling weight" for each participant, which represents the number of individuals in the population with the same set of these characteristics. When an individual in CHAD is matched to an individual in NHANES only on sex and age group, the set of characteristics that belonged to the CHAD individual are ignored, which could result in significantly different weighting. Thus the derived breathing rates cannot be considered representative of the population.

For these reasons and other limitations of the EPA data, as stated in Section 3.3.3.3, OEHHA chose to fit a selected set of parametric distributions to the percentile data given by U.S. EPA, rather than attempting to use the raw data to determine the best fit parametric model. A gamma distribution was fit to each age group using Crystal Ball®, which is usually one of the better fitting distributions for the right-skewed distributions typical of intake variability. The gamma distribution is a three parameter distribution with fewer shape constraints than two parameter distributions such as a lognormal distribution.

Table 3.21a-e. Normalized and Non-Normalized Breathing Rate Distributions by Age Group (Males and Females Combined) Derived From U.S. EPA (2009) Breathing Rates Using a Gamma Parameter Estimate Distribution

Table 3.21a. 0<2 Year Age Group Breathing Rate Distribution

	Moments and Percentiles, Gamma Parametric Model	
N	1601	1601
	L/kg-day	**L/day**
Mean	1125	10,711
50%-ile	1104	10,489
75%-ile	1199	12,301
90%-ile	1302	14,104
95%-ile	1372	15,271

Table 3.21b. 2<9 Year Age Group Breathing Rate Distribution[a]

	Moments and Percentiles, Gamma Parametric Model	
N	4396	4396
	L/kg-day	**L/day**
Mean	597	12,758
50%-ile	591	12,518
75%-ile	662	13,911
90%-ile	732	15,375
95%-ile	776	16,176

[a] Breathing rate data for this age range were actually available for 2<11 years of age

Table 3.21c. 2<16 Year Age Group Breathing Rate Distribution

	Moments and Percentiles, Gamma Parametric Model	
N	7657	7657
	L/kg-day	**L/day**
	449	13,365
50%-ile	440	13,106
75%-ile	496	14,694
90%-ile	555	16,426
95%-ile	595	17,609

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Table 3.21d. 16<30 Year Age Group Breathing Rate Distribution[a]

	Moments and Percentiles, Gamma Parametric Model	
N	6111	6111
	L/kg-day	**L/day**
Mean	221	16,005
50%-ile	215	15,469
75%-ile	244	17,984
90%-ile	275	20,699
95%-ile	296	22,535

[a] Breathing rate data for this age range were actually available for 16<31 years of age

Table 3.21e. 16-70[a] Year Age Group Breathing Rate Distribution

	Moments and Percentiles, Gamma Parametric Model	
N	16,651	16,651
	L/kg-day	**L/day**
Mean	219	16,937
50%-ile	214	16,515
75%-ile	245	18,924
90%-ile	278	21,443
95%-ile	299	23,128

[a] Breathing rate data for this age range were given as 16<71 years of age

A limitation in calculating these breathing rates is that equal weighting by year of age was assumed when merging the U.S. EPA breathing rates into larger age groups used by OEHHA. However, this may not be a significant factor for the smaller age groups (i.e., 3rd trimester, 0<2, 2<9, 2<16, 16<30 yr old age groups), but could affect the breathing rate estimate for the 16-70 year olds. This is because a random sample of the population would find proportionally fewer adults in the 61 to 70 year age range, for example, compared to 21 to 30 year age range.

Another limitation is that merging the U.S. EPA age groups into the OEHHA age groupings does not yield the precise age range for 2<9 and 16 to <30 year olds. The actual age range in the US EPA data used to get the 16 to <30 year olds is 16 to <31, which we do not consider a significant deviation. However, the actual age range in the US EPA data used to get the 2 to <9 year olds is 2 to <11 years. The addition of 9 and 10 year olds would slightly reduce the normalized breathing rate in L/kg-day because younger children (i.e., 2<9 year olds) have higher normalized breathing rates than older children (i.e., 9-10 year olds). Alternatively, addition of 9 and 10 year olds to the 2<9 year age group would slightly increase the absolute breathing rate in L/day due to

higher volumes of air breathed per day by 9 and 10 year olds compared to younger children.

3.5.4 OEHHA-Derived Third Trimester Breathing Rates

For third trimester exposure, OEHHA calculated breathing rates using the assumption that the dose to the fetus during the third trimester was the same as that to the mother. Both the CSFII and DLW data sets included data from pregnant women that could be used to calculate breathing rates (Table 3.22). The DLW data included a code for trimester of pregnancy, while the CSFII data did not. Thus, breathing rates by the CSFII method was estimated using data for women in all stages of pregnancy with no means for separation by stage of pregnancy. OEHHA believes this would not underestimate the third trimester breathing rates, since the CSFII breathing rate data tend to overestimate the breathing rate in the upper (e.g., 95th percentile) and lower percentiles for the reasons cited in Section 3.4.3.2. Since breathing rate increases over the course of pregnancy, we felt that we could successfully combine these data with the DLW data and produce a reasonable set of point estimates for the third trimester.

In order to create a set of breathing rate data suitable for use in a stochastic risk assessment for third trimester pregnant women, we selected 1,000 observations from each set of data, normalized and non-normalized, using a Monte Carlo simulation in Crystal Ball®. Because the data sets from the two sources were similar in size, a relatively small set of simulated data was sufficient. We combined these data to create two sets of pooled data (see Section 3.2 above). We then fit a parametric distribution to each of the pooled samples, using Crystal Ball® and the Anderson-Darling goodness-of-fit test.

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Table 3.22. Normalized and Non-Normalized Breathing Rate Distributions for Women in Their Third Trimester of Pregnancy: OEHHA-Derived Values from Doubly-Labeled Water (DLW) and Continuing Survey of Food Intake of Individuals (CSFII) Databases

	DLW L/kg BW-day	CSFII L/kg BW-day	DLW L/day	CSFII L/day
Distribution	Lognormal	Gamma	Lognormal	Gamma
Minimum	150	78	10,316	4,025
Maximum	348	491	23,932	29,041
Mean	220	232	15,610	14,830
Median	210	216	15,196	14,311
Std Dev	46	92	3,118	5,326
Skewness	1.19	0.5575	0.7744	0.4393
Kurtosis	4.04	2.57	3.57	3.02
Percentiles				
1%	150	84	10,316	4,025
5%	161	104	10,809	7,714
10%	174	127	11,846	8,201
25%	192	155	13,750	11,010
50%	210	216	15,196	14,311
75%	241	302	17,343	18,153
80%	246	323	17,832	19,114
90%	280	363	18,552	21,799
95%	322	392	22,763	24,349
99%	348	490	23,932	28,848

3.5.5 Summary of Long-Term Daily Breathing Rate Distributions

Table 3.23 presents a summary of the long-term daily mean and high end (i.e., 95th percentile) breathing rates derived by OEHHA from different sets of energy expenditure data. The breathing rate distributions for women in their third trimester of pregnancy are presented separately in Table 3.22 above. The MET- (non-normalized only), CSFII- and DLW-derived breathing rates in Table 3.22 are based on the best fit parametric models for each age group, although little variation in the breathing rate was observed between models within each breathing rate method. Also included are data from TAV studies that estimated breathing rates in age groupings reasonably similar to that used by OEHHA.

As noted in Table 3.23, some of the age groupings for the MET-derived breathing rates, and all age groups in the TAV-derived breathing rates do not precisely reflect the age ranges used in the “Hot Spots” program. This was primarily due to methodological differences in data collection which did not allow individual breathing rates matched with the age of the individual. However, the differences in the age ranges were small

enough in many cases to allow a rough comparison among the various breathing rate estimation methods, so they were included in the table.

TABLE 3.23. Summary of Breathing Rate by Study and Age Group

	0<2 yrs L/kg-day		2<9 yrs L/kg-day		2<16 yrs L/kg-day		16<30 yrs L/kg-day		16-70 yrs L/kg-day	
	mean	95th	mean	95th	mean	95th	mean	95th	mean	95th
MET[a]	1125	1372	597[b]	776[b]	449	595	221[c]	296[c]	219	299
CSFII[d]	752	1241	595	975	481	868	200	377	165	307
DLW[e]	567	713	482	628	423	626	222	302	206	286
TAV[f]										
Marty et al.	-	-	-	-	452[g]	580.5[g]	-	-	232[h]	381[h]
Allan et al.	-	-	-	-	-	-	-	-	201[e]	280[e]
	0<2 yrs L/day		2<9 yrs L/day		2<16 yrs L/day		16<30 yrs L/day		16-70 yrs L/day	
	mean	95th	mean	95th	mean	95th	mean	95th	mean	95th
MET[a]	10,711	15,271	12,758	16,176	13,365	17,609	16,005	22,535	16,937	23,128
CSFII[d]	7568	12,895	11,680	17,758	14,095	23,886	13,899	26,481	12,074	21,831
DLW[e]	5031	7595	9711	13,632	12,695	20,716	16,464	23,231	15,715	22,541
TAV[f]										
Marty et al.	-	-	-	-	8,100[g]	10,500[g]	-	-	14,600[h]	24,000[h]
Allan et al.	-	-	-	-	-	-	-	-	16,160[i]	22,480[i]

[a] U.S. EPA metabolic equivalent (MET) approach breathing rate point estimates shown were derived using the best fit parametric model from Tables 3.20a-e.
[b] All MET-derived breathing rates for the 2<9 yr age group actually represent 2<11 yr olds.
[c] All MET-derived breathing rates for the 16<30 yr age group actually represent 16<31 yr olds.
[d] CSFII food intake-derived breathing rate point estimates shown were derived using the best fit parametric model as presented in Tables 3.18a-e.
[e] Doubly-labeled water-derived (DLW) breathing rate point estimates shown were derived using the best fit parametric model as shown in Tables 3.19a-e.
[f] Time-activity-ventilation (TAV) breathing rate point estimates are from Table 3.3 (Marty et al. 2002) and Table 3.5 (Allan et al., 2008).
[g] The breathing rate point estimates from Table 3.3 actually represent an age range of about 3 to <12 yrs old. The non-normalized breathing rate point estimates in L/day is the equivalent for an 18 kg child.
[h] The breathing rate point estimates from Table 3.4 actually represent an age range of 12 to 70 years old. Non-normalized breathing rate point estimates in L/day are the equivalent for a 63 kg adult.
[i] Breathing rate point estimates were derived from Table 3.5 and represent an age range of 12 to 60+ years. The point estimates were calculated assuming equal weighting for each age group (12-19 yrs, 20-59 yrs, 60+ yrs) and combined. Breathing rates in Table 3.5 were available only in L/day, so the non-normalized point estimates were both divided by the mean body weight for the 16-70 age group (80.3 kg) to generate breathing rates in L/kg-day.

The DLW energy expenditure data likely result in daily breathing rates that are slightly lower in some cases than what would be expected in a random population sample, particularly for adults (Black et al., 1996). On the other hand, U.S. EPA (2008) observed that the upper percentile breathing rates for the MET and CSFII approaches are unusually high for long-term daily exposures. Based on the limits of sustainable daily breathing rates for adolescents and adults discussed in Section 3.4.4.3, the 95th percentile breathing rates in Table 3.22 appear to be above sustainable limits for some age groups. For example, the CSFII-generated upper percentile breathing rates are

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highest in the age groups containing older adolescents. The 16<30 year age group upper percentile breathing rate from the CSFII study is 377 L/kg-d. This breathing rate is above the sustainable breathing rate (based on PAL) of 283-353 L/kg-d for males 19-30 years of age shown in Table 3.16 (but is not above the sustainable breathing rates for the subgroup of males and females 14-18 yrs of age with a breathing rate of 332-513 L/kg-d).

A limitation of the estimated PALs for daily breathing rates determined in Tables 3.15 and 3.17 is that the participants used in the study may not reflect a random sample of the population. Nevertheless, the observed PAL of novice athletes training for endurance runs and soldiers during field training falls within this range of 2.0-2.5 (Westerterp, 1998; 2001). Thus, the breathing rates based on physical activity limits should be accurate for the general population, with the exception of professional endurance athletes in the most demanding sports (cross-country skiing and cycling) during training and competition.

With the advantages and disadvantages of the breathing rate datasets described in Section 3.2, OEHHA recommends using a daily breathing rate point estimates based on a mean of the DLW and CSFII approaches. The main benefit is the use of individual data from these two datasets, including individual body weights, which can be combined into one distribution. In order to create a set of breathing rate data suitable for use in a stochastic risk assessment of long-term daily average exposures, OEHHA combined data for each age range within the two sources of breathing rate data, CSFII and DLW. We selected an equal number of observations from each source for the five age ranges, normalized and non-normalized, using a Monte Carlo simulation in Crystal Ball® to create pooled data for each group. We then fit a parametric distribution to each of the pooled samples, using Crystal Ball® and the Anderson-Darling goodness-of-fit test.

For infants 0<2 yrs of age, OEHHA used the DLW data by Butte et al. (2000) for combining with CSFII study 0<2 yr data. This longitudinal study followed a group of about 40 infants collecting urine every 3 months after DLW administration from age 3 months to two years of age. The sample size was not considered large enough to use this data exclusively for determining the 0<2 yr breathing rates, so was combined with CSFII data of infants in the same age range.

3.6 8-Hour Breathing Rates

Specialized exposure scenarios for estimating cancer risk to offsite workers, neighborhood residents, and school children may involve evaluating exposure in the 8-12 hour range. Therefore, 8-hour breathing rates were estimated for exposed individuals engaged in activities that bracket the range of breathing rates including minimal inhalation exposure such as reading a book and desk work, and high breathing rates such as farm work or yard work, that can be reasonably sustained for an 8-hour period.

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As part of the development of average daily breathing rates, U.S. EPA (2009) used existing data on minute ventilation rates (in ml/min or ml/kg-min) for a range of activities and assigned MET values depending on the intensity level of activity:

- Sedentary/Passive Activities: Activities with MET values no higher than 1.5
- Light Intensity Activities: Activities with MET values exceeding 1.5 to ≤3.0
- Moderate Intensity Activities: Activities with MET values exceeding 3.0 to ≤6.0
- High Intensity Activities: Activities with MET values exceeding 6.0

An additional ventilation rate distribution was developed for sleeping/napping only, although the sedentary/passive activity category (MET values ≤1.5) also includes sleeping and napping. Table 3.23 shows selected MET values for various workplace activities and activities in the home or neighborhood that were used to calculate daily breathing rates by U.S. EPA (2009).

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Table 3.23. METS Distributions for Workplace and Home Activities

Activity Description	Mean	Median	SD	Min	Max
Workplace Activities					
Administrative office work	1.7	1.7	0.3	1.4	2.7
Sales work	2.9	2.7	1.0	1.2	5.6
Professional	2.9	2.7	1.0	1.2	5.6
Precision/production/craft/repair	3.3	3.3	0.4	2.5	4.5
Technicians	3.3	3.3	0.4	2.5	4.5
Private household work	3.6	3.5	0.8	2.5	6.0
Service	5.2	5.3	1.4	1.6	8.4
Machinists	5.3	5.3	0.7	4.0	6.5
Farming activities	7.5	7.0	3.0	3.6	17.0
Work breaks	1.8	1.8	0.4	1.0	2.5
Household/Neighborhood Activities					
Sleep or nap	0.9	0.9	0.1	0.8	1.1
Watch TV	1.0	1.0	-	1.0	1.0
General reading	1.3	1.3	0.2	1.0	1.6
Eat	1.8	1.8	0.1	1.5	2.0
Do homework	1.8	1.8	-	1.8	1.8
General personal needs and care	2.0	2.0	0.6	1.0	3.0
Indoor chores	3.4	3.0	1.4	2.0	5.0
Care of plants	3.5	3.5	0.9	2.0	5.0
Clean house	4.1	3.5	1.9	2.2	5.0
Home repairs	4.7	4.5	0.7	4.0	6.0
General household chores	4.7	4.6	1.3	1.5	8.0
Outdoor chores	5.0	5.0	1.0	2.0	7.0
Walk/bike/jog (not in transit) age 20	5.8	5.5	1.8	1.8	11.3
Walk/bike/jog (not in transit) age 30	5.7	5.7	1.2	2.1	9.3
Walk/bike/jog (not in transit) age 40	4.7	4.7	1.8	2.3	7.1

MET values and hr/day spent at these various activities were used by U.S. EPA (2009) to calculate selected minute ventilation rates shown in Table 3.24a-b.

Table 3.24a. Descriptive Statistics for Minute Ventilation Rates (L/min-kg) While Performing Activities Within the Specified Activity Category (US EPA, 2009)

Age Category (years)	Males				Females			
	Mean	50th	90th	95th	Mean	50th	90th	95th
	Sedentary & Passive Activities[a] (METS ≤ 1.5)							
Birth to <1	0.40	0.39	0.47	0.50	0.40	0.40	0.48	0.52
1	0.41	0.40	0.49	0.52	0.43	0.42	0.51	0.54
2	0.34	0.34	0.41	0.45	0.36	0.35	0.42	0.44
3 to <6	0.25	0.25	0.33	0.35	0.25	0.25	0.33	0.36
6 to <11	0.16	0.16	0.21	0.22	0.16	0.16	0.21	0.23
11 to <16	0.10	0.10	0.13	0.14	0.10	0.09	0.12	0.13
16 to <21	0.08	0.08	0.09	0.10	0.07	0.07	0.10	0.10
21 to <31	0.06	0.06	0.08	0.08	0.06	0.06	0.07	0.08
31 to <41	0.07	0.07	0.08	0.09	0.06	0.06	0.08	0.08
41 to <51	0.07	0.07	0.09	0.09	0.06	0.06	0.08	0.09
51 to <61	0.07	0.07	0.09	0.09	0.07	0.07	0.08	0.09
61 to <71	0.08	0.08	0.09	0.09	0.07	0.07	0.08	0.08
	Light Intensity Activities (1.5 < METS ≤ 3.0)							
Birth to <1	0.99	0.97	1.17	1.20	0.98	0.96	1.18	1.23
1	1.02	1.01	1.22	1.30	1.05	1.04	1.25	1.27
2	0.84	0.83	1.00	1.03	0.90	0.89	1.04	1.10
3 to <6	0.63	0.63	0.79	0.87	0.62	0.60	0.78	0.83
6 to <11	0.38	0.38	0.49	0.53	0.38	0.38	0.50	0.54
11 to <16	0.25	0.24	0.31	0.33	0.23	0.22	0.28	0.31
16 to <21	0.18	0.18	0.22	0.23	0.17	0.17	0.21	0.22
21 to <31	0.16	0.15	0.19	0.21	0.15	0.15	0.18	0.19
31 to <41	0.16	0.16	0.20	0.21	0.15	0.15	0.19	0.20
41 to <51	0.17	0.16	0.20	0.21	0.16	0.16	0.20	0.22
51 to <61	0.17	0.16	0.20	0.22	0.16	0.16	0.20	0.21
61 to <71	0.16	0.16	0.19	0.20	0.15	0.14	0.17	0.18
	Moderate Intensity Activities (3.0 < METS ≤ 6.0)							
Birth to <1	1.80	1.78	2.18	2.28	1.87	1.85	2.25	2.40
1	1.88	1.82	2.33	2.53	1.90	1.87	2.24	2.37
2	1.55	1.54	1.84	2.02	1.60	1.58	1.92	2.02
3 to <6	1.17	1.12	1.56	1.68	1.14	1.11	1.45	1.56
6 to <11	0.74	0.71	0.96	1.04	0.72	0.71	0.94	1.01
11 to <16	0.49	0.47	0.64	0.68	0.44	0.43	0.55	0.61
16 to <21	0.39	0.38	0.49	0.52	0.36	0.35	0.46	0.49
21 to <31	0.36	0.34	0.47	0.51	0.33	0.32	0.42	0.45
31 to <41	0.36	0.34	0.47	0.52	0.32	0.30	0.41	0.46
41 to <51	0.37	0.35	0.47	0.52	0.33	0.32	0.44	0.49
51 to <61	0.38	0.37	0.48	0.55	0.34	0.33	0.44	0.49
61 to <71	0.34	0.34	0.40	0.42	0.29	0.28	0.35	0.37

[a] Sedentary and passive activities includes sleeping and napping

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Table 3.24b. Descriptive Statistics for Minute Ventilation Rates (L/min) While Performing Activities Within the Specified Activity Category (US EPA, 2009)

Age Category (years)	Males				Females			
	Mean	50th	90th	95th	Mean	50th	90th	95th
	Sedentary & Passive Activities[a] (METS ≤ 1.5)							
Birth to <1	3.18	3.80	4.40	4.88	3.00	2.97	4.11	4.44
1	4.62	5.03	5.95	6.44	4.71	4.73	5.95	6.63
2	4.79	5.35	6.05	6.71	4.73	4.67	5.75	6.22
3 to <6	4.58	5.03	5.58	5.82	4.40	4.34	5.29	5.73
6 to <11	4.87	5.40	6.03	6.58	4.64	4.51	5.88	6.28
11 to <16	5.64	6.26	7.20	7.87	5.21	5.09	6.53	7.06
16 to <21	5.76	6.43	7.15	7.76	4.76	4.69	6.05	6.60
21 to <31	5.11	5.64	6.42	6.98	4.19	4.00	5.38	6.02
31 to <41	5.57	6.17	6.99	7.43	4.33	4.24	5.33	5.79
41 to <51	6.11	6.65	7.46	7.77	4.75	4.65	5.74	6.26
51 to <61	6.27	6.89	7.60	8.14	4.96	4.87	6.06	6.44
61 to <71	6.54	7.12	7.87	8.22	4.89	4.81	5.86	6.29
	Light Intensity Activities (1.5 < METS ≤ 3.0)							
Birth to <1	7.94	7.95	10.76	11.90	7.32	7.19	9.82	10.80
1	11.56	11.42	14.39	15.76	11.62	11.20	15.17	15.80
2	11.67	11.37	14.66	15.31	11.99	11.69	15.63	16.34
3 to <6	11.36	11.12	13.40	14.00	10.92	10.69	12.85	13.81
6 to <11	11.64	11.26	14.60	15.60	11.07	10.79	13.47	14.67
11 to <16	13.22	12.84	16.42	18.65	12.02	11.76	14.66	15.82
16 to <21	13.41	12.95	16.95	18.00	11.08	10.76	13.80	14.92
21 to <31	12.97	12.42	16.46	17.74	10.55	10.24	13.40	14.26
31 to <41	13.64	13.33	16.46	18.10	11.07	10.94	13.11	13.87
41 to <51	14.38	14.11	17.39	18.25	11.78	11.61	13.85	14.54
51 to <61	14.56	14.35	17.96	19.37	12.02	11.79	14.23	14.87
61 to <71	14.12	13.87	16.91	17.97	10.82	10.64	12.62	13.21
	Moderate Intensity Activities (3.0 < METS ≤ 6.0)							
Birth to <1	14.49	14.35	20.08	22.50	13.98	13.53	19.41	22.30
1	21.35	20.62	26.94	28.90	20.98	20.14	27.09	29.25
2	21.54	20.82	26.87	29.68	21.34	21.45	27.61	28.76
3 to <6	21.03	20.55	25.60	27.06	20.01	19.76	23.83	25.89
6 to <11	22.28	21.64	27.59	29.50	21.00	20.39	26.06	28.08
11 to <16	26.40	25.41	33.77	36.93	23.55	23.04	28.42	31.41
16 to <21	29.02	27.97	38.15	42.14	23.22	22.39	30.28	31.98
21 to <31	29.19	27.92	38.79	43.11	22.93	21.94	30.02	32.84
31 to <41	30.30	29.09	39.60	43.48	22.70	21.95	28.94	31.10
41 to <51	31.58	30.44	40.28	44.97	24.49	23.94	30.79	33.58
51 to <61	32.71	31.40	41.66	45.77	25.24	24.30	31.87	35.02
61 to <71	29.76	29.22	36.93	39.98	21.42	20.86	25.72	27.32

[a] Sedentary and passive activities includes sleeping and napping

In order to obtain minute ventilation rates that represent age ranges used in risk assessment for the "Hot Spots" program, age groups in Tables 3.25a-b were weighted equally by year of age and combined by OEHHA. The male and female data were also merged assuming 50:50 ratio in the California population. Two of the age groups combined from the U.S. EPA MET data do not exactly reflect the age ranges used by OEHHA, but they were judged reasonably close enough to use (i.e., combined MET ages 2 to <11 yrs represents OEHHA's 2<9 yr age group; combined MET ages 16 to <31 yrs represents OEHHA's 16<30 yr age group).

Table 3.25a. Minute Ventilation Rates for OEHHA Age Groups in L/kg-min (Males and Females Combined)

	0<2 years	2<9 years	2<16 years	16<30 years	16-70 years
	Sedentary & Passive Activities (METS ≤ 1.5)				
Mean	0.41	0.21	0.17	0.07	0.07
95th Percentile	0.52	0.29	0.24	0.09	0.09
	Light Intensity Activities (1.5 < METS ≤ 3.0)				
Mean	1.01	0.52	0.42	0.16	0.16
95th Percentile	1.25	0.70	0.56	0.21	0.21
	Moderate Intensity Activities (3.0 < METS ≤ 6.0)				
Mean	1.86	0.97	0.79	0.36	0.35
95th Percentile	2.40	1.33	1.09	0.49	0.48

Table 3.25b. Minute Ventilation Rates for OEHHA Age Groups in L/min (Males and Females Combined)

	0<2 years	2<9 years	2<16 years	16<30 years	16-70 years
	Sedentary & Passive Activities (METS ≤ 1.5)				
Mean	3.88	4.67	4.94	4.85	5.27
95th Percentile	5.60	6.22	6.66	6.73	6.96
	Light Intensity Activities (1.5 < METS ≤ 3.0)				
Mean	9.61	11.34	11.79	11.92	12.56
95th Percentile	13.57	14.80	15.67	16.15	16.24
	Moderate Intensity Activities (3.0 < METS ≤ 6.0)				
Mean	17.70	21.25	22.58	26.08	26.95
95th Percentile	25.74	28.07	30.25	37.67	37.65

From these tables, the 8-hour breathing rates were calculated by OEHHA based on age groupings used in the Hot Spots program and are presented in Section 3.2. Eight-hour breathing rates based on high intensity activities (MET values >6.0) were not considered here because even at the 95th percentile, U.S. EPA (2009) showed that individuals spent only about 1 hour or less per day at this intensity. For moderate intensity activities, the 95th percentile was at or near 8 hours/day for some age groups. For women in their third trimester of pregnancy, we are recommending using 8-hour breathing rates based on moderate intensity activities.

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3.7 Short-term (1-Hour) Ventilation Rates

SB-352 mandates school districts to conduct a risk assessment for school sites located within 100 meters of a freeway or busy roadway, and also mandates that the AB-2588 risk assessment guidance be used in the risk assessment. Assessing cancer risks due to exposure at a school site requires less than 24 hour breathing rates. OEHHA recommends breathing rates derived from the USEPA (2009) age-specific ventilation rates for these purposes.

The U.S. EPA ventilation rates were developed for various levels of activity and can be used to estimate inhalation cancer risk from short-term maximal emissions from facilities. Breathing rates for children at school can range from sedentary in the classroom to active on the playground or sports field. OEHHA assumes that in some cases, a day care facility will be present on the school site where children may be as young as 0<2 years of age. The age ranges that U.S. EPA (2009) presents are useful for estimating the impact of early-in-life exposure for school-age children. Classroom instructors (i.e., adults) are also considered under SB-352. If the soil ingestion or dermal pathways need to be assessed, OEHHA recommends the exposure variates presented elsewhere in this document. The public health protective approach is to assume that all daily dermal and soil ingestion exposure occurs at school.

As discussed in Section 3.6 above, U.S. EPA (2009) used existing data of ventilation rates (in ml/min or ml/kg-min) from a range of activities and assigned MET values depending on the intensity level of activity. Table 3.26 shows MET values various school-related activities collected from the CHAD database (U.S. EPA, 2009).

Table 3.26. METS Distributions for School-Related Activities

Activity Description	Mean	Median	SD	Min	Max
Passive sitting	1.5	1.5	0.2	1.2	1.8
Use of computers	1.6	1.6	0.2	1.2	2.0
Do homework	1.8	1.8	-	1.8	1.8
Use library	2.3	2.3	0.4	1.5	3.0
Attending day-care	2.3	2.3	0.4	1.5	3.0
Attending K-12 schools	2.1	2.1	0.4	1.4	2.8
Play indoors	2.8	2.8	0.1	2.5	3.0
Play outdoors	4.5	4.5	0.3	4.0	5.0
Recess and physical education	5.0	5.0	1.7	2.0	8.0

For OEHHA's purposes, the minute ventilation rates of males and females from Tables 3.24a-b were combined assuming a 50:50 proportional population distribution, and some age groups were combined assuming equal number of individuals in the population per year of age (Table 3.27a-b). For the SB-352, the child age groups were 0<2 years (infants), 2<6 years (preschool, kindergarten), 6<11 years (grade school), 11<16 (junior high and high school). From these minute ventilation rates, 1-hour ventilation rates are derived and presented in Section 3.2.

Table 3.27a. Minute Ventilation Rates for SB352 School Sites in L/kg-min (Males and Females Combined)

	0<2 years	2<6 years	6<11 years	11<16 years	16-70 years
	Sedentary & Passive Activities (METS ≤ 1.5)				
Mean	0.41	0.28	0.16	0.10	0.07
95th Percentile	0.52	0.38	0.23	0.14	0.09
	Light Intensity Activities (1.5 < METS ≤ 3.0)				
Mean	1.01	0.69	0.38	0.24	0.16
95th Percentile	1.25	0.90	0.54	0.32	0.21
	Moderate Intensity Activities (3.0 < METS ≤ 6.0)				
Mean	1.86	1.26	0.73	0.47	0.35
95th Percentile	2.40	1.72	1.03	0.65	0.48
	High Intensity Activities (METS ≥ 6.0)				
Mean	-	2.27	1.37	0.92	0.64
95th Percentile	-	3.12	1.87	1.34	0.93

Table 3.25b. Minute Ventilation Rates for SB352 School Sites in L/min (Males and Females Combined)

	0<2 years	2<6 years	6<11 years	11<16 years	16-70 years
	Sedentary & Passive Activities (METS ≤ 1.5)				
Mean	3.88	4.56	4.76	5.43	5.27
95th Percentile	5.60	5.95	6.43	7.47	6.96
	Light Intensity Activities (1.5 < METS ≤ 3.0)				
Mean	9.61	11.31	11.36	12.62	12.56
95th Percentile	13.57	14.38	15.14	17.24	16.24
	Moderate Intensity Activities (3.0 < METS ≤ 6.0)				
Mean	17.70	20.75	21.64	24.98	26.95
95th Percentile	25.74	27.16	28.79	34.17	37.66
	High Intensity Activities (METS ≥ 6.0)				
Mean	-	37.34	41.51	48.69	50.10
95th Percentile	-	49.66	58.50	69.62	73.23

No high intensity minute ventilation rates are included in Tables 3.25a-b for infants age 0<2 yrs. The distributions generated by U.S. EPA (2009) for hrs/day spent at MET values ≥6.0 for infants (age 0<2 yrs) suggest that this level of activity for a 1-hr duration is unlikely for this age group.

SB-352 is also designed to protect adults working at the schools, including pregnant women. For women in their third trimester of pregnancy, OEHHA is recommending using ventilation rates of moderate intensity activities based on the same reasoning cited above in Section 3.6.

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EXHIBIT C

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Comments Regarding Air Quality Impact Analysis and Mitigation

Event Center and Mixed-Use Development at Mission Bay Blocks 29 – 32

Final EIR Response to Comments (San Francisco, CA)

Autumn Wind Associates, Inc.
Newcastle, CA

Prepared for Tom Lippe, Attorney

Oct 30, 2015

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I. Introduction

Autumn Wind Associates provides this letter in response to air quality related information contained in the recently released Final EIR for the Event Center and Mixed-Use Development at Mission Bay Blocks 29 – 32 (hereinafter referred to as "Events Center" or "project"); we submit this comment letter at the request of Tom Lippe, Esq.

We continue to have serious concerns with certain portions of the EIR's air quality analysis and mitigation, and specifically take issue here with a number of the Lead Agency's responses to our comments submitted in August on the DSEIR. Details are provided below.

II. BAAQMD's NSR-Derived Thresholds of Significance Used by the Lead Agency Continue to Under-Represent Project Emissions Significance

In our comments submitted previously on the DSEIR, we noted that the BAAQMD's CEQA thresholds of significance, applied by the Lead Agency to evaluate the Event Center project's emission impacts, were developed non-scientifically from NSR values that were designed to counterbalance anticipated growth in stationary source facility emissions under the jurisdiction of the BAAQMD. An inherent problem with using NSR emission thresholds for constructing CEQA thresholds is that the 9-county air basin's stationary sources represent no more than a small percentage of the total emissions inventory.

12
[LC-AQ-4]

Vehicle emissions within the basin, by contrast, represent the lion's share of criteria pollutants and are chiefly responsible for the basin's ozone nonattainment designations that stretch back decades. Similarly, the region's nonattainment of particulate standards has been heavily influenced by vehicle emissions. To exemplify, fully 84% of NOx (ozone precursor) emissions in the Bay Area air basin are emitted by vehicles[1], and not by stationary sources. The region has been designated nonattainment for PM2.5; fine particulate is generated almost entirely by combustion (including internal combustion occurring in vehicle engines), and monitored values

[1] A "vehicle" is typically characterized by its being self-propelled, and includes both onroad and offroad applications. See Table 4, pg. 6 for distribution of BAAQMD's annual average emissions by major source categories; "Bay Area Emissions Inventory Summary Report: Criteria Air Pollutants Base Year 2011" at http://baaqmd.gov/~/media/Files/Planning%20and%20Research/Emission%20Inventory/BY2011_CAPSummary.ashx?la=en

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in the region continue to climb annually; 28% of the total inventory is attributed to vehicles. Importantly, population (people) regionally continues its historical growth in lockstep with numbers of vehicles and vehicle-miles-traveled; despite substantial advances in technical on-vehicle controls and reductions in tailpipe emissions of both NOx and particulates over the years, the region continues to exceed federal and state air quality standards.

As we noted previously, establishing CEQA thresholds of significance levels using NSR levels is to automatically undercut emission reductions that should be obtained from each new "indirect source" (such as the Event Center that will attract new vehicle trips and related emissions) subject to CEQA review. By using outdated, non-scientifically designed NSR values, CEQA thresholds adopted by BAAQMD and borrowed for use by OCII will automatically underrepresent air emission significance, particularly when evaluated against past nonattainment designations and PM2.5 ambient air monitoring values that, despite recession effects, continue to reflect a slowly worsening trend line.

At FEIR pg. 13.13-15, the Lead Agency states that ozone levels have declined 17% over the last 20 years, despite increases in VMT and vehicle population numbers. The implicit rationale here is that improvements in regional ozone numbers reflect validly-set CEQA threshold values and are to answer for some of that gain, yet this is not true. No evidence is provided by the Lead Agency to show that ambient air ozone monitoring data to support the 17% figure is linked causally to the levels at which the CEQA thresholds, based on under-representative NSR thresholds have been set for NOx and ROG precursor pollutants. Real reductions in NOx emissions over the last 20 years attributable by use of the District's CEQA NOx threshold on land use cases will represent, at mostly, only a tiny sliver of the total improvement picture if it represents any all. What answers for that 17% improvement statistic is not the District's CEQA thresholds that were set on the under-representative NSR lbs/day values, but the extraordinary reductions availed by increasingly stringent tailpipe standards invoked at the state and federal levels over the last five decades.

NOx and ROG are ozone precursors, and vehicle emissions controls and their related regulations and improvements have focused on them almost exclusively across the last several decades. To exemplify the gains, federal NOx tailpipe standards for cars dropped (becoming more stringent) 35% in 1977, then 50% more in 1981, then another 40% off the 50% in 1994, then another 50% from there in 1999, then, from that 1999 level another 77% through 2009 model year. For SUVs, vans, and heavier trucks between 6000-8500 lbs, NOx reductions were imposed with a 10% reduction required in 1994, and then with an additional 65% - 95% depending on vehicle

12 [LC-AQ-4] cont.

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type by 2009[2]. By comparison, the BAAQMD's NSR thresholds in 1999[3], shown at FEIR pg. 13.13-15, were set at 15 tons per year for ROG , NOx, and PM10, equating to 80 lbs/day. Those NSR trigger levels would drop, once, to ten tons a year roughly a decade later, and CEQA thresholds upon which they were based were reduced similarly to current levels (54 lbs/day each for ROG, NOx; PM2.5; 82 lbs/day PM10). For the daily NOx threshold in effect now, this represents a 32.5 % reduction from the NSR-based 1999 threshold. How relevant was that to improving regional air quality, as judged by the 17% statistic? Comparing that reduction to the percentage NOx reductions contributed by increasingly stringent federal tailpipe emission standards, the Bay Area's tailpipe onroad NOx, formative of ozone air pollution, decreased by at least sixteen times that amount on a percentage basis. (32.5% NOx threshold value decrease vs. decrease in NOx onroad tailpipe standards of 35% x 50% x 40% x 50% x 77%, or a net reduction of almost 97% via onroad NOx standards.)

Clearly, any inference by the Lead Agency in the FEIR that the CEQA thresholds, having been set arbitrarily on under-representative NSR thresholds, are to account for the 17% regional improvement in ozone air pollution over the past 20 years is unsupported by the evidence. In fact, it can and should be argued that only a 17% regional ozone improvement, as judged against the stunning improvements in mobile source emission reductions provided by federal and state regulation, is a clear and obvious indictment of the growth in indirect source emissions (including the 17 tons of ozone precursors likely underestimated for the Event Center project) resulting from BAAQMD's improperly designed, under-representative CEQA thresholds of significance.

Further underscoring that mobile source criteria pollutants are decreasing not from local air agency programs but as a result of state and federal ones, the most recent summary report, the BAAQMD's "Bay Area Emissions Inventory Summary Report: Criteria Pollutants Base Year 2011", at pg. 13 attributes regional ROG (an ozone pre-cursor) improvements:

> "CARB regulations on mobile sources have also significantly reduced ROG emissions. On-road motor vehicle emissions have declined over the years despite annual increases in Vehicle Miles Travelled (VMT). This is due to the fleet turnover, with newer, lower emitting vehicles replacing older, higher emitting ones. The introduction of Reformulated Gasoline Phase II (RFGII) in 1996 and the introduction of Enhanced Inspection and

12 [LC-AQ-4] cont.

[2] US EPA; Emission Facts The History of Reducing Tailpipe Standards. See: www3.epa.gov/otaq/consumer/milestones.htm+&cd=1&hl=en&ct=clnk&gl=us
[3] See BAAQMD CEQA GUIDELINES Assessing the Air Quality Impacts of Projects and Plans; 1999; pg 16.

Maintenance program (Smog Check II) in the Bay Area, which started in October 2004, have resulted in further reductions."

At pg. 14, NOx strategies and improvements for the Bay Area are identified:

"Reductions in NOx emissions prior to 2011 were due in part to Air District regulations on combustion sources including refineries and power plants. Tighter emission controls on motor vehicles also significantly reduce NOx emissions. Smog Check II, introduced in the Bay Area in 2004, played an important role in achieving NOx reductions, as it requires that vehicles are tested and that failing vehicles are repaired. NOx emissions from on-road motor vehicles will continue to decline due to fleet turnover. CARB's aggressive regulations on on-road heavy duty diesel trucks, buses, and construction equipment will continue to reduce NOx and diesel particulate matter. "

This excerpt reinforces the BAAQMD's historical and largely exclusive focus on 1) imposing NOx reductions on the same stationary sources that represent only a very small margin of the air basin's NOx inventory; and 2) continuing the historical reliance on the State and federal government for Smog-Check, cleaner vehicle tailpipe standards, and other "aggressive regulations" to reduce both NOx and PM engine emissions.

12 [LC-AQ-4] cont.

BAAQMD's CEQA thresholds, adopted for use by OCII on the Events Center project EIR, have been and remain under-representative quantitatively based on non-scientifically derived NSR thresholds. NSR-derived CEQA thresholds will fail to adequately counterbalance land use growth-related increases in new, indirect source (vehicle) emissions of the Events Center, along with emissions from other land use projects in the Bay Area, subject to CEQA review, and those land use projects will generate thousands of tons of emissions on an annual basis no differently—aside from being greatly under-evaluated by use of the District's lax CEQA thresholds-- than those highly regulated local stationary sources operating under routine, severe restrictions by the air district.

In conclusion, use of the BAAQMD's CEQA thresholds to evaluate the Event Center project's impact significance for both onroad and offroad emissions have been based on under-representative NSR daily emission offset levels, and those levels, applied to evaluate the Events Center's air impacts, will understate their significance to local and regional air quality. This is no more appropriate than the Lead Agency's implication that the region's 17% improvement in

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regional ozone over a 20-year period is attributable to those under-representative CEQA thresholds.

12 [LC-AQ-4] cont.

III. NBA-Game Vehicle Trips Associated with Oracle Arena Appear To Have Not Been Relinquished For Use by SF Warriors at Proposed Events Center

At FEIR 13.13-45, the Lead Agency has again repeated its contention that basketball-related games at the Oracle Arena in Oakland represent existing baseline vehicle emissions which, already existing, are transferable to the new SF arena. The FEIR's air emissions estimates rely on this baseline argument to avoid disclosinig greater emission offsets that would otherwise be necessary to reduce the project's emissions to less than significant levels.

"These trips occur now so they are part of the existing baseline condition. It is reasonable to assume that the Oracle Arena will not be host to another NBA franchise in the Bay Area, so no new vehicle emissions associated with NBA basketball games would be expected in the region. This assumption is supported by substantial evidence and vetted by OCII. The assumption was also accepted by the California Air Resources Board when it approved the project sponsor's analysis of greenhouse gas emissions pursuant to its AB 900 application."...

13 [LC-AQ-5]

"The Specific Plan (Oakland Coliseum Area Specific Plan Final EIR) is based on Oakland's assumption that all three current City of Oakland sports franchises (the Raiders, the A's and the Warriors) will make independent business decisions to remain in Oakland, and at the Coliseum District, and that each of the sports franchises will have new, separate venues for their games. Consequently, the assumptions within the Coliseum Area Plan Final EIR are entirely different from those of the proposed project.

However, as we noted in our previous comments Oakland has clearly identified at various locations in its August 2014 Coliseum Area Specific Plan DEIR that it has assumed that its baseline involves retention of the Warriors, and hence EIR emissions estimates are predicated on that fact.

The issue here is not whether the Warriors intend to move to the new SF Events Center and that some existing vehicle trips will move with them, but whether the game-related vehicle trips the Events Center EIR has claimed in its emissions calculations and for mitigation value are transferable from the Oracle Arena. If the modernizing and expansion of the area, inclusive of

the Oracle Arena, intends to keep those trips on their books (and the Coliseum SPA DEIR indicates they will), they cannot then also be claimed for application to the SF Event Center project (as they have been). We continue to contend that they cannot be applied in the Events Center project because they have not been relinquished by the existing facility that is anticipated within the Coliseum redevelopment process, and there is no evidence (a letter from the City of Oakland, a clear statement in the Coliseum SPA DEIR that they have not continued to count those NBA-franchise related vehicle trips, etc.) provided in the SF Events Center EIR to that effect. The Coliseum SPA DEIR anticipates modernizing the existing Oracle Arena with no substantive change in location, and retention of the NBA franchise or recruitment of a non-NBA sports team. At Coliseum SPA DEIR pg. 4.4-59 baseline emissions were identified for 2013. Further, the Oakland DEIR was released in July 2014, a year prior to issuance of the SF Events Center DEIR, and at least four months prior to the release of the Event Center NOP. Coliseum SPA DEIR pg. 4.4-59:

> "CalEEModTM 2013.2.2 was used to evaluate (...) criteria pollutant emissions for (...) existing criteria pollutant emissions from the Coliseum District area ("Existing No Project", or "2013 Baseline")."

Showing in the screenshot below, Coliseum SPA DEIR pg. 4.2-61, Table 4.2-7 provides baseline operational emissions for the Coliseum project, inclusive of existing Warriors game trips, for the 2013 baseline year, and then again for the 2035 baseline year. According to the DEIR:

> "Table 4.2-7 shows estimated average daily and annual maximum criteria emissions under current conditions (2013 Baseline), as well as the emissions projected from current land uses at the Coliseum District as they would occur in 2035 (2035 Baseline). These projected 2035 baseline emissions are based on a continuation of existing land uses, **vehicle trips, and VMTs**. (Emphasis added) Over time, regulatory changes at the state level are projected to go into effect, resulting in improvements primarily to vehicle exhaust emissions."

13 [LC-AQ-5] cont.

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Table 4.2-7 Operational Criteria Pollutant Emissions – Change in Coliseum District Baseline

Emissions (tons/year)			
Pollutant	**2013 Baseline**	**2035 Baseline**	**Baseline Increment**
ROG	26	21	-5
NOx	30	11	-19
PM_{10} Total	9	9	0
$PM_{2.5}$ Total	3	3	0
Emissions (pounds/day)			
Pollutant	**2013 Baseline**	**2035 Baseline**	**Baseline Increment**
ROG	144	115	-29
NOx	165	62	-103
PM_{10} Total	52	50	-2
$PM_{2.5}$ Total	17	15	-2

Abbreviations:
CalEEMod™ = California Emissions Estimator Model
CEQA = California Environmental Quality Act

Immediately after, the DEIR states:

> "Table 4.2-8 shows average daily and maximum annual projected 2035 criteria air pollutant emissions with the Coliseum District project, compared with 2013 Baseline emissions levels, and the incremental increase of emissions. The table shows that for each criteria pollutant, in the year 2035, the development will emit more pollutants than the City's threshold."

A screenshot of Table 4.3-8 is provided:

13 [LC-AQ-5] cont.

Table 4.2-8 Coliseum District Operational Criteria Pollutant Emissions

Emissions (tons/year)					
Pollutant	Existing (2013) Baseline	Future (2035) Coliseum District	Project Increment	Threshold	Greater than Threshold?
ROG	26	99	73	10	YES
NOx	30	51	21	10	YES
PM10 Total	9	44	35	15	YES
PM2.5 Total	3	13	10	10	YES
Emissions (pounds/day)					
Pollutant	2013 Baseline	2035 Coliseum District	Project Increment	Threshold	Greater than Threshold?
ROG	144	544	400	54	YES
NOx	165	281	116	54	YES
PM10 Total	52	243	191	82	YES
PM2.5 Total	17	73	57	54	YES

Abbreviations:
CalEEMod = California Emissions Estimator Model
CEQA = California Environmental Quality Act
NOx – nitrogen oxides

13 [LC-AQ-5] cont.

The Coliseum SPA DEIR has made it abundantly clear in written and graphical form that it has assumed retention of the Warriors at their present Oakland area site or recruitment of a replacement non-NBA team, counted those related vehicle trips and their attendant air pollution impacts, and it has provided baseline emissions data for 2013 for estimation of emissions for the proposed Coliseum development, with Arena renewal, that reflects that retention. In Table 4.2-8 immediately above, the "Project Increment" column represents the difference between the Warrior's emission baseline values, inclusive of game-related trips that have been ongoing at the facility for decades, and the 2035 future-case projection. Nothing has been provided to show that the Oakland EIR has relinquished its historical NBA-franchise trips, and thus those "existing" trips and their emissions must not then be applied as, in effect, a credit in the SF EIR, since an automatic under-representation and under-mitigation of the Event Center's total, significant operational emissions (largely caused by vehicle trip emissions) will then occur. While this helps the Event Center Applicant since fewer emission offsets will need to be acquired to bring the project's significant emissions down to sub-threshold levels, it is not appropriate under CEQA.

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No information is found in Table footnotes or surrounding to reflect that trips factored into the 2013 baseline were somehow relieved of the increment of historical Warrior game-related trips that must be carefully accounted for in the CEQA review process for both projects, nor has the SF Events Center EIR ever provided actual evidence that the Oakland Coliseum project has relinquished or abandoned those baseline Warrior trips, already studied and accounted for under CEQA, to the Oracle Arena as it is redeveloped and expanded. Unless the SF Events Arena project can provide factual information from Oakland Coliseum SPA EIR administrators that shows that trip emissions associated with the long-established NBA-style games at the Oracle Arena will not continue with the Warriors or any other similar sports team, and that the Coliseum project has abandoned any intent to have a replacement sports team for the purposes of estimating the emissions of the redeveloped, new arena proposed for the Coliseum Specific Plan Area, the SF Events Center cannot claim or use any measure of them for their emissions estimates or for mitigation offsetting.

13 [LC-AQ-5] cont.

Finally, CARB's AB 900 GHG streamlined analysis process for large (>$100 million) projects is not part of the CEQA process used to estimate and evaluate the proposed SF Arena's environmental impacts, does not afford the public effective review and input, nor is it subject to administrative review. Without evidence provided in the SF Events Center EIR of a potential for double-claimed Warriors trips, CARB likely erred if they assumed that Oracle Arena NBA trip emissions were wholly fungible with and transferable to the SF EIR. Before the SF Events Center can legitimately claim any benefit from Oracle's NBA-related vehicle trips for reducing its new, estimated vehicle emissions under CEQA, they must have been "taken off the books" in Oakland in order to prevent what would in effect be a double-counting. As we noted previously, those Oracle-based NBA trips cannot be transferred to San Francisco's proposed Events Center if they have been retained "on the books" in Oakland. Nothing in the FEIR proves otherwise.

IV. Project Mitigation to Reduce Construction and Operational Emissions Is Flawed

At FEIR pg. 13.13-53 the Lead Agency rebuffs concerns that Tier 2 engines and Tier 4 engines required in the SDEIR of all 195 pieces of project-related construction equipment may not provide adequate emission reductions:

14 [LC-AQ-2]

> "As a part of the implementation guidance, the City Planning Department presents the results of a statewide data summary gathered by the California Air Resources Board as part of compliance with the In-Use Off-Road Diesel Regulation. The data indicate the

> available construction equipment at various engine tier levels. These data indicate that in 2014 approximately 59 percent of all off-road equipment in the state were operating with Tier 2 engines or better. Given that the majority of equipment statewide is capable of complying with the conditions of Mitigation Measure M-AQ-1, it is reasonable to conclude that the measure represents feasible mitigation."

No information has been provided in the SDEIR or FEIR as evidence, other than the statistic excerpted above, that all 195 pieces of project construction equipment will be available for work at the Event Center at all times necessary during the 26-month long construction process. Rather than contacting major construction firms expected to bid on the project to determine actual Tier 2 or better equipment availability, the Lead Agency has belatedly decided to rely on nothing more than the belatedly-developed statistic excerpted above. In actuality, this statistic reflects serious flaws; it acts as another example of the Lead Agency's inexperience with construction vehicles and practices.

A statistical average may look good on paper but it cannot ensure provision of all 195 pieces of equipment that must meet the FEIR MM-AQ-1's Tier, VDECs, and NOx requirements---only actual, compliant equipment available for use at the project will. Why did the Lead Agency fail to conduct a survey of construction firms that could be expected to bid on Event Center work? No information is provide in the EIR that actual fleets which can be expected to work at the Events Center project are available to meet the requirements of the mitigation measure. Further, the statistic provided by the Lead Agency does not say that 59% of all construction equipment vehicles in CA will meet Tier 2 or better status--rather, it says that all ***offroad*** vehicles do (as of 2014). All offroad vehicles are not all construction vehicles; in fact, construction vehicles are a small subset of all offroad vehicles. Moreover, the rate of compliance for construction vehicles, particularly large, expensive, long-lived ones (scrapers, excavators, pile drivers, etc.) will be far lower than the average for all **offroad** vehicles that include such non-construction equipment as ground support vehicles at airports, agricultural forklifts, and myriad other offroad, non-construction equipment types. Because the statistic represents all offroad vehicles in CA and not construction vehicles, it cannot be used to even roughly determine the proportion of construction vehicles supposedly available to the project with Tier 2 engines, VDECs, and 40% NOx control; hence, the statistic is irrelevant to the Events Center project environmental review and does nothing to refute our concerns expressed clearly at the SDEIR review stage. This is a major flaw, but others are no less important.

14 [LC-AQ-2] cont.

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Rather than relying solely on the FEIR's statistic to respond to public concerns of construction mitigation challenges, the construction equipment list for the project found at FEIR Vol 6, pg. 413 of 1669 should have been used by the Lead Agency for comparisons to CARB offroad construction vehicle and equipment databases, and then, more importantly, to develop a survey of construction companies capable of working on the project for their compliant equipment lists. Other CEQA projects, particularly in the Sacramento area[4], have involved detailed surveys of construction firms to determine their equipment compliance mitigation potential and availability. Just as importantly, CARB offroad regulations (as of 2011) no longer require VDECs be installed on all Tier 2 vehicles, nor will OSHA restrictions permit such due to sight-and-visibility concerns[5]. In reality, it is a near-certainty that all 195 pieces of offroad, each required to be Tier 2 or better engines *and* equipped with VDECs *and* producing 40% NOx reduction, will be unavailable—and unattainable-- for compliance with the mitigation's requirements.

While the FEIR's offroad emissions mitigation is unlikely to meet the Tier 2 or better requirement with mandatory VDECs, it is also virtually certain to fail the mandated 40% NOx reduction required of each piece of equipment. To an even worse extent than the VDECS requirement, the mitigation measure's linked NOx decrement is not practicably obtainable since there are no CARB-approved VDECs products that will provide highly effective particulate filtering with that level of NOx destruction. While the Cleaire Longview product would produce DPM control with 25% NOx destruction, it was limited to onroad vehicles only, no CARB certifications were obtained after early 2013, and Cleaire has been out business for some time. Cleaire's offroad counterpart product, the Lonestar product, was designed to produce similar emission benefits, but was limited to certain years of rubber-tired construction vehicles only. (We note that the construction equipment list for the Events Center project at FEIR Vol 6, pg. 413 of 1669, lists use of scrapers, excavators, and other types of construction equipment that are tracked, not rubber-tired.) The Johnson-Mathey EGRT product, capable of Level III particulate control with 40% NOx destruction has been CARB-certified for certain pre-2003 onroad trucks only. The Nett BlueMax DPF-SCR product, while producing substantial reductions of NOx and particulate, is certified only for certain-year stationary gensets. Finally, the ECS DPF catalyst with use of an aqueous diesel product will produce only Level II particulate control with 20% NOx destruction; however, the PuriNOx diesel fuel product has not been available for a number of years and thus that option is not viable.

14 [LC-AQ-2] cont.

[4] Personal conversations with SMAQMD CEQA planner Karen Huss; October, 2015
[5] See OSHSB regulation regarding exhaust retrofit visibility; http://www.arb.ca.gov/msprog/ordiesel/vdecssafety.htm

As written, the Events Center EIR's MM-AQ-1 requires that every piece of offroad construction equipment used at the project will be mitigated with required use of Tier 2 engines equipped with VDECs and 40% NOx reduction if similarly-equipped Tier 4 and then, next, Tier 3 equipment are not available. The measure mandates without exception that every piece of equipment to be used at the Events Center project, regardless of Tier, will include VDECs that must produce a collateral 40% NOx reduction. To our knowledge, there are no VDECs products, CARB-certified for use in CA, which will provide that level of NOx destruction. Further, we stress that M-AQ-1 requires the specified level of NOx destruction on both Tier 3 and 4 engines, and thus later model engines with relatively lower NOx emissions (due to more stringent emission standards) would still need to produce the 40% NOx decrement taken against either their respective Tier 3 or Tier 4 NOx certification levels.

We have provided here a screenshot of a relevant portion of M-AQ-1 from SDEIR pg. 5.4-35:

TABLE M-AQ-1-1
OFF-ROAD EQUIPMENT COMPLIANCE STEP-DOWN SCHEDULE

Compliance Alternative	Engine Emission Standard	Emissions Control
1	Tier 4 Interim	ARB NOx VDECS (40%)[52]
2	Tier 3	ARB NOx VDECS (40%)
3	Tier 2	ARB NOx VDECS (40%)

How to use the table: If the requirements of (A)(1)(b) cannot be met, then the project sponsor would need to meet Compliance Alternative 1. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 1, then Compliance Alternative 2 would need to be met. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 2, then Compliance Alternative 3 would need to be met.

b) All off-road equipment shall have engines that meet either U.S. Environmental Protection Agency (USEPA) or California Air Resources Board (CARB) Tier 4 off-road emission standards. If engines that comply with Tier 4 off-road emission standards are not commercially available, then the project sponsor shall provide the next cleanest piece of off-road equipment as provided by the step down schedules in Table M-AQ-1-1.

As the compliance alternatives above indicate, all tiered engines must be equipped with VDECs that will provide both particulate filtering and a reduction (against the particular engine's

14 [LC-AQ-2] cont.

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applicable emission standard determined by year of manufacture) of NOx by 40%. While this is almost certainly unattainable, SDEIR Table 5.4-8 (Mitigated Average Daily Construction-Related Emissions) clearly shows that the project has assumed it would, and has made a related emissions reduction claim for both particulate and NOx benefits to result from the mitigation measure's Compliance Alternatives. Because the construction industry in CA does not yet have enough Tier 4 offroad vehicles to readily supply all equipment types to large projects under concurrent construction such as the Events Center project[6], because Tier 2 vehicles are not required by CARB to be equipped with VDECS, and because OSHA restrictions prevents all construction vehicles from being retrofitted with VDECs, M-AQ-1's mandated application of the related components to every piece of project-related construction equipment is probably unattainable.

Further, the requirement that each Tiered level of equipment have VDECS that will provide collateral reductions of 40% NOx appears to be impossible based on the unavailability of NOx destruction technology for construction equipment and as reflected by CARB's certified-VDEC listings. Finally, other than for what has turned out to be an inapplicable statistic, we remain unable to find substantive information in the Events Center FEIR, in response to our earlier-expressed concerns regarding M-AQ-1, that proves construction fleets in CA can meet the measure's requirements and that demonstrates that certified technologies are available in CA to provide the EIR's mandated and claimed emission reductions. As written, M-AQ-1 requirements and claimed emission reductions are likely unattainable; if this is correct, the flawed measure cannot be enforced nor will it provide the emission benefits claimed in the EIR to reduce the project's impacts to less than significant levels. M-AQ-1 and related emission benefits (NOx, PM10/2.5, reduced health risks) claimed for reductions of the project's impacts must be revised, with results recirculated for public review and comment.

14 [LC-AQ-2] cont.

V. Use of a Qualified 3rd Party Specialist or Engineer Is Needed to Ensure Actual Mitigation-Required Construction Eqpt Emission Reductions

At FEIR pg. 13.13-55 the Lead Agency contends that a potential conflict of interest posed by the Project Sponsor's "review role in the mitigation measure" is negated by their requirement that the Construction Emissions Control Plan be reviewed or approved by OCII or its "designated representative". OCII argues that "air quality specialists" at SF Planning are capable of verifying

15 [LC-AQ-6]

[6] Phase IV of the Folsom Dam Auxiliary Spillway project, US Army Corps of Engineers, has provided about 95% compliance with Tier 4 equipment mitigation, but without the Events Center EIR's mitigation to also provide 40% NOx benefit.

Event Center construction fleets for compliance with the project's mitigation measures, pointing to unspecified experience with, for example, a harbor hoteling project, and "familiarity with modeling programs" used for air quality analysis. We note that that the Lead Agency has used the term "air quality specialists" and not "Air Quality Specialists", indicating that their job descriptions likely reflect non-technical Planner skillsets rather than those required for an air quality agency engineering or specialist position involved with evaluating and verifying VDECs and CARB certifications; evaluating and verifying NOx reduction claims emissions for offroad construction equipment; evaluating and verifying engine Tiers on all pieces of offroad construction equipment; and ensuring that each and every piece of onsite equipment is verified and tracked regularly for hours of operation at the project site. Hands-on experience with construction vehicles of all types and vintages, emission control technologies, CARB regulations and aftermarket retrofit certification requirements, possessing CARB certification for performing visible emissions evaluations for construction equipment opacity violations, and other technical, hands-on, construction-related skillsets will be required to ensure that every piece of offroad construction equipment used at the Events Center project meets the highly-specific and technical requirements of M-AQ-1 for every day such equipment is used at the jobsite; it is highly improbable that a "planner" would possess such skillsets.

15 [LC-AQ-6] cont.

Further, "familiarity" can indicate little more than a vague awareness and thus it connotes little substance. As we argued in our comments previously, the Lead Agency should rely for onsite verification of the project's mitigation measures, in detail, on BAAQMD personnel or on an independent, trained, professional environmental specialist or engineer with expertise in air emissions, construction vehicles, and emissions control technologies and strategies used to control and reduce construction equipment emissions. The environmental compliance professional should be onsite daily, with weekly assessments in reports delivered to OCII. Based on a lack of experience with construction equipment, its availability, and with practicable construction mitigation, it is apparent that OCII has constructed M-AQ-1 in ways that are fundamentally flawed and the measure is unenforceable. Accordingly, OCII's choice of SF Planning personnel, or their own, to ensure compliance and enforcement of the project's air quality mitigations is likely to be similarly flawed. If OCII refuses to require use of highly qualified air pollution control personnel to ensure compliance and enforcement of M-AQ-1 and other air quality mitigations, we believe the MMRP must be amended to provide for regular (bi-weekly or monthly) independent audits provided by BAAQMD or a private, professional air quality consultant to verify equipment lists and details with actual vehicles on the project site; the auditor would have specialized training in visible emissions, air quality regulations, vehicle emissions and control technologies used in construction equipment, etc. Without such third-

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party verification the project will likely not produce the required emission reductions that have been claimed in the EIR in order to reduce the project's impact significance levels.

15 [LC-AQ-6] cont.

VI. Renewable Diesel Should Have Been Made Mandatory in Construction and Operational Mitigation Measures

No substantive explanation is provided in the FEIR for why the Lead Agency has failed to require use of renewable diesel to mitigate offroad construction equipment emissions and for use in emergency standby generators. As we pointed out in our previous comments renewable diesel is readily available, and it provides criteria and carbon emission reduction benefits that cannot be matched by the biodiesel mentioned in the EIR, it routinely costs less than biodiesel, and in many cases it costs less or is on par with costs for regular diesel.

At FEIR 13.13-61 the Lead Agency has applied conditions to the use of renewable diesel in emergency standby gensets that reflects its inexperience and reluctance to require use of available technology that has demonstrated clear cost-effective emission benefits within the region. As we pointed out in comments on the SDEIR, renewable diesel is available at multiple locations throughout central and northern CA at costs on par with conventional diesel (and routinely less than the less-effective biodiesel mentioned by the Lead Agency in the Events Center EIR), its substantial carbon benefits are unmatched against regular diesel or biodiesel, and it produces positive reductions compared with regular diesel in particulate (-34%), NOx (-18%)[7], and other pollutant reductions needed by the Events Center project. Use of renewable diesel in existing or new diesels requires no retrofitting and either does not affect performance or improves it incrementally. The Lead Agency's concern that renewable diesel's NOx benefit may be lost as a result of 12 miles of transport (see FEIR pg. 13.13-57) to the Event Center borders on the ludicrous, since traditional diesel (particularly from imported crude) is transported a greater distance, and because the Lead Agency has failed altogether to verify traditional diesel's transport distance to the Events Center for comparison purposes.

16 [LC-AQ-7]

Renewable diesel's primary benefit is its extremely low carbon intensity; the Propel renewable diesel product we discussed in previous comments has zero land use or other indirect carbon intensity effect, and its (direct) carbon intensity (CI) is 68% less than traditional diesel's CI value; why, then, has OCII not embraced renewable diesel's carbon benefits that, importantly, will help offset the project's actual GHG emissions and criteria pollutant emissions? Renewable diesel is

[7] "Low Carbon Fuel Statistics", pg 9; http://propelfuels.com/assets/hpr-launch/docs/california-low-carbon-fuel-consumer.pdf

readily fungible with traditional diesel for storage and has better product life characteristics. Its use in construction and onroad diesels requires no adjustments or adaptations, it is locally available, and it is functionally transparent with traditional diesel for use in diesel engines.

While the Lead Agency has refused to embrace renewable diesel for the Events Center project, its own parent agency has not. San Francisco's mayor publicly announced that the City-and-County had committed to 100% renewable diesel use last July, with full transition by the end of 2015[8]. The City of Walnut Creek committed to 100% use of renewable diesel previously, and relies on it exclusively now. [9] If the City of Walnut Creek and the City and County of San Francisco, with their experts in diesel technology and fleet management, and with ready access to BAAQMD air quality expertise, have embraced the multiple air and energy benefits of renewable diesel, what explains the Lead Agency's intransigent failure (FEIR pg. 13.13-57) to require its use in the Event Center's air quality mitigations? CEQA requires the use of all reasonable, feasible mitigations for the reduction of the project's significant air quality impacts; the Lead Agency's tepid response to renewable diesel is, against the evidence of its considerable benefits that has been readily available since prior to issuance of the project's SDEIR, inadequate to ensure its use on the project.

16 [LC-AQ-7] cont.

Further, if the "OCII or the City's air quality specialists" lack the expertise necessary to have already reviewed and selected renewable diesel as they should have (based on the City's adoption of it prior to issuance of the Events Center FEIR), and for what appear to be fatal flaws built into M-AQ-1 (as pointed out elsewhere in this comment letter), we again propose the project's use of a highly qualified, independent and unconflicted, professional environmental consultant, or BAAQMD specialist or engineer, with relevant expertise to ensure use of and compliance with the Event Center's air quality mitigations and to ensure the use of all reasonable, feasible options (including renewable diesel) for every day of the project's construction process.

VII. The Lead Agency's Efforts on Behalf of the Applicant To Force Reduced BAAQMD Emission Offset Fees Jeopardizes the Project's Emission Reductions

17 [LC-AQ-1]

[8] City and County of SF; press release dated July 21, 2015; http://sfgov.org/news/2015-07-21/green-city-mayor-announces-use-renewable-fuel-city-fleet
[9] Contra Cost Times; Sep. 9, 2015; http://patch.com/california/walnutcreek/walnut-creek-switches-city-fleet-renewable-diesel-fuel

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At FEIR pg. 13.13-67 the Lead Agency appears to have rejected NOx offset fees estimated for the Events Center project, provided by BAAQMD:

> SF Planning has been in communication with BAAQMD with regard to its suggestion that a higher fee may be warranted to offset project emissions to a less than significant level and found that BAAQMD could not establish that an increased rate beyond that of the Carl Moyer Program plus a five percent administrative fee could meet the "rough proportionality" standard required under CEQA.

No evidence is provided in the FEIR that identifies the criteria used by SF Planning to determine that costs for the Applicant's emission credits provided by the BAAQMD would be unable to meet the "rough proportionality" CEQA standard; this information must be provided for the public's review.

At SDEIR pg. 5.4-41, M-AQ-2b appears to have been written to require the Event Center's use of BAAQMD NOx credits:

> "Mitigation Measure M-AQ-2b would require the project sponsor to pay an offset mitigation fee to the BAAQMD to fund emissions reduction projects that would reduce emissions of ozone precursors to below the applicable thresholds."

17 [LC-AQ-1] cont.

Based on information found in the FEIR, it appears that the Planning Department and BAAQMD have not resolved their disagreement on the costs for offsets to be provided by BAAQMD. It also appears that the Lead Agency has designed the above-referenced measure such that the project must acquire 17 tons (appearing to be underestimated based on comments noted elsewhere in this comment letter) of ozone precursor emission credits from BAAQMD. Found primarily at FEIR pg. 13.13-66, the Lead Agency appears to have indicated its intent to require the Events Center Applicant to pay no more than average emissions credit value established under the statewide Carl Moyer program. Nothing, however, requires that a local air district charge that value or less for emissions credits it establishes under the Program, nor can it since the average cost-effectiveness program values are established by actual supply-and-demand factors that float with market conditions that differ regionally and over time. The BAAQMD cannot be forced by the Lead Agency or the Applicant to provide credits at a price they feel is reasonable based on statewide or other averages. Further, lower cost tons in Sacramento or the San Joaquin valley are not relevant to the case at hand because the geographical equivalent of the "rough

proportionality" CEQA argument the Lead Agency has made would prevent their use for the Events Center project.

It seems that the Lead Agency clearly has the cart before the horse now. It first established that the project must purchase emission offsets from BAAQMD, but then later decided that their fees were not in "rough proportionality" (without providing any evidence or criteria as to what they consider "rough proportionality") to the value of those same credits sold in other locations of the State—despite that the dollar values of those 17 tons of precursor emission credits to be found in Sacramento or the San Joaquin valley or elsewhere were made irrelevant by CEQA's requiring that mitigation and impact be co-located as closely as possible. Notwithstanding the Lead Agency's discourse that carries across both FEIR pages noted above, the FEIR's response never settles the uncertainty of whether the BAAQMD will provide what the Lead Agency believes are the necessary tons of offsets needed by the project or how the Applicant's fees of $321,646 will buy those tons that the BAAQMD has indicated that it will sell for appreciably more. As written, the FEIR has failed to settle the issue and provide the reasonable level of certainty that the project's emissions will actually be mitigated to less than significant levels beginning with construction startup. This is not acceptable under CEQA, and it is not appropriate that the Lead Agency attempt to dictate what market-based emission offsets/credits that it does not control are worth.

17 [LC-AQ-1] cont.

VIII. Emission Offsets Required for the Project May Be Unacceptably Short-Lived

At FEIR pg. 13.13-67, the Lead Agency has not responded substantively or meaningfully to our earlier-expressed concern that emission offset credits for the Events Center project, created with short-term emission projects, will fail to provide durable emission benefits for the Events Center across its lifetime. Nothing in CEQA provides that short-term credits of several years duration would be adequate to offset the Events Center project across its 30 – 50 year lifetime, nor has the Lead Agency provided any evidence to the contrary. From FEIR pg. 13.13-67:

> Another commenter states that the offset amount presented on page 5.4-41 of the SEIR would only offset a single year of emissions. This assertion is incorrect. Emissions offset programs replace existing high-polluting engines with cleaner more efficient engines and the incremental benefit of these replacements are realized for successive years into the future until the original engine would have reached the end of its useful life or its operation is prohibited by regulation (e.g., California Code of Regulations, Title 13,

18 [LC-AQ-1]

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> Division 3, § 2449(d)(2) (in-use off-road diesel regulation)). Other offset programs, such as the shoreside power unit implemented by the Port of San Francisco pursuant to the Final EIR for the 34th America's Cup and James R. Herman Cruise Terminal and Northeast Wharf Plaza (Case No. 2010.0493E) continue to offset hoteling emissions of diesel ships in dry dock at Pier 70.

As noted elsewhere in our comments, the BAAQMD is required by Events Center EIR to provide precursor emission reductions to offset the 17 tons estimated in the EIR as required for the project[10]. However, whether those credits are produced by the BAAQMD or another entity proximate to the project area, the FEIR fails to require that they be derived from long-lived projects. As currently written in the EIR's M-AQ-2b, it is possible that BAAQMD will fund short-duration projects with the Events Center offset fees, or, based on our expressed concerns that BAAQMD offsets may not ultimately be acquired for the project due to SF Planning's disagreements with them over offset values, another credit-generating project approved by the Lead Agency may deliver only short-duration benefits. This would not provide the long-term emission reductions needed for the Events Center's offsets.

In fact, the Moyer Program has funded projects that traditionally have provided emission credits for no more than an average of nine years, and the average life of all Moyer projects, including onroad projects of the type identified for possible application to the Events Center project, is seven years[11]. 2011 Moyer Program Guidelines require that the maximum project life for offroad compression-ignition equipment replacement projects is five years except that for excavators, skid steer loaders and rough-terrain forklifts the maximum is three years, and for crawler tractors, off-highway tractors, rubber-tired dozers, and workover rigs it is a maximum of 7 years[12]. Marine projects may be undertaken but with no more than a sixteen year life. Even at their longest, Moyer project emission credits purchased only once for the Event Center project will last no more than a minor portion of the project's planned lifetime.

18 [LC-AQ-1] cont.

[10] As noted elsewhere in this comment letter, we argue that onroad and offroad emissions for the Event Center EIR have been underestimated as a result of a double-claim for existing vehicle trip emissions attributed historically to the Oakland Oracle arena, and because mitigations for operational and construction equipment contain unacceptable flaws and, with M-AQ-1's requirements, those flaws result in unattainable and unenforceable components.
[11] CARB; 2006 Moyer Program Status Report, pg. 12;
http://www.arb.ca.gov/msprog/moyer/status/2006status_report.pdf
[12] CARB; 2011 Moyer Guidelines, Ch.7; pg. 7-5;
http://www.arb.ca.gov/msprog/moyer/guidelines/2011gl/2011cmp_ch7_07_11_14.pdf

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As currently devised, the Events Center EIR does not proscribe the purchase and use of short-term project (as little as one-year) emission offsets by the Applicant, nor does it prevent use of any combination of project emissions that would not match contemporaneously with Events Center significant emissions emitted at any point over its decades of planned life. Neither does the FEIR excerpt shown above provide information that disputes our previously submitted comment that mobile source credit-generating products, undertaken with Moyer funds, must be relatively short-term since project vehicles typically are rendered obsolete by new vehicles with lower emissions levels moving regularly into the marketplace. Rather than disputing our contention, the FEIR actually appears to have done no more than repeat it. This is not acceptable.

The Lead Agency has failed to define "successive years" in the excerpt above, nor has it identified a minimum project life for credits that it will approve for offsetting the Events Center significant emissions. Nowhere does the Lead Agency discuss purchase and use of successive emission reduction projects over the years so that the Events Center will always have adequate numbers of tons of reductions to offset its significant tons of emissions. Moreover, it has refused to prohibit use of short-term Moyer Project emission offsets that would last no more than a few years, despite the Events Center's emissions lasting decades longer. As currently written, M-AQ-2b provides no certainty that the project's tons of significant ozone precursors will be fully mitigated across their lifetime; in all likelihood, emission credits will provide no more than several years of emission reductions before their engendering Moyer projects expire.

18 [LC-AQ-1] cont.

For the reasons stated in this letter we believe that the Event Center EIR, amended after the DSEIR review, continues to reflect significant shortcomings that will result in unmitigated, significant, and excessive air quality impacts during the project's construction and then across its operational lifetime. Due to serious issues with M-AQ-1's construction, we believe that it cannot practicably provide the emission reductions claimed for it, and that the benefit of emissions from trips already on the books and associated with the Oakland Oracle Arena, to reduce the complement of all new Event Center trip-related emissions, is not acceptable under CEQA. In addition, serious questions remain regarding costs, availability, and sustained durability of tons of emission credits, likely underestimated due to flaws noted in this letter, that will be needed by the project to reduce its ozone precursor impacts to less-than-significant levels.

19 [LC-ERP-6]

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Autumn Wind Associates, Inc. 916.719.5472
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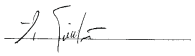
Should you have any questions regarding this comment letter, please feel free to contact me at your convenience.

Sincerely,



Greg Gilbert

O-MBA20L7

EXHIBIT D

O-MBA20L7

Law Offices of
THOMAS N. LIPPE, APC

201 Mission Street
12th Floor
San Francisco, California 94105

Telephone: 415-777-5604
Facsimile: 415-777-5606
Email: Lippelaw@sonic.net

August 13, 2015

By Facsimile #(415) 558-6409 and U.S. Mail Mr. John Rahaim, Director San Francisco Planning Department 1650 Mission Street #400 San Francisco, CA 94103	*By Facsimile #(415) 749-2525 and U.S. Mail* Commission on Community Investment and Infrastructure of the Successor Agency to the Redevelopment Agency of the City and County of San Francisco 1 South Van Ness Avenue, 5th Floor San Francisco, CA 94103 Attn: Custodian of Records for the Successor Agency to the Redevelopment Agency of the City and County of San Francisco

Re: Public Records Act/Sunshine Ordinance Request

Dear Mr. Rahaim and Custodian of Records for the Successor Agency:

This office represents the Mission Bay Alliance, an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project").

Pursuant to the California Government Code sections 6250 et seq and the San Francisco Sunshine Ordinance, Sec. 67.24, I request copies of the following records:

1. All records relating to monitoring or enforcement of compliance with mitigation measures adopted to reduce potentially significant air quality impacts of development projects approved by the City, the Redevelopment Agency of the City and County of San Francisco, or the Successor Agency to the Redevelopment Agency of the City and County of San Francisco, including any records reflecting audits of such compliance.

You may fully comply with this request by the traditional method of making the requested records available for inspection and copying.

Alternatively, you may fully comply with this request by both posting the requested records to the web page maintained by OCII at http://www.gsweventcenter.com/, and providing a written response stating the exact title of the hyperlink or hyperlinks on the web page that access the requested records.

EXHIBIT D

O-MBA20L7

John Rahaim
Custodian of Records for the Successor Agency
Public Records Act/Sunshine Ordinance Request
August 13, 2015
Page 2

Responsive records that are withheld from inspection should be specifically and separately identified in writing and accompanied by the claimed justification for withholding, as provided by California Government Code section 6255 and San Francisco Sunshine Ordinance Sec. 67.27, stating the nature of the document withheld and the basis for such withholding.

Should you contend that any portion of a particular document is exempt from disclosure, I request that the exempt portion be redacted and the remaining portions be produced. I reserve the right to object to any decision to withhold materials, or portions of documents.

I also request copies of public records in electronic form where available, and in hard copy where copies in electronic form are not available.

In accordance with Section 6253(c) of the California Government Code and Section 67.25 of the San Francisco Sunshine Ordinance, please respond to my request within ten (10) days.

Any questions regarding my public records act request should be addressed to the undersigned.

Thank you in advance for your prompt attention and timely cooperation on this matter.

Very truly yours,

Tom Lippe

Thomas N. Lippe

T:\TL\Mission Bay\Corr\PRA\PRA007a PRA to SF and OCII.wpd

O-MBA20L7

EXHIBIT E

Subject: Re: Public Information Request - air quality mitigation compliance monitoring
From: Tom Lippe <lippelaw@sonic.net>
Date: 9/30/2015 3:48 PM
To: "Oerth, Sally (CII)" <sally.oerth@sfgov.org>, "Lamorena, Christine (CPC)" <christine.lamorena@sfgov.org>
CC: Demetri Blaisdell <DBlaisdell@bsfllp.com>

Dear Ms Lamorena and Ms Oerth,

Thank you for your September 21, 2015, document upload to the Boies Schiller FTP site in response to my August 13, 2015, request for "[a]ll records relating to monitoring or enforcement of compliance with mitigation measures adopted to reduce potentially significant air quality impacts of development projects approved by the City, the Redevelopment Agency of the City and County of San Francisco, or the Successor Agency to the Redevelopment Agency of the City and County of San Francisco."

On September 11, 2015, you wrote: "In an effort to assist you, we can provide you with electronic documentation of a records search of some Planning Department projects within the past few years documenting compliance with mitigation measures for various development projects, mostly from private project sponsors along with the 1998 San Francisco Redevelopment Agency Resolution adopting environmental findings for Mission Bay North and South which includes mitigation measures."

On September 17, 2015, I wrote: "Before I answer your questions to narrow the search parameters, I think the most efficient way to proceed is for you to provide me with the "electronic documentation of a records search of some Planning Department projects within the past few years documenting compliance with mitigation measures for various development projects" referenced in your email below. "

The documents attached to this email are 6 of the 8 documents you uploaded on September 21, 2015. These 8 documents are not the type of documents I am looking for, nor do they appear to be "electronic documentation of a records search of some Planning Department projects within the past few years documenting compliance with mitigation measures for various development projects" referenced in your email below. "

Please advise.

Also on September 11, 2015, you wrote: "In an effort to help ensure that we are providing you with the specific records you are interested in reviewing, we would be grateful if you could further clarify your request by writing to Christine Lamorena and Sally Oerth with responses to the following questions."

Your questions and my responses follow:

EXHIBIT E

1. Do you have a specific start and end date for the records (i.e. only records after X date and before Y date)?

The last 10 years.

2. Can your request be narrowed to a particular geographical area or areas (e.g., Mission Bay)?

Downtown, Mission Bay, SOMA, Eastern Neighborhoods, Embarcadero and the Waterfront.

3. Are there particular types of "monitoring or enforcement" documents that you are looking for?

Yes. With respect to all construction projects in these areas for which the EIR identified significant air quality impacts from construction activities that could not be entirely avoided, the City, Redevelopment Agency, or the Successor Agency would have adopted mitigation measures to reduce the projects' significant air quality impacts and would have adopted a Mitigation Monitoring and Reporting Plan ("MMRP"). These MMRPs should have resulted in the generation of reports documenting the project's compliance, or lack thereof, with these adopted air quality impact mitigation measures. I want to obtain these reports.

4. Are there particular types of "development projects" in which you are interested?

All construction projects in these areas for which the EIR identified significant air quality impacts from construction activities that could not be entirely avoided, and for which the City, Redevelopment Agency, or the Successor Agency adopted mitigation measures to reduce the projects' significant air quality impacts and a Mitigation Monitoring and Reporting Plan ("MMRP")

5. Is there any other information that might narrow or more accurately focus our search for records?

Not at this time.

Thank you for your attention to this request.

Regards,

Tom Lippe
Law Offices of Thomas N. Lippe APC
201 Mission St., 12th Floor
San Francisco, CA 94105
Tel 415 777-5604 x 1
Fax 415 777-5606
e-mail: lippelaw@sonic.net
Web: www.lippelaw.com

CONFIDENTIALITY NOTE: This and any accompanying pages contain information from Law Office

On 9/17/2015 3:57 PM, Tom Lippe wrote:

Dear Ms Lamorena and and Ms Oerth,

Thank you for your response.

Before I answer your questions to narrow the search parameters, I think the most efficient way to proceed is for you to provide me with the "electronic documentation of a records search of some Planning Department projects within the past few years documenting compliance with mitigation measures for various development projects" referenced in your email below.

We will provide you with secure file upload credentials shortly.

Tom Lippe
Law Offices of Thomas N. Lippe APC
201 Mission St., 12th Floor
San Francisco, CA 94105
Tel 415 777-5604 x 1
Fax 415 777-5606
e-mail: lippelaw@sonic.net
Web: www.lippelaw.com

CONFIDENTIALITY NOTE: This and any accompanying pages contain information from Law Offi

On 9/11/2015 5:20 PM, Oerth, Sally (CII) wrote:

Dear Mr. Lippe,

In your request dated August 13, 2015 you ask for "[a]ll records relating to monitoring or enforcement of compliance with mitigation measures adopted to reduce potentially significant air quality impacts of development projects approved by the City, the Redevelopment Agency of the City and County of San Francisco, or the Successor Agency to the Redevelopment Agency of the City and County of San Francisco."

After beginning a search of our records, we have determined that this extremely broad request will require considerable City resources in order to respond. For example, a search of "all records relating to monitoring and enforcement" would require a search of all projects that have included mitigation measures and received environmental review clearance from the Planning Department or Redevelopment Agency (now OCII) since the California Environmental Quality Act was enacted in 1979. The City and Redevelopment Agency have approved hundreds, if not thousands of projects in that time. Records *relating* to monitoring and enforcement would not be limited to the hundreds or thousands of environmental documents themselves, but would conceivably include any document that even referenced air quality impacts or mitigation. In addition, many of these records are maintained offsite. The effort to retrieve off-site record for hundreds or thousands of projects, and search those records for any documents relating to air quality, will be time-consuming and unnecessarily involve use of scarce public resources.

The courts have applied a "rule of reason" to public records requests. See *Buck v. Gregory*, 65 Cal.2d 666, 676 (1967) (public records states are "subject to an implied rule of reason" and "inherent reasonablenesss limitations"). A department may apply this rule of reason when a request is so burdensome, persistent, or sweeping that it unreasonably impinges on a department's ability to perform its public duties. We would like to work with you in narrowing the request to identify the subject matter in which you are interested in order to conserve public resources. To that end, and in an effort to help ensure that we are providing you with the specific records you are interested in reviewing, we would be grateful if you could further clarify your request by writing to Christine Lamorena and Sally Oerth with responses to the following questions:

1. Do you have a specific start and end date for the records (i.e. only records after X date and before Y date)?

2. Can your request be narrowed to a particular geographical area or areas (e.g., Mission Bay)?
3. Are there particular types of "monitoring or enforcement" documents that you are looking for?
4. Are there particular types of "development projects" in which you are interested?
5. Is there any other information that might narrow or more accurately focus our search for records?

The more specific your request, the more likely you are to receive documents relevant to your research. In an effort to assist you, we can provide you with electronic documentation of a records search of some Planning Department projects within the past few years documenting compliance with mitigation measures for various development projects, mostly from private project sponsors along with the 1998 San Francisco Redevelopment Agency Resolution adopting environmental findings for Mission Bay North and South which includes mitigation measures. Please provide us with a secure file upload website to provide you with this documentation.

Please contact Christine Lamorena and Sally Oerth with any additional clarifications you can provide or any questions you may have regarding this process.

Sincerely,

The Office of Community Investment and Infrastructure
The San Francisco Planning Department

office of COMMUNITY INVESTMENT and INFRASTRUCTURE
OCII
Sally Oerth
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One South Van Ness Avenue, 5th Floor
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Attachments:

Mission Bay TMA 2009 Annual Report.pdf	14.9 KB
Mission Bay TMA 2010 Annual Report.pdf	625 KB
Mission Bay TMA 2011 Annual Report Final.pdf	604 KB
Mission Bay TMA 2012 Annual Report Final.pdf	416 KB
Mission Bay TMA 2013-2014 Annual Report Final 12 01.pdf	893 KB

Re: Public Information Request - air quality mitigation compliance ...

O-MBA20L7

Transportation Management Plan MBS.pdf 455 KB

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EXHIBIT F

O-MBA20L7

SMITH ENGINEERING & MANAGEMENT

November 2, 2015

Mr. Tom Lippe
Law Offices of Thomas N. Lippe, APC
201 Mission Street, 12th Floor
San Francisco, CA 94105

Subject: Responses to Comment on Draft Subsequent Environmental Impact Report for Event Center and Mixed Use Development at Mission Bay Blocks 29-32. SCN:2014112045

P15003

Dear Mr. Lippe:

Per your request, I have reviewed the Responses to Comment ("the RTC") on the Draft Subsequent Environmental Impact Report (hereinafter "the DSEIR") on the above referenced Project in the City and County of San Francisco (hereinafter "the City"). As I was a commenter on the DSEIR in regard to matters involving transportation and circulation in a letter dated July 26, 2015 which was transmitted as Exhibit 1 to your comment letter of July 27, 2015, my current comments focus on the responses to my own comments, those of yourself and affiliated consultant Larry Wymer. In addition, several others including representatives of BARTD, Caltrans, Caltrain, UCSF and other have filed comments that parallel and reinforce our own. I address the responses to those comments as well.

My qualifications to perform this review were thoroughly documented in my letter of comment on the DSEIR dated July 26, 2015 and are incorporated herein by reference.

My current comments follow. They are organized in the order the City chose to respond to my and others, not in order of comments or order of importance.

Section 13.11.3, Response TR-2a

This section, in part, replies to our comments now labeled by the City as O-MBA10L4-15 and O-MBA10L4-17.

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[LC-TR-1]

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Re MBA10L4-15:
MBA10L4-15 points out that while the DSEIR evaluated the Project's transportation *with* implementation of a Special Events Transit Service Plan in the context of *six* different event scenarios, it only evaluates the Project's transportation impacts *without* the a Special Events Transit Service Plan in the context of *only one* event scenario (without Giants game but with Basketball game). It requests the analysis *without* the a Special Events Transit Service Plan in the context of for *all six* of the event scenarios that were evaluated assuming the Special Events Transit Service Plan was in place.

There are several problems with the City's reply to this comment.

- The reply claims that the scenario of an overlapping evening game at AT&T Park with a Basketball event at the proposed Project without the Special Event Transit Services Plan taking place is a "worst-of-the-worst scenarios" that could only happen about 9 times a year, and then only if Muni were unable to deliver those services. However, with the Project located just a block from the emergency entrances to the UCSF hospitals, "worst-of-the-worst scenarios" are germane considerations for potential impacts on patient access to emergency facilities and the ordinary or special access/egress of emergency service providers.
- Despite the City's assertion that funding of Muni's Special Event Transit Services Plan is guaranteed, this funding is dependent on allocation of General Funds and discretionary transportation funds to this purpose, with such future allocations not guaranteed.
- The response also points to Mitigation Measure M-TR-18: Auto Mode Share Performance Standard and Monitoring as providing measures that could be implemented in the event Muni's Special Event Transit Services Plan is not implemented. However, many of the potential action measures in M-TR-18 are vague and conditional, and strict monitoring and enforcement is unlikely if the City through Muni has failed to deliver its promised Special Event Transit Services Plan.
- The response, although admitting no quantitative analysis of an overlapping Giants event at AT&T Park with an evening Basketball event at the Project and without implementation of the Muni Special Event Transit Services Plan was prepared, claims that the DSEIR essentially covers this situation for intersections and freeway ramps by having quantitatively analyzed the scenario of an evening Basketball Event with no Giants Event and no Special Event Transit Services Plan (Impacts TR-18 and TR-19) by virtue of having stated that these impacts would be additive to impacts in the "existing conditions without evening Giants event scenario" (Impacts TR-2 and TR-3) or to Impacts TR-11 and TR-12 (existing conditions with a Giants Event at AT&T Park). The problem with this is that the simple statement that the impacts are additive provides the public with no measure of the severity of the combined impacts.

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[LC-TR-1]
cont.

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- The response also notes that Impact TR-20 presents Muni transit impacts for the weekday evening Basketball scenario without an overlapping Giants game or implementation of the Muni Special Event Transit Services Plan and adds text stating as follows: "Impacts to the T Third and 22 Filmore would be in addition to the significant impacts identified for the proposed project with implementation of the Muni Special Event Transit Services Plan in Impact TR-13 for conditions with an overlapping SF Giants evening game." It then concludes, "The revision does not change the analysis or conclusions presented in the SEIR." The problem with this part of the response, like that related to the impacts on intersections and freeway ramps is that the simple statement that the impacts are additive fails to inform the public of the extent of the change in severity of the impacts.
- With regard to failure to consider cumulative scenarios that lack implementation of the Muni Special Event Transit Services Plan, this failure is not remedied by addition of text to the SEIR that specify that cumulative analysis for the Basketball game scenarios include assumption of implementation of the Muni Special Event Transit Services Plan. Since the SETSP is not guaranteed funding in perpetuity and there is no assurance that Muni vehicles and personnel resources will be able to be devoted to this special service in lieu of serving regular transit needs, this change in language does not relieve the deficiency of the SEIR's failure to consider the cumulative scenario in absence of the Muni Special Event Transit Services Plan.

20 [LC-TR-1] cont.

As a consequence of these flaws, Response TR-2a related to MBA10L4-15 is inadequate.

Re MBA10L4-17

Comment O-MBA10L4-17 is part of a stream of comment demonstrating why the DSEIR is inadequate for having unreasonably understated the amount of weekday evening arena event access travel would occur during the evening commute peak hour (see our comment now labeled O-MBA10L4-16 for related discussion). Responding to this apart from the related issues in O-MBA10L4-16 evades the compelling nature of the joint comments that the DSEIR has understated the numbers of weekday evening basketball event attendees actually traveling on the transportation system in the evening commute peak hour (5 to 6 PM).

As to the direct substance of the comment and response, the DSEIR's decision to base the analysis of weekday evening games on a presumed starting time of 7:30 was predicated on experience over 3 seasons when the Warriors were a poor to marginal team and games starting earlier in the evening (at about 6 pm) averaged only 2.5 games per season. The comment documented that based on the 2014/2015 season performance, the combined total of weeknight regular season and playoff games starting at 6 pm (the normal start time for nationally televised weeknight games played on the West Coast) could easily be 16 games per season

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over the next several years or beyond. The inadequacies of the SEIR reply are as follows:

- The reply notes that the 2 to 3 preseason and up to 16 postseason games - number variable - (and in actuality, though not admitted in the response, a number of regular season games as well) could have a 6pm weekday start time. It also admits that such games would worsen traffic in the weekday peak commute period from conditions reported in the SEIR (failing to admit also adversely impacting transit and also failing to quantify the increase in severity of impacts on weekday pm commute peak. It claims that these start times are driven by such factors as TV deals, other team's travel schedules and outcomes of postseason series that are beyond the abilities of the Warriors to control - although it is nonsense for the response to imply that those considerations make the Project's significant impacts in the circumstances of these earlier-start events any less significant.
- The response claims that the quality of the team will vary from year to year and claims that this will make the situation of large numbers of national telecasts that might start at 6 pm inconsistent over the time horizon considered in the SEIR. This is a speculation not consistent with precedent. Once a team has achieved an iconic status and national following (as the Warriors have done in the recent season with winning the league championship and the most valuable player award and with the shiny new venue comprised by the Project reinforcing that iconic status), the number of nationally televised weeknight games (6 pm starts) is likely to increase over the next several seasons, and to reoccur despite hiccups in individual seasons (witness the pervasive national attraction to the Lakers and Celtics despite several bad seasons, or, in another sport, Notre Dame football). Moreover, the project arena may be used for other major weekday capacity events such as the NCAA basketball tournament quarter- and semi-finals that would have start times dictated by national TV (that is, 6 pm). Hence, the response's conclusion that "it is unlikely that this scenario [a large number of nationally televised weekday games starting at 6 pm] *would occur on a regular basis during the time horizon addressed by the SEIR*" is non-factual, speculative and inconsistent with the good faith effort to disclose impact that CEQA demands.
- Finally, the response claims that "consistent with common practice in the transportation planning profession, the SEIR includes an analysis of the highest demand with the most frequent conditions for evening events ...". We agree that the 7:30 start time is probably the most frequent weekday evening start time likely to occur. But the SEIR is in error and misleading in proclaiming that it is consistent with common practice in the transportation planning profession to only study the high-demand situation that occurs most frequently. In fact, when a high demand scenario that is not the most frequently occurring but is one that occurs frequently enough to be significantly impactful, it is the common practice in the transportation planning

20 [LC-TR-1] cont.

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profession to study that frequent-enough circumstance as a separate scenario on a CEQA or other analysis. A good example of this is normal transportation planning practice with respect to major regional shopping centers. Studies are performed for an average weekday, and because shopping centers have their highest travel peaks on Saturday, for an average Saturday; these are the most frequently occurring peak conditions. But because shopping center travel has its highest peaks in the Thanksgiving to day-after-New Year holiday season and because the peaks in that approximately 38 day season occur frequently enough to be significantly impactful on their own and pose impacts of different severity than on the average weekday and average Saturday, normal transportation planning practice is to evaluate holiday shopping season weekday and Saturday impacts as separate scenarios. Another example is in the Napa Valley. There, it is the practice to evaluate a project's transportation impacts for the average weekday and average Saturday (which are the most frequently occurring impact situations) and to also evaluate impacts in the "crush" (harvest) season as a separate case as well because those impacts, occurring over a four to six week period are frequent enough and of such severity in comparison to annual averages to warrant consideration as a separate impact case.

- This matter cannot be dismissed as a disagreement among experts. A compelling argument that the SEIR should have evaluated a case scenario for weeknight capacity Basketball games starting at 6 pm is the fact that the SEIR did evaluate a scenario where there are an overlapping capacity Basketball event at the proposed Project and a Giants game at AT&T Park on a weekday evening. The SEIR claims that that type of overlapping event is likely to occur only about 9 times per year. It is obvious that, if a nine times per year occurrence rate is sufficient to require the SEIR to evaluate the Project in the context of that overlapping scenario, then the SEIR should also evaluate the weeknight 6 pm Basketball start scenario which is likely to occur more than 9 times per year in many years of operation.
- The fact that two hospital emergency entrances and the entries for emergency caregivers are located within a block of the Project site make the need for the SEIR to specifically evaluate impacts and mitigation in the 6 pm weekday event start scenario all the more compelling.

Hence, considering all of the above, the SEIR should have evaluated weekday Basketball events starting at 6 pm and is inadequate for not having done so.

20 [LC-TR-1] cont.

Section 13.11.3, Response TR-2b

This section purports to respond to our comments now labeled by the City as O-MBA10L4-2, O-MBA10L4-20, O-MBA10L4-39A and those of Caltrans (A-Caltrans-5) and others. These comments concern the SEIR's lack of analysis at intersections

21 [LC-TR-2]

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and freeway ramps that are on obvious approach and/or departure routes to/from and that are obviously or potentially capacity-challenged already.

The response begins by reciting the 6 freeway ramps and their related surface street intersections where analysis was conducted, a point not at issue in the comment. The key point of the comment is the locations the SEIR failed to analyze, not the places it did so. The reply continues, adding that the depth and approach is similar to other studies of completed and ongoing major project studies in San Francisco, and noting that the 1998 Mission Bay FSEIR did not address freeway ramp operations and queuing at all. However, what other studies did or didn't do is immaterial. What is material is what this SEIR should have studied but failed to do, and the response attempts to evade this.

The response continues for two paragraphs describing the configurations and conditions at the I 280 Mariposa off-ramp - one of the locations the SEIR did study. This section, not related to the issue of the ramps and ramp intersections that the SEIR should have but failed to study, concludes by observing that the LOS F conditions on the off ramp in the evening peak hour would be cured by Mitigation Measure M-TR-11c involving stationing a PCO at the ramp terminus intersection and waving traffic turning right to Mariposa eastbound through the traffic signal at the end of the off-ramp. But that conclusion is completely speculative. This commenter was a long term Giants season ticket holder at AT&T Park and this particular off ramp was on my normal route to the Park. The problem there is not that the signal causes queues to back up the ramp and onto the freeway mainline. It is that once a driver reaches the end of the ramp and has a green light, there is often no place to turn to on Mariposa because eastbound traffic is queued all the way back from Third Street. So placing a PCO there will be largely useless.

The response then discusses the I-80 westbound off-ramp to Fifth Street, and concludes that mitigation measure M-TR-2b, vague measures of unquantifiable effect to encourage travel by non-automotive modes would reduce the Project's impacts at this location. Again, this discussion of a location the SEIR did study is irrelevant to the issue that the SEIR should have but failed to study other locations - unless the implicit message is that, had it done so and discovered impacts, it would have just proposed vague, unquantifiable and ineffectual mitigations and declared the impacts mitigated.

Finally, after four lengthy paragraphs of largely irrelevant matter, the reply turns to the subject of the intersections and ramps that should have been studied and were not. The response notes that under CEQA Guidelines § 15130, defining the location or locations for study "*is within the lead agency's reasonable discretion*" and fundamentally claims that in defining what intersections and ramps were analyzed in this SEIR the City has exercised reasonable discretion. However, this assertion is undermined by content in the comments demonstrating that by prior and ongoing

21 [LC-TR-2] cont.

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studies in the general area and by common observation, the City knew or should have known that certain intersections and ramps in the SOMA and Mission Bay area that are on logical access and egress routes to the Project site are capacity challenged and are likely to be adversely impacted by the Project, yet it did not study them in the SEIR. Hence, rather than exercising "*reasonable discretion*" as required by CEQA Guidelines, the City, in failing to study these locations, abused its discretion and failed to undertake the good faith effort to disclose impact demanded by CEQA.

That the City has failed to exercise reasonable discretion in this matter is reinforced by two considerations.

- Two UCSF hospitals are located a block from the Project site. Many of the intersections and ramps on logical access/egress routes to/from the Project that, at the City's discretion, the SEIR failed to analyze are on the advised emergency access routes from various points in the City and region to the hospitals and are posted on the UCSF web site. In excluding these intersections and ramps, the City clearly ignored public safety impacts of that decision.
- The State of California Department of Transportation (Caltrans) has commented on the DSEIR as follows. "Project-related queuing impacts on nearby State facilities should be analyzed" (see comment now labeled in SEIR A-Caltrans-5). Caltrans clearly believes the DSEIR has not assessed impacts on a sufficient number of freeway mainline, ramps and ramp intersections that are likely to be impacted by the Project. Caltrans opinion is due the same deference in this matter as that of the City.

21 [LC-TR-2] cont.

The City's response continues, attempting to explain why individual or groups of intersections and ramps were excluded from study in the DSEIR. For example, the response cites 9 intersections along the Embarcadero and 15 along or east of Fourth Street that we claimed should have been studied. It claims that because the Project is shifted to its current location farther south-west from the originally proposed location on Piers 30-32, the primary routes to and from the Project site from Downtown, SOMA, the northern parts of the City and from the North Bay and the I-80 ramps would be shifted farther west, away from these intersections. But this is not true. Except for the relatively few instances in which there is a concurrent evening Giants game at AT&T park, the routes along the Embarcadero and along and east of Fourth Street remain the most effective and imageable routes to the currently proposed Project site and the parking facilities that serve it from much of the Downtown, SOMA, northern parts of the City, the North Bay and the I-80 ramps to and from the East Bay. Those paths are only likely to be altered on evenings with a concurrent Giants game. And if a massive shift of traffic further west was assumed in the City's thinking as it scoped the current SEIR and excluded the intersections along the Embarcadero and on and east of Fourth on that assumption, why didn't it add more intersections in the Eighth Street corridor (including but not

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limited to the ramps and intersections at Eighth and Harrison, Eighth and Bryant) and other intersections in the Van Ness, Franklin, Gough, Octavia corridors for example? The City has no good answer.

The response also claims that traffic passing through the Embarcadero intersections and the intersections along and east of Fourth would be less significant because a survey of baseball attendees at AT&T park *suggested* that many attendees who worked Downtown or in SOMA and drove to work left their cars at their commute parking locations and walked, used transit or took cabs to and from the ballpark. This type of data is of course irrelevant because those considerations should have already been taken into account in the SEIR's assumptions about mode split to the park from those districts. Moreover, this type behavior is likely to become increasingly uncommon as surface parking in those districts disappears and is replaced by parking garages that tend to close earlier than parkers could travel back to them at the conclusion of ballpark or arena events.

The response also cites new study of a single intersection, that of Eighth and Bryant as exemplar of why additional study intersections are not justified. This intersection is an anomalously complex intersection, and the effects of its complexities on traffic operations are difficult to replicate in theoretical delay/level of service calculations. Part of the complexity is that Eighth Street, which is one-way southbound north of Brannan becomes two-way south of Brannan. The complexity is compounded because columns that support I-80 as it crosses above Eighth between Bryant and Brannan are located in the center of Eighth Street and force southbound drivers that want to turn left at Brannan or go through or right there to pick the correct lane before departing the heavily congested intersection of Eighth and Bryant. Moreover, from this point of choice, drivers' views of what choices they must make before moving along Eighth toward Brannan are obscured by the columns and I-80 structure. In general, calculations of LOS at one location are poor predictors of delay/LOS conditions somewhere else. Moreover, in this case, the unique geometrics of the subject intersection and their unusual effects on driver behavior make the outcome of theoretical delay/LOS calculations anomalous rather than exemplar of anything elsewhere.

21 [LC-TR-2] cont.

The City's response is clearly grasping straws to avoid analyzing the full array of intersections and ramps that, in a good faith effort to disclose impact, the SEIR should have evaluated. The City's response to the subject comment set is inadequate, and in continuing to evade analysis of potentially adversely affected freeway segments, intersections and ramps, the SEIR is defective and unsuited for certification.

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Section 13.11.3, Response TR-2c

Response TR-2c replies to our comments O-MBA10L4-21 and -22, and those of others that the DSEIR understates transit and traffic impacts because it is based on outdated traffic and transit data unrepresentative of existing conditions at the time of filing the Notice of Preparation (NOP) for the SEIR.

The initial point in the response in Response TR-2c is to deny that the baseline data relied upon in the DSEIR was stale, and to claim that the City and its consultants took steps to assure that they relied upon data as up-to-date as feasible. This assertion is factually untrue.

Here we briefly review the facts of the situation, first with regard to transit data.

- The NOP for the Project was circulated on November 19, 2014.
- The data document relied on in the DSEIR transit impact analysis for Muni operations in the City states that this data was collected in the fall of 2010 and at some time in 2011.
- The data relied upon for services in the regional transit corridors serving the City was drawn from a SFMTA TEP project published in October 2012. Obviously, the regional transit corridor data published in that study reflects observations some time before October, 2012.
- Since those times of data collection, there have been a large number of development projects completed and occupied in the C-3, SOMA and Mission Bay and yet others were approved and under construction. In addition, the recovering economy has added considerable numbers of riders to the local and regional transit systems.

Clearly the transit data relied upon in the DSEIR was stale at the time the analysis was performed and this should have been obvious to the City and its consultants. Moreover, contrary to the claim in Response TR-2c that the City and its consultants took steps to assure that they relied upon data as up-to-date as feasible, new information released as part of Response TR-2c makes obvious that this is not the case.

- Several weeks before the DSEIR was circulated, the City issued updated summarizations of Muni patronage data and regional transit service data.
- Several weeks before the DSEIR was circulated, the City had BART patronage data that was very current – actually through April, 2015.

Yet the City did not update the transit analysis in light of this data before circulating the DSEIR or even acknowledge the existence of newer data in any way in that document. This is improper.

Response TR-26 does not present in full the new transit data set, the San Francisco Planning Department Memorandum *Transit Data for Transportation Impact Studies* dated May 15, 2015. Instead it presents a composite table compiled from the

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[LC-TR-3]

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information in the cited memorandum (Table 5.2-43) sourced to Adavant Consulting/Fehr & Peers/LCW Consulting and dated 2015. This composite table omits key data from the actual May 15, 2015 San Francisco Planning Department Memorandum (a copy of which is appended hereto as Exhibit 1) that indicate the data reflected therein were collected in 2013 for Muni operations and in 2012 for regional transit operations. This raises two key issues:

- Although the revised analysis presented in Response TR-2c is based on newer data, that data is also stale.
- In omitting, in the summary table published in Response TR-2c, the notations indicating the dates on which the newer data was collected, the response either deliberately or inadvertently misleads the public to believe the analysis in the response is based on current 2015 data, which it is not.

Although Response TR-2c mentions having BART's April, 2015 ridership data and claims to have relied on it, there is no evidence in the response of how and where the SEIR made use of it in any way. Although the City has placed the raw BART of April ridership data, ascribed to a May 1, 2015 submission by Val Menotti, Bart Chief Planning & Development Officer, on the SEIR web site, the transmittal narrative is not presented nor is its translation into the regional screenline format relied on in the SEIR. We hereby demand that the conversion of the subject BART ridership data release be provided to the Mission Bay Alliance and its consultants in the format of the regional screenline analysis of the SEIR and that the period of comment be extended beyond the date of its provision to allow adequate time for review and comment on its implications. We also note that BART's own letter of comment on the DSEIR (now Comment A-BART) in its second paragraph of comment (a paragraph the SEIR ignores rather than enumerating for response (see SEIR page COM-19) notes as follows: *"Given strong job expansion in San Francisco, BART has experienced unprecedented ridership growth (~25% over the last four years) which creates a number of peak period capacity challenges."* This statement clearly demonstrates that any reliance on regional transit data as old as 2012 (which the SEIR continues to rely on) is an inaccurate portrayal of the background conditions on which the Project imposes impacts. Response TR-2c claims to have used the April, 2015 BART data

Response TR-2c presents a reassessment of impacts on the 22 – Fillmore and the T-Third lines based on the purportedly 'new' baseline data set and finds that deficiencies on these lines are not Project impacts because the Project's contribution to ridership does not exceed 5 percent of total ridership at the maximum load points. However, this finding of lacking a ridership contribution in excess of 5 percent at the maximum load point comes about only because of the failure to consider the scenario of weekday Basketball event starts at 6 pm and the SEIR's illogical refusal to consider that there is an offset between the time attendees pass through the arena turnstiles and the time those attendees are traveling on and impacting the transportation system (see our comments O-MBA10L4-17, O-MBA10L4-7, O-

22
[LC-TR-3]
cont.

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MBA10L4-16 and our comments herein with respect to Response to Comments TR-2a and TR-2d. Had either or both the 6 pm game start scenario and the proper offset between arena turnstile passage time and time traveling on the transportation system been considered, there would be much more Project travel on the subject lines during the pm peak commute hour (5-6 pm) than is considered in the SEIR and significant impacts on these lines would be disclosed.

Response TR-2c claims that use of the updated transit data does not result in any changes to impact determination for Muni transit presented in Impact TR-4. This conclusion is incorrect and misleading because the analysis was not performed on *adequately updated* (still stale) transit ridership data and because it was performed without considering reasonable Project contributions to evening commute peak hour transit ridership (because of failure to consider a 6 pm game start scenario and failure to consider the offset between time riding transit and time passing through arena turnstiles for the 7:30 game start scenario).

Response TR-2c also opines that, since ridership figures for the 22 Fillmore and T Third routes were obtained from SFMTA and reflect City's plans for changing the 22-Filmore and completing the Central Subway by year 2020, the SEIR analysis for these lines accounts for development that occurred and is probable to occur through 2020. However, we note that the planning studies for those transit service changes on those lines were performed several years ago and the SEIR presents no clear evidence whether or not the SFMTA projections for those transit projects reasonably reflects the development boom that has occurred in the C-3, SOMA and Mission Bay in the intervening years and whether or not job infill in existing development due to a revitalized economy was reflected.

A final section of Response TR-2c attempts legalistic evasion of the issue of stale existing conditions data. This section starts by stating: "*Overall the transit impact analysis presents a reasonable representation of transit conditions based on available data for the Muni and regional transit providers and additional analysis is not required. Nor have commenters identified any flaws in the analysis that built upon the transit impact analysis."* This statement is contrary to fact. Four year old data collected at a time when the job and development economy was just starting to begin recovering from a period of stagnation and decline is clearly not representative of conditions after four subsequent years of aggressive development and job boom. And for our part, in our comment letter of July 26, 2015 comprises 27 pages identifying flaws in the analysis that are compounded by the flawed and outdated transit data base assumed as "existing" conditions in the DSEIR. The response goes on to state: *"Although a somewhat different, and yet technically plausible, approach might have been possible, the City's approach is abundantly supported by substantial evidence and represents a reasonable exercise of technical judgment. In general, a lead agency's determination regarding how 'existing physical conditions without the project' could 'most reasonable be measured' is 'quintessentially a*

22 [LC-TR-3] cont.

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discretionary determination". This statement misrepresents the issue in order to bend the framing of it to fit legal case precedents which are then cited in the response. However, this is absolutely not a technical disagreement about how to go about collecting or reasonably measuring existing transit conditions data. The issue is that the old transit data the City had on hand is simply not representative of the transit conditions that existed in late November, 2014 when the NOP was circulated.

With regard to the issue of stale traffic data (Comment O-MBAL4-21), Response TR-2c reiterates that the DSEIR adjusted the original counts to account for the opening of the UCSF Medical Center Phase 1 and the Public Safety Building that were nearing completion after the traffic counts were taken. This adjustment for those buildings was acknowledged in our comment O-MBAL4-21 and is not a matter of question. Response TR-2c goes on to state that subsequent traffic counts taken at three intersections in April 2015 confirm that the adjustments to the earlier traffic counts reasonably reflect the added traffic associated with the newly opened facilities cited above. This point is also not challenged in our comment, at least with respect to the three particular intersections counted. However, Response TR-2c then concludes: *"Because the adjusted volumes used in the analysis were similar to or higher than those collected in the field in April 2015, it can reasonably be inferred* [emphasis added] *that the traffic volumes used in the existing and existing plus project analyses also adequately reflect any changes that may be associated with newly completed projects further afield (e.g., in SoMa)."* The idea that this conclusion can reasonably inferred is utter nonsense. The DSEIR made no attempt to quantify what projects in northern Mission Bay, SOMA and the C-3 were completed after 2013 or nearing completion by early 2015, how much traffic they would generate and where most of that traffic would go and what study intersections it would affect. The intersections that were counted in April 2015 (Third with Sixteenth, Fourth with Sixteenth and Fourth with Mariposa) are indeed "*far afield*", being well to the southeast from new developments in northern Mission Bay, the SOMA and C-3 and are unlikely to be affected much by developments in those areas[1]. But other intersections in the Project's scope of study are much closer to those development areas and are likely to be considerably more affected by traffic generated by the uncounted developments there as well as increased traffic to/from those areas due to job growth within existing uses due to the improved economy. The April 2015 counts do nothing more than show the SEIR traffic adjustments for UCSF Medical Center Phase 1 and for the Public Safety Building came reasonably close to getting it right for those particular facilities and those particular intersections. They carry no inference for other new development and for other study intersections farther afield.

22 [LC-TR-3] cont.

[1] This is because traffic from northern Mission Bay, the SOMA and C-3 would likely take other routes journeying to and from the southeast that would not pass through the 3 intersections counted in April 2015.

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Because of these considerations, Response TR-2c is inadequate and the comment that the SEIR traffic baseline is stale remains unrefuted.

22 [LC-TR-3] cont.

Section 13.11.3, Response TR-2d

Response TR-2d concerns our comments now O-MBA10L4-7, O-MBA10L4-7, Caltrans (A-Caltrans-1) and others.

Our comments concern the fact that the DSEIR relies on turnstile data[2] on time of arrival at the Golden State Warriors current venue site (Oracle Arena) and other basketball venues to estimate how many attendees traveling to a game with a 7:30 PM start time would be traveling on the area transportation system in the 4 to 6 PM peak commute period versus in the 6 to 8 PM early evening peak shoulder period without considering the reasonable offsets between the time attendees enter the "paid" areas of the arena and the time when they were actually traveling on the transportation system.

Response TR-2d begins by stating as follows: *"For reasons explained below, the City disagrees with those comments and stands by its analysis, which reflects a number of evidence-backed, conservative assumptions. While some of the points raised in the comments seem intuitively believable, actual data from comparable situations show that the comments have exaggerated the likely numbers of people would arrive* [sic] *before 6 pm for a 7:30 pm event."*

23 [LC-TR-4]

Let us parse this introductory section of the response before moving to the further details.

Re: "*points raised in the comments seem intuitively believable",*

- It is undeniable fact that attendees occupy capacity on the transportation for a period of time that depends on the length of their journey and mode and that the period they occupy capacity on the transportation system occurs before the time they pass through the arena turnstiles.
- It is undeniable fact that even for attendees who go directly through the turnstiles into the paid section of the arena at the end of their trip to the site, there is a time offset between the time when they stop occupying capacity on the transportation system - when they debark onto the T Third platform, or the 22 Fillmore stop or find a parking place nearby or perhaps even start walking from BART, Caltrain or the other Muni-Metro lines - and the time they pass through the turnstiles.
- It is fact that some attendees wait outside the venue, perhaps to meet up with companions traveling separately (possibly to hand them their tickets, just soak in the atmosphere of the crowd arriving or for other reasons). So the

[2] The time attendees actually enter the "paid" areas of the arena.

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time these attendees occupy capacity on the transportation system is even more offset than those who enter the arena directly.

- It is fact that some choose to have drinks or meals at restaurants and bars outside the venue before entering the arena and that the offset between when these attendees occupy capacity on the transportation system and the time they pass through the arena turnstiles is even greater yet.

These considerations are not just "*intuitively believable"*; they are undeniable fact and the SEIR's analysis has failed to take them into account.

Re: "*the comments have exaggerated the likely numbers of people would arrive* [sic] *before 6 pm for a 7:30 pm event."*

The fact that time of arena event attendees' time on the transportation system is offset from the time they pass through the arena turnstiles for the reasons stated above is not a newly-discovered concept or theory; it is a fact the City and its consultants knew or should have known. It is the City's responsibility to have reasonably considered the offset factors in the SEIR and, based on that, reasonably estimated the number of arena attendees who would be impacting the transportation system during the evening commute peak hour in the case of a weekday evening arena event starting at 7:30 pm. We have made a reasoned effort to estimate how many attendee's travel to such an evening event would be offset into the evening commute peak hour. The City and its consultants have made absolutely no attempt to consider the offset factors in estimating impacts of travelers to a 7:30 pm arena event start on the transportation system in the evening commute peak hour. Hence, the City is in no position to opine that our reasonable estimate based on those offset factors is "*exaggerated"* since it didn't try to make such an estimate at all.

23 [LC-TR-4] cont.

Re: "*the City disagrees with those comments and stands by its analysis…"*

This is an attempt to transform what is a matter of fact into a disagreement among experts in the hope that courts will grant deference to the City's opinion in the matter. However, since this is a clear matter of fact, the response is inadequate and the City has refused to make the good faith effort to disclose impact that CEQA demands.

Here we consider of details of Response TR-2d.

Response TR-2d in the last paragraph of Volume 4, page 13.11-41 states:

"As shown in the table on SEIR p. TR-37 of Volume 3 of the SEIR, multiple basketball venues from various sources were evaluated to derive the arrival patterns at the

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> proposed project arena. Of these, two locations (Oracle Arena in Oakland and Barclays Center in Brooklyn) separately reported arrivals occurring more than one and a half hour prior to the start of a basketball game The remaining facilities reported all arrivals occurring more than one hour before to the start of a game, most likely because those occurring more than one and a half hour prior to the game represent a small fraction of the total attendance. The average percentage of arrivals occurring between 5:00 and 6:00 p.m. for those instances where arrivals occurring more than one and a half hour prior to the start of a basketball game (i.e., between 5:00 and 6:00 p.m. for a typical game starting at 7:30 p.m.) is less than 2.5 percent. Thus, to account for potential daily variability in arrival patterns, as well as the additional time it may take for attendees to enter to the event center after their arrival at the site or nearby vicinity, the SEIR conservatively assumed that more than twice as many attendees as the average (i.e., 5 percent) would arrive between 5:00 and 6:00 p.m."

This section of the response is misleading in several respects. Although Volume 3, page TR 37 presents 7 data sets obtained for 6 NBA basketball venues, examination reveals all of the data is turnstile entry data and only 3 of the data sets for 2 venues provided useful data measuring turnstile arrival times earlier more than 1.5 hours before game start time (which would definitely put travel by those attendees into the 5 to 6 pm evening commute peak period). One of those is for the Warriors at their current venue, Oracle Arena, and shows only 1 % of attendees arriving more than 1.5 hours before game start time. The other two are for the first two years of operations of the Barclays Center in Brooklyn which respectively showed 2.0 and 4.1 percent of attendees arriving more than 1.5 hours before the start of an evening basketball game.

23 [LC-TR-4] cont.

Let us put this data in perspective. The Oakland-Alameda Coliseum complex on which the Oracle Arena sits has a total of almost 10,000 parking spaces, more than enough spaces to accommodate the entire Arena capacity attendance if attendees arrived at two persons per car occupancy. This facility is noted for tailgating before basketball games as well as before other events. In addition, persons arriving at the complex by BART can readily be observed joining friends who drove and parked at their tailgates. Because of this, the observed 1 percent of attendees turnstile count for Oracle is probably under-representative of the numbers of attendees who actually arrive on the premises more than 1.5 hours before game start by a factor of 25- to 30-fold or so.[3]

The other data sets from Brooklyn show turnstile counts at the Barclays Center more than 1.5 hours before game start at 2 percent in the initial year and 4.1 percent in the second year of operation. These percentages likely reflect in part attendees unfamiliar with a new venue and adapting their pregame behavior as they become more knowledgeable. But neither of the two years turnstile data provides any

[3] We note that it would not have been difficult or costly for the City, its consultants or the Project sponsor to have taken aerial photos of parking at the complex 1.5 hours before game start and again some time after game start, counted the cars in each, and used the relative numbers as a reasonable surrogate measure of what percentage of attendees arrive 1.5 hours before event start.

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indication of how many of the attendees actually arrived in the vicinity of the Barclays Center more than 1.5 hours before event start (hence actually traveling on the transportation system in the pm commute peak period).

The SEIR takes these three data sets, averages them, finds them to be less than 2.5 percent of total attendees, doubles that to 5 percent and assumes that becomes a "*conservative*" estimate covering all the considerations why attendees might have arrived in the Project area 1.5 hours or more before event start (hence been traveling on the transportation system in the pm peak commute hour.). The problem with this is, there is nothing that connects the turnstile percentage of attendees entering the arena more than 1.5 hours before event start to the percentage who arrive near the venue site 1.5 hours before or indicates that double that turnstile count is a "*conservative*" estimate of that latter item. The claimed "*evidence backed, conservative assumptions*" the City claims to have made in this matter has no direct quantified or quantifiable relationship to the "*evidence*" the SEIR cites. The City, its consultants or the Project sponsor could easily have easily and inexpensively measured attendee arrivals to the Warriors current venue environs (the Oakland Alameda Coliseum property) via motor vehicle and BART, but they failed to do so. By 'deeming this unnecessary' as it does on page 13.11-42, Response TR-2d expresses preference for the SEIR's own unsubstantiated guess as to how many attendees of a 7:30 pm start basketball event are actually traveling on the transportation in the pre-6 pm evening commute peak hour rather than having reliably measured data. And that guess is highly favorable to the Project since the low number of travelers in it minimize the chance of Project impacts on the transportation system being disclosed for the pm commute peak hour. The response is inadequate and inconsistent with the good faith effort to disclose impact that CEQA demands.

23 [LC-TR-4] cont.

Section 13.11.3, Response TR-2f

Response TR-2f replies to our comments O-MBA10L4-3, O-MBA10L4-4, O-MBA10L4-23, O-MBA10L4-24, and O-MBA10L4-27. The first and fourth of these comments relate to the SEIR's failure to define the severity of the Project's traffic impacts. The second and third of these comments relate to failure to evaluate impacts at intersections under PCO control and the fifth relates to the SEIR's failure to account for the effects of train passage in the analysis of the intersection of Sixteenth, Seventh and Mississippi. Both of these latter matters also ultimately go to the issue of failure to define severity of impacts.

With regard to the failure to address changes in severity to impacts at locations already operating under conditions qualifying as impacted, the first three paragraphs of the response are padding, reciting definitions of LOS that are not in dispute in the comments. The next three paragraphs of the response on page are legalistic arguments about whether CEQA requires disclosure of distinctions in severity to

24 [LC-TR-6]

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impacts where conditions are already in a state considered impacted. Without engaging in the argument of legal matters, we can state that from an engineering perspective, distinctions in severity of impacts represented by changes in delay in the LOS/delay computations are highly significant. If the computations at a ramp or intersection already at LOS F show changes of a couple seconds of delay or so, this is hardly perceptible to drivers and is not indicative of meaningful change in severity of impact. But if the computations show changes of, for example, a half-minute or a minute or more, this is indicative of a dramatic change in severity that is highly perceptible and involves potential for queue blockages of additional lanes or upstream locations. Since the calculation procedures are capable of generating these estimates of delay and distinction of severity, this information should not be suppressed and ignored – doing so appears to be inconsistent with the good faith effort to disclose impact that CEQA demands.

The response goes on for four more paragraphs discussing the evolution of LOS computation techniques, the City's practices in use of them, and the technical meaningfulness of them. The single point in these paragraphs worthy of consideration can be summarized as follows: Calculation procedures to determine delay have been validated for instances where the subject location is below or slightly above capacity; in circumstances where capacity is greatly exceeded the validation is less strong and therefore the delay predictions are less reliable. We acknowledge this. But it is still clear if, say, an intersection or ramp is a couple seconds over the LOS F threshold in the existing condition and addition of project traffic computes to add a half minute or minute or more of delay, those are significant changes in severity. This is regardless of the fact, because of the lower reliability of the delay calculation in the LOS F zone, that if the traffic were actually added in the field and the changes in delay were measured, the results might be 27 seconds added instead of a half-minute or 55 seconds added instead of a minute.

24 [LC-TR-6] cont.

Response TR-2f continues for another page-and-a-half of irrelevant speculation that in the future, consideration of LOS/delay may be excluded from CEQA consideration. For the present, LOS is a CEQA consideration, the City has relied on it and that portion of the response can safely be dismissed.

Response TR-2f continues, replying to the issues in O-MBA10L4-4, O-MBA10L4-23, concerning failure to evaluate LOA/delay impacts at intersections under PCO control. This comment concerns specific tables in DSEIR Volume 1 that are explicitly identified in the comments, Tables 5.2-47 and 5.2-48, respectively located on pages 5.2-172 and 5.2-174. These tables have no entries for LOS or delay at certain intersections, with the normal space for delay and LOS entries in those tables filled with the notation "PCO Controlled". The response points to completely different tables, Tables 5.2-34, 5.2-35 and 5.2-36 as having delay and LOS entries for those intersection locations. This response evades the following questions:

- What is LOS and delay at the times these intersections are PCO controlled?

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- Does the SEIR conclude that PCO control mitigates significant impacts at these locations or do they remain significantly and unavoidably impacted?

The response is inadequate.

The final portion of Response TR-2f concerns the apparent lack considering the effect of Caltrain train movements on delay and LOS at the intersection of Seventh, Sixteenth and Mississippi. The response confirms that the SEIR analysis did not attempt to analyze the effect of Caltrain train movements on the LOS/delay compiled for the intersection of Seventh-Sixteenth and Mississippi. It points out that the SEIR analysis shows that with the reductions in general traffic lanes associated with the 22 Fillmore Transit Priority project, together with Project traffic, with or without overlapping Giants games, this location would be at LOS F. It then claims that, because the computation of delay is less reliable when LOS F conditions are already evident, there would be no point to attempting to further quantify the situation with respect to the effects on the subject intersection by Caltrain movements on the immediately adjacent grade crossing of Sixteenth. This absurd response ignores and attempts to evade the key point of the comment which is that had Caltrain movements been considered, there is a good prospect the analysis might have shown that traffic on Sixteenth would queue to an extent that might obstruct the intersections of Sixteenth with Owens, Sixteenth with Fourth, and even Sixteenth with Third. Since these locations are on a critical emergency and regular access route to the UCSF hospitals it is imperative that such an analysis be done (a good case for micro-simulation) and the SEIR is critically deficient for having failed to perform it.

24 [LC-TR-6] cont.

Section 13.11.3, Response TR-2g

This response replies to our comments O-MBA10L4-3-13a and O-MBA10L4-18 which concerns the criteria the City uses to define impacts on transit.

To our comment that the ordinary transit impact criterion, ridership in excess of 85 percent of screenline capacity based on scheduled service, or by scheduled line service where an individual line evaluation is ordered, is unreasonable and unrealistic. Our reasoning is based on the fact that Muni rarely, if ever actually delivers the effective capacity of full scheduled service due to missed runs, bunching and skip-stopping and other issues related to lack of schedule reliability or on-time performance. The response describes how passengers are counted, but this clearly does not include those left standing at bus stops and LRT platforms. It also claims that the procedure takes into account the schedule reliability and on-time performance issues, but demonstrates no clear way that this is true. It also fails to address the issue that, when only a screenline analysis is performed, this assumes the excess capacity on one line is available to serve the excess ridership on another, while in reality, most people's travel patterns are well served by only a single line.

25 [LC-TR-7]

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The response then moves to a key issue, that the City has relaxed the normal threshold of impact from 85 percent to 100 percent of capacity for this particular Project. One of our criticisms is that relaxation of the normal threshold of significant impact for one favored project is inconsistent with the good faith effort to disclose impact that CEQA demands. The response's reply to this is that San Francisco already did the same for the 34th America's Cup competition event and New York City does it all the time for large special events. But the America's Cup competition is/was fundamentally different from the proposed Project in that it involved large-attendance spectator event competition occurring over just a few days in a single year; the Project involves events on over 200 days per year repeated over many, many years. Moreover, the fact that nobody noticed that the City changed the rules for that specific event does not make it right then and does not justify making a special change of the impact criteria for this Project or for any project. As regards to what New York City does for transit impact criterion with respect to large special events there, that is irrelevant to San Francisco.

A key issue identified in the comments is that while event-attendees may tolerate 100 percent-of-capacity crush loads (a justification the DSEIR used for the relaxed impact criterion), the problem is that this imposes a special misery on the people who are normal users of the affected lines at the times. Response TR-2g fails to address this relevant point. Furthermore, the issue of who the regular riders who are adversely impacted when special event attendees overcrowd and slow the operation of the affected transit lines has Social Justice implications. We explore this topic, which the SEIR fails to address, below.

Other commenters provide evidence that the community south of the Project site served by the T Third line is a disadvantaged community that is adversely impacted by the effects of transit services to the Project that create social justice issues unaddressed in the SEIR. Here we discuss transit operations considerations that lend support to the assertion that the SEIR has failed to address social justice issues.

- Regular users of the T Third will suffer unpleasant overcrowding due to event-goers in the pre-event and post-event periods, having to deal with scarcity of seating and uncomfortable sharing of standing space with boisterous pre-event goers and over-exuberant or angrily depressed (and often liquor-fueled) departing event goers.
- The City's decision to reduce the threshold of significant impact from the normal 85 percent of capacity to 100 percent of capacity exacerbates the overcrowding impacts on the regular user community.
- Special T Third shuttle services to the Project site that turn back near the intersection of Sixteenth and Third occupy time slots that could be filled by runs that serve the community to the south in this corridor.

25 [LC-TR-7] cont.

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- Heavy boardings and alightings associated with event arrival and departure travel increase station dwell times, slowing service to normal users south of the Project site. Delays associated with shuttle operation turn-backs do the same. Also, turn-backs tend to create big gaps in service south of the Project site, as is reportedly already evidenced as the result of Giants games.
- Reconstruction of the T Third station platform near the intersection of Third with Sixteenth to accommodate Project crowds, a reconstruction that will require over a year, will inevitably delay T Third services to the disadvantaged community to the south over the duration of the construction period. At times this may even require substitution of inferior bus services.

25 [LC-TR-7] cont.

All of these constitute transit operational reasons why the SEIR should have included a Social Justice Impact section that has not been provided.

Section 13.11.3, Response TR-2h

This response replies to our comments O-MBA5-6, O-MBA10L4-9, O-MBA10L4-10, O-MBA10L4-11. O-MBA10L4-12, O-MBA10L4-26 and O-MBA10L4-36 and those of others. The points of these comments are summarized as follows:

- The cumulative analysis, pegged to Year 2040, 25 years from now, is purely speculative.
- While a speculative look at conditions 25 years hence is not objectionable, overlooking a cumulative scenario 10 years hence misses the most active concerns of the current residents of San Francisco and the region, hence the SEIR is defective as an information document.
- Absent inclusion of a shorter time-frame cumulative analysis, the long-term cumulative analysis deludes the public as to the nearer-term cumulative consequences of the Project.
- Given the rapid pace of development approvals including frequent planning and zoning variances, a 25 year forward cumulative analysis based on General Plan development quantifications is irrelevant.
- The transportation planning forecast tool used to prepare the travel forecasts for the 2040 cumulative analysis has a greater validation error (by a factor of 2) than the threshold of Project cumulative impact.
- The City is actively planning massive changes to the transportation network that would substantially alter (seemingly to the Project's detriment and to make it more impactful) transportation conditions in the immediate Project vicinity and that are as reasonably foreseeable as the plan development totals relied on in the 2040 analysis. The SEIR has failed to assess these transportation network changes.
- The SEIR uses an improper baseline for assessing cumulative transportation impacts. It assesses the Project's impacts relative to 2040 conditions that are assumed to exist without the Project. Per CEQA, it should evaluate the Project's impacts, in combination with those of other present and

26 [LC-TR-8]

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reasonably foreseeable future projects on the existing environment. The essential difference is that what the SEIR has done is to compare a projection to a projection. CEQA requires comparison of a joint projection to a known (the existing condition). These are different things.

Response TR-2h begins with a laborious 4-page description of the City's ordinary practices in cumulative analysis and of the SF-CHAMP transportation model. The discussion fails to address any of the issues in the comments and, in particular, the SF-CHAMP model's calibration error being double the threshold of impacts that it is being relied upon to disclose.

Response TR-2h continues in an attempt to justify the distant year cumulative analysis as follows:

> The 2040 cumulative horizon year is preferable to shorter period because the 25 - year horizon year more accurately accounts for land use changes and their associated transportation network changes, as well as other planned transportation improvements. Future growth occurs according to the vagaries of variable economic conditions, development trends, changing sponsor development priorities, and legal actions that delay or curtail proposed development, and therefore, short - term land use growth patterns cannot be accurately predicted in five - year increments. In particular, redevelopment projects such as those included in the 2040 growth forecasts (e.g., Mission Bay Plan, Candlestick Point - Hunters Point Shipyard Plan, redevelopment of Pier 70 and Seawall Lot 337), often take longer than anticipated to be completed. For example, the Mission Bay Plan was anticipated to be substantially built - out by 2015, which is the cumulative analysis year for transportation conditions in the Mission Bay FSEIR; however, construction of development is still underway and the UCSF Mission Bay campus is anticipated to be completed by 2019. Nearby, the Candlestick Point - Hunters Point Shipyard Phase II Development Plan identified completion of about 3,100 residential units by 2017; however, only about 240 of the 3,100 residential units are anticipated to be completed by the end of 2015. Construction of development part of the Pier 70 project is anticipated to continue through 2030. Thus, because larger multi - year development proposals would be built over a number of years, a future cumulative analysis year considers completion of buildout of these projects. Therefore, the cumulative impact analysis presented on SEIR pp. 5.2 - 208 – 5.2 - 232 (i.e., Impact C - TR - 1 though Impact C - TR - 10) adequately reflects the proposed project's impacts in combination with other past, present, and reasonably foreseeable future projects, and a different or additional cumulative analysis year is not warranted.

This response begs the question: If all this is true, why didn't the City use a 50, 60 or 100 year period for the cumulative analysis. The response, although seemingly filled with factual information, is nonsense relative to the issues.

Also, nothing in the response addresses the final bulleted point above or its elaboration in the original comments. CEQA requires evaluation of the

26 [LC-TR-8] cont.

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cumulative condition, including the Project in combination with other foreseeable in comparison to the existing environment, not a comparison of two hypothetical future conditions.

26 [LC-TR-8] cont.

Section 13.11.6 – Response TR-5

This response relates to comments by BART (Comments A-BART-1, -4, -5, -7, -8, and -9) and ourselves (O-MBA10L4-19) supplying a station-level analysis of impacts on BART that was critically missing in the DSEIR. This station-level analysis provides completely new information, including Table 13.11-2, and conclusions that were previously missing. Consequently, the information should be available for review for the full 45 day review period in Recirculated Draft status under CEQA.

27 [LC-TR-11]

Section 13.11.6 – Response TR-8

This response replies to our comment O-MBA10L4-28 concerning truck loading. The response indicates that new (un-numbered and untitled) figures showing truck turning templates for each loading are presented with the response. It is not evident if and where the said figures are actually provided. Hence, the response is inadequate.

28 [LC-TR-12]

Section 13.11.6 – Response TR-9

This reply responds to our comment and those of others regarding access impacts to emergency vehicles attempting to reach UCSF hospitals located in the immediate vicinity of the Project. The response consists of a repetition and elaboration of the description of the ineffectual measures that prompted the comment rather than proposing clear mitigation to resolve the issues. We note that the critical traffic LOS deficiency at the intersection of Seventh, Sixteenth and Mississippi, which is on advertised emergency routes to the UCSF hospitals is unmitigated and that the SEIR analysis at this location has failed to consider the effects of train crossings of Sixteenth Street, which could cause traffic on Sixteenth to queue into the intersections of Sixteenth with Owens and Sixteenth with Fourth, which are intersections crucial to hospital access, both emergency and normal. The response is inadequate.

29 [LC-TR-13]

Section 13.11.6 – Response TR-10

This response, which concerns construction impacts, is merely a reprise of the inadequate information and findings in the DSEIR that prompted our and several other comments. Of particular concern is the failure to address construction impacts associated with the reconstruction of the LRT station by the Project site on Third

30 [LC-TR-14]

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Street, a reconstruction which poses impacts for ordinary traffic on Third Street, emergency vehicle traffic on Third Street and for operations of the T Third Muni LRT line itself, which may impose social justice transportation impacts on the disadvantaged communities located further south in the T Third LRT corridor. These social justice impacts in specific have not been addressed.

30 [LC-TR-14] cont.

Conclusion

Due to all of the foregoing and other issues not yet addressed in these comments, the SEIR transportation and circulation section is inadequate and unsuited for certification.

31 [LC-ERP-6]

Sincerely,

Smith Engineering & Management
A California Corporation

Daniel T. Smith Jr., P.E.

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EXHIBIT G

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November 2, 2015

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RE: Responses to RTC - Responses to Comments on the Draft Subsequent Environmental Impact Report- Event Center and Mixed Use Development at Mission Bay Blocks 29-32 (SCN:2014112045)

Mr. Lippe,

This letter summarizes my responses to the Response to Comments published on October 23, 2015. These are the professional opinions of Larry Wymer, licensed California Traffic Engineer (#1955).

OPINION 1 - The DSEIR's Transportation and Circulation analysis does not adequately analyze the entirety of the study area impacted by the development

OPINION 2 - The DSEIR's Transportation and Circulation analysis does not analyze impacted study intersections and ramps in the SoMa and North Mission Bay areas, most notably those between Market Street and King Street

I maintain the opinion that the study area should be expanded beyond those assumed within the SEIR to the SoMa area to incorporate relevant travel patterns which would exist for both the proposed project and the "the previous proposed arena site as described within the memorandum report titled *"Travel and Parking Demand Estimates for the Proposed Event Center and Mixed Use Development at Piers 30-32 and Seawall Lot 330"* which was dated August 9, 2013.

32 [LC-TR-2]

The RTC states that my comment:

> *"...noted that because some of the basketball game attendees would be arriving from the San Francisco downtown and Financial District areas, they would be required to pass through SoMa to arrive at the project site, so that additional intersections in the SoMa area would have to be evaluated. Mode of travel and place of origin surveys of baseball game attendees conducted by the SF Giants, as well as available parking occupancy surveys, suggest that many of those game attendees that drove to work at their jobs in the Financial District and SoMa areas, tend to walk, ride transit, or take a taxi to AT&T Park, leaving their cars at their commuter parking locations in order to avoid the evening commute congestion that*
>
> *typically occurs near I-80 and AT&T Park and having to re-park their cars at game-day rates. It is likely*
>
> *that a similar condition would occur with the proposed project, with many of those working in downtown*

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> *riding Muni or special event shuttles, and taking taxis or TNC vehicles2, such as Uber or Lyft to the event center, rather than driving and having to park again with limited space availability."*

The SEIR itself, as noted within Table 1 of my original comment letter (provided below) identified several corridors to/from the SoMa neighborhood with substantial trip percentages up to 32% of project traffic.

Table 1
Project Vehicle Trip Patterns to Major Parking Facilities
North Mission Bay & South SoMa

Figure	Page	Figure Title	Trip Assignment Along Roadway: Seventh St s/o Townsend St	Fourth St s/o Townsend St	King St e/o Third St	from WB I-80 to Fifth St
5.2-14A	5.2-95	Project Vehicle Trip Patterns to Major Parking Facilities - Inbound Weekday PM Peak Hour - No Event and Convention Event	18% / 22%	7% / 7%	5% / 11%	8% / 7%
5.2-14B	5.2-96	Project Vehicle Trip Patterns to Major Parking Facilities- Outbound Weekday PM Peak Hour - No Event and Convention Event	19% / 19%	7% / 12%	5% / 5%	8% / 8%
5.2-14C	5.2-97	Project Vehicle Trip Patterns to Major Parking Facilities - Inbound Saturday Evening Peak Hour - No Event	20%	8%	5%	9%
5.2-14D	5.2-98	Project Vehicle Trip Patterns to Major Parking Facilities - Outbound Saturday Evening Peak Hour - No Event	20%	8%	5%	7%
5.2-14E	5.2-99	Project Vehicle Trip Patterns to Major Parking Facilities - Inbound Weekday and Saturday Peak Hours - Basketball Game Without a SF Giants Evening Game	31% / 32%	13% / 13%	9% / 11%	29% / 30%
5.2-14F	5.2-100	Project Vehicle Trip Patterns to Major Parking Facilities - Outbound Weekday Late Evening Peak Hour - Basketball Game Without a SF Giants Evening Game	31%	13%	11%	20%

Source: "Event Center and Mixed Use Development at Mission Bay Blocks 29-32" DSEIR (June 5, 2015)

32 [LC-TR-2] cont.

It is not reasonable to discount the trips clearly represented by these trip pattern percentages established within the SEIR as irrelevant or unworthy of analysis because they may not be entirely comprised of trips within personal vehicles of those traveling through the SoMa area from the financial district. Even if attendees utilize alternate transportation such as taxis, Uber or Lyft, they will still be new trips added to the roadways which will potentially significantly impact intersections north of the area studied.

The RTC also states:

> *"The previously proposed center at Piers 30-32 was located at the intersection of The Embarcadero and*
>
> *Bryant Street, with very different access patterns compared to the proposed project."*

While true, generally the same level of traffic will be generated by both alternatives, and trips originating from the financial district would still be required to travel through the SoMa area. While admittedly traveling along some different arterials through the SoMa district, the previous analysis considered intersections within SoMa whereas the SEIR does not.

Please feel free to give me a call if you have any questions.

O-MBA20L7

Sincerely,

Larry Wymer & Associates Traffic Engineering

Larry Wymer, CA T.E. 1955

O-MBA20L7

EXHIBIT H

O-MBA20L7

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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November 1, 2015

Thomas N. Lippe
The Law Offices of Thomas N. Lippe
201 Mission Street, 12th Floor
San Francisco, CA 94105

Subject: Response to Comments on the Event Center and Mixed-Use Development Project at Mission Bay Blocks 29-32

Dear Mr. Lippe:

We have reviewed the October 23, 2015 Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 Project ("Project") Final Subsequent Environmental Impact Report (FSEIR), which includes responses to comments ("Responses") we made on the June 2015 Draft Environmental Subsequent Impact Report (DSEIR). The Response fail to address the potential for transport of PCB-contaminated sediment to San Francisco Bay. The FSEIR should not be certified until best management practices that are specific to the prevention of PCB transport in stormwater are included as mitigation.

PCB-Specific BMPs Need to be Identified

Our comments noted the detection of PCB in soil at the Project site and the need to implement measures during soil-disturbing construction activities to prevent the transport of contamination to San Francisco Bay via stormwater. Response HYD-2 simply states that stormwater BMPs for PCBs must be consistent with best available technology economically achievable to meet requirements of the California Construction General Permit (p. 13.21-12). However, the Response does not specify BMPs that would meet this requirement. It is key that certification of the FSEIR is upheld until BMPs specific to preventing the spread of PCB contamination are identified.

The San Francisco Bay PCB total maximum daily loads (TMDL) established by the San Francisco Bay Regional Water Quality Control Board (Water Board) call for stormwater agencies, including the City and County of San Francisco, to achieve wasteload allocations by 2030 for PCBs. The allocations are implemented through NPDES permits issued to Bay Area municipalities which are based on the premise that BMPs will reduce PCBs in stormwater runoff to the maximum extent practicable.

Because PCBs have been detected in Project site soils, and because the Project is located so close to the Bay, we commented on the need to better assess PCBs in soil that would have resulted from past land use. The Response makes no provisions for conducting that assessment and instead relies solely on the

33 [LC-HYD-3]

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idea that unidentified BMPs will suffice in reducing PCB-contaminated stormwater runoff. This is not good enough, especially with the understanding that PCB contamination in San Francisco Bay is a growing concern. In fact, San Jose recently sued Monsanto Corporation over liabilities for cleanup of PCB-contaminated stormwater that flows into the South Bay. A similar lawsuit was brought against Monsanto recently by the City of San Diego.[1]

As mitigation, the FSEIR should include the results of a full evaluation of PCB contamination in Project site soils. Soil sampling should be included as part of the evaluation to target areas where PCBs may have been released or spilled. The study should be conducted under the oversight of the San Francisco Bay Regional Water Quality Control Board to ensure investigation procedures are adequate in assessing PCB contamination at the Project site.

The FSEIR should also identify BMPs that will be effective in reducing PCB loading to the San Francisco Bay. The following measures have been identified in a "toolbox" by the San Francisco Estuary Institute as BMPs that would be effective in reducing loading of PCBs to the Bay.

- Source control BMPs:
  - Use of street sweeping to control sediment accumulation.
- Treatment control BMPs:
  - Use of infiltration trenches and basins to prevent or reduce stormwater runoff;
  - Use of swales, buffer strips, and bioretention to slow flow and increase sediment deposition; and
  - Using media filters, inlet inserts, hydrodynamic separators to trap sediment.

The FSEIR should reference this toolbox and should identify how these specific BMPs will be deployed and maintained. To ensure implementation of PCB-specific BMPs, the FSEIR should include language that would require the preparation of semi-annual reports to the City of San Francisco that would document the deployment and the maintenance of the BMPs.

33 [LC-HYD-3] cont.

Sincerely,

Matt Hagemann, P.G., C.Hg.

[1] https://en.wikipedia.org/wiki/Monsanto_legal_cases

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EXHIBIT I

O-MBA20L7

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November 2, 2015 BSK Project Number E0906601S

Soluri Meserve
Mr. Patrick Soluri,
1010 F Street, Suite 100
Sacramento, CA 95814

Subject: **Response to Comments Review**
Mission Bay Subsequent Environmental Impact Report
San Francisco, California

Dear Mr. Soluri,

At your request, we prepared observations for specified sections of the Response to Comments Review Mission Bay Subsequent Environmental Impact Report (DSEIR, "Response"). In preparing this document we have reviewed the responses for the following Water Quality sections HYD-3, HYD-4, as well as the associated UTIL-5, and UTIL-6.

In general, these new analyses and discussions do not appear to support the conclusions and findings, or provide adequate responses to the prior public comments in these Sections. Given the short time available for these comments, we would recommend requesting an extension to be able to more fully review the Lead Agency responses and their analyses from a technical perspective to be able to provide comments on more sections or expand on our comments. 34 [LC-ERP-6]

HYD-3 Water Quality – Waste Water System Improvements

The Response acknowledges that building schedules for other projects such as UCSF – Phase 2 Medical Center may result in wastewater system tolerance exceedances.

The commenter writes that:

"*While the system can currently accommodate project-related wastewater flows as discussed in Impact UT-5, the capacity of the Mariposa Sanitary Pump Station could be exceeded as future projects are implemented, including UCSF's Phase 2 Medical Center.*"

The respondent then acknowledges several assumptions outlined below.

- SFPUC will implement permanent pump station, etc. "as soon as feasible"
- Schedule for improvement is currently unknown
- Completion (of improvements) could occur aft the proposed project is operation

> *"It is assumed that the SFPUC will implement the permanent pump station and associated force main and conveyance piping improvements at the Mariposa Pump Station as soon as feasible, but the schedule for these improvements is currently unknown and completion could occur after the proposed project is constructed and operational. "*

Again, the Response assumes SFPUC would make necessary operational and piping changes to accommodate additional flows in the interim in order to remain in compliance with RWQCB permits. The respondent further states that system approvals by the RWQCB would ensure that water quality of the Bay would be protected. This appears to be an unmitigated project impact.

> *"In the event that additional future wastewater flows would exceed the pump station capacities before the needed wastewater system improvements could be completed, it is assumed that the SFPUC would make internal operational or piping changes to accommodate the additional flows in the interim in order to remain in compliance with RWQCB permit requirements. The interim system modifications would be subject to the approval of the RWQCB under the terms of the Bayside NPDES permit. Approval by the RWQCB would ensure that water quality of the Bay would be protected during the interim period. "*

The Response concludes that interim modifications are operation or internal and would therefore not result in any physical environmental effects.

> *"Any interim system modifications are assumed to be operational or internal to the existing pump stations and therefore would not result in any physical environmental effects."*

35 [LC-HYD-4]

The response defers water quality issues by saying this assessment was addressed in different sections of the DSEIR, however, acknowledged potential for wastewater systems capacity exceedance is by definition a water quality issue and a CEQA Utilities impact. The response even acknowledges this by presenting the SFPUC interim contingency plans outlining the wastewater re-routing system. If this plan proves insufficient as the result of system loading, etc., what happens to excess wastewater the system is not designed to handle? Either there will be upset conditions which will cause environmental impacts associated with sewage or there will be upgrades to the water treatment system(s) which have undisclosed environmental effects and no clear funding.

35 [LC-HYD-4] cont.

HYD-4 Changes in Effluent Quality

The respondent has simply laid out the statutory implications of failing to meet the terms of the NPDES permit. There is no evidence or guarantee that the terms will be met, and what steps would be needed to avoid the environmental impacts if they are not met.

36 [LC-HYD-1]

UTIL-6 Description of Interim Improvements

The response identifies that the interim improvements have already occurred and were not associated with the project, however further identifying that the proposed project would have needed the same improvements to accommodate the project. Yet, even more improvements will be required beyond the interim improvements:

> *"The SFPUC has concluded that long-term permanent improvements to the Mariposa Pump Station will be required in order to handle anticipated, cumulative future flows. As noted in Impact C-UT-2 of the SEIR (p. 5.7-15), the SFPUC has not identified a timetable for completing the long term improvements to the Mariposa Pump Station, and has not developed specific plans or designs for construction of the proposed improvements."*

The project appears to attempt to have it both ways, the capacity is sufficient, after having built the interim improvements for the current project, yet close enough to the physical limits of these improvements that it is likely to need significant re-engineering in the near, but indeterminate future. It appears that the project is attempting to avoid the current impact analysis and not have to deal with its cumulative impacts.

37 [LC-UTIL-2]

LIMITATIONS

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The conclusions presented in this Report are professional opinions based on the indicated data described in this report. This Report has been prepared in accordance with generally accepted methodologies and standards of professional practice.

No other warranties, either expressed or implied, are made as to the findings or conclusions included in the report. Conclusions and recommendations are intended only for the purpose, site location and project indicated.

Opinions presented in this Report apply to site conditions existing at the time of our study and those reasonably foreseeable. They cannot necessarily apply to site changes of which this office is not aware and has not evaluated. Changes in the conditions of the subject property may occur with time, because of natural processes or the work of humans, on the subject site or on adjacent properties.

Respectfully submitted,
BSK Associates

Kurt M. Balasek PG, CHG
Senior Hydrogeologist

Erik Ringelberg
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BSK

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EXHIBIT J

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November 2, 2015 BSK Project Number E0906601S

Soluri Meserve
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Subject: **DRAFT Biological Resources Response to Comments Review**
Mission Bay Subsequent Environmental Impact Report
San Francisco, California

Dear Mr. Soluri:

Per your request, BSK Associates (BSK) reviewed publicly available documents associated with the Responses to Comments Draft Subsequent Environmental Impact Report ("Response" and DSEIR respectively) on the Golden State Warriors Event Center and Mixed-Use Development at Mission Bay Blocks 29-32. BSK reviewed these documents for potential project impacts related to biological resources (following the California Environmental Quality Act [CEQA] Appendix G). The Responses to Comments Draft SEIR, and its related supporting documents were reviewed, and replied to as needed for clarification or rebuttal. Additional scientific and technical resources prepared by others were also reviewed as needed.

SUMMARY

In our opinion, the Responses by the Office of Community Investment and Infrastructure failed in part or in total to respond to our original analyses in several areas. In general, the biological elements of the Response (and provided supporting analyses) lacked technical foundation, ignored or misconstrued our analytical points, or conflated technically correct elements in such a way as to lead to incorrect interpretations. Response BIO-1, General Approach to the Analysis, was not addressed in detail since we believe that no substantive changes have been made to the Biology section and our prior comments still apply. Additional comments that relate back to the BIO-1 Response are also found in the following comments.

38
[LC-ERP-6]

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ECOLOGICAL CONDITIONS RESPONSE REVIEW SECTION 13.19 BIOLOGICAL RESOURCES

Response BIO-2: Setting

The response states, "The commenters' observations and review of ecological conditions are noted and are not inconsistent with the setting information presented in the Initial Study." (p. 13.19-11)

This assertion attempts to state that our prior analysis of the Project setting was correct, but still somehow incorrect. There is an open water body feature in the middle of the site that meets *both* state and federal wetland multi-parameter criteria, yet according to the Response this doesn't need to be fully described in the environmental setting or identified in the Project Description. This error in failing to provide and maintain an accurate site setting and its description continues through the analysis, and also within the findings:

"Portions of the site are unutilized, including a depressed area (measuring approximately 320 feet by 280 feet) created by an excavation and backfill associated with a prior environmental cleanup on the site." (COMMISSION ON COMMUNITY INVESTMENT AND INFRASTRUCTURE RESOLUTION NO. 70-2015, Adopting Finding 2. Project Site, no page numbers.)

The "depressed area" is also filled with water, that water is maintained permanently, and had to have a trench cut to it in order to drain the surrounding self-maintained wetland features. (See BSK prior comments, and BSK Wetland Delineation.) Furthermore, buried within the Response, there is a simplified description of the setting that includes the pond that is much more accurate than the Project Description, yet even that description still fails to identify its wetland characteristics. The effect of this continuing error in defining the environmental setting as it relates to wetlands, listed species and the habitats, is that the project impacts on the environment for the wetland and water features and their associated habitats are not disclosed in a manner that are either accurately identified or the project mitigated in any substantive way.

39
[LC-BIO-2]

For example, several thousand pages within the Response document it more clearly identifies that there is water in the "excavation" and it functions as habitat: "The aquatic habitat on the project site consists of an isolated ponded excavation less than an acre in size created by past soil remediation activities." and "Limited opportunities for colonization by either California red-legged frog or western pond turtle since soil remediation of the site was conducted in 2005 means that the likelihood for these species to be present are slim given the extent of development in the project vicinity and absence of nearby occupied habitat from which individuals could disperse to the project site." (p. 13.19-14)

The description of the environmental setting is inaccurate, it fails to identify that there are wetland features and aquatic habitat, and the public and certifiers would have no idea that these wetland features and habitat existed unless they poured through several thousand pages of contradictory descriptions.

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Response BIO-3: Special-Status Species and BIO-4: Sensitive Natural Communities

The Special-Status Response indicates that the provided multiple reconnaissance-level surveys are essentially equivalent to a protocol-level survey for attempting to identify that listed species do not occupy the site. This assertion is simply incorrect, as described by the very citations provided by BSK and the Response itself, and the provided analysis is replete with technical inconsistencies that again do not demonstrate the absence of listed species (WRA 2015[1]). This analysis is discussed in detail in the following section. The Sensitive Natural Communities response and its supporting analysis present a mischaracterization of the potential project impacts to listed species, the steelhead. No allegation was made by us that the interior of the site was suitable or subject to use by steelhead. Conversely, Critical Habitat which was not identified in the DSEIR, is now identified in the Response, but its ecological dimensions are mischaracterized.

The potential use of the site by other listed species was exclusive to as the California red-legged frog ([CRLF] *Rana draytonii*) and steelhead trout (*Oncorhynchus mykiss*). The report specifically does not assess the potential for use of the site by the western pond turtle (WPT). Therefore the Response mischaracterizes the study.

Site Surveys

The report does not provide the credentials and experience of the WRA wildlife biologist Claire Woolf, so it is impossible to ascertain the qualifications of this person. The report does not cite the use of the any survey methods or protocols, other than the site was 'traversed' on foot. For illustration, even the screening-level biological assessment of a site like this typically follows a variable intensity vehicular (to screen for sensitive bird species) and pedestrian survey to identify rare plants, to flush hidden and more secretive species and identify tracks, scat and burrows. In addition, even if the methods had been described, and protocols had been followed, the survey dates did not appropriately span the correct periods to assess for the (local) listed plant species.

Regardless, the efforts that have gone into this series of screening-levels surveys could have been protocol-level surveys completed by experts to definitively assess the site use by listed species. Protocol-level surveys are the only means by which a biological scientist can assert a negative species finding (absence). The protocol for floristic surveys, even if they had been completed, is clear: "a single field season does not constitute evidence(.)" (CDFG 2009; See Table 2 Special-Status Animal Species Reported or With Potential to Occur Near the Event Center and Mixed-Use Development Area at Mission Bay Blocks 29-32. P 13.19-15).

40
[LC-BIO-3]

[1] http://www.gsweventcenter.com/GSW_RTC_References/2015_1001_WRA.pdf

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For example, USFWS 2005 Survey Guidance for the CRLF was simply not followed. In cases where protocol-level surveys are unavailable, focused species-specific surveys (not to be confused with a focused survey that *only* looks for CNDDB listed species) by experts are the appropriate methodological approach. There is no evidence that this approach was followed either.

The report is silent on any aquatic species use, and on observations (or the absence of observations) for the CRLF and WPT. For example, a qualified biologist completing a survey for CRLF would have identified that there were, or were not, eggs, egg masses, tadpoles, or frogs visible; and, similarly, provide specific identification of the presence or absence of tracks/drag marks at/near basking locations for the WPT. The report is entirely silent on the aquatic community, which should have included the presence or absence of small fish, macroinvertebrates (aquatic insects), various worm species, and other prey sources. These are just a few of the types of observations that should have been made and why a follow-on species specific survey is different from a reconnaissance-level survey, and, why this precise approach was requested in our original analysis and comments.

It appears that the analysis uses protocol-level survey citations as inferential indications that these methods were applied, where they have not. The Response to Comments reiterates in the footnotes our earlier list of protocols and focused survey citations (See BSK 2015), yet again fails to apply these to the project as requested: California Native Plant Society (CNPS), 2014. Inventory of Rare and Endangered Plants (online edition, v8-02). Sacramento, California. http://www.cnps.org/cnps/rareplants/inventory/ (accessed September 10, 2014). CDFG, 2009. Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities. California Natural Resources Agency. November 24. USFWS, 2005. Revised Guidance on Site Assessments and Field Surveys for California Red-legged Frog.

40
[LC-BIO-3]
cont.

For example, following the above cited protocol explains both why wetlands are special status natural communities and how to survey for special status plants [CDFG 2009]:

> "Most types of wetlands and riparian communities are considered special status natural communities due to their limited distribution in California. These natural communities often contain special status plants such as those described above. These protocols may be used in conjunction with protocols formulated by other agencies, for example, those developed by the U.S. Army Corps of Engineers to delineate jurisdictional wetlands or by the U.S. Fish and Wildlife Service to survey for the presence of special status plants."

Furthermore, the survey protocol specifies:

> "It is appropriate to conduct a botanical field survey when:

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> Natural (or *naturalized*) vegetation occurs on the site, and it is unknown if special status plant species or natural communities occur on the site, and the project has the potential for direct or indirect effects on vegetation; or(.)" (*Emphasis added for clarity*.)

Yet, there is no evidence in the record that this special-status plant botanical survey was ever completed. The provided screening level effort only apparently reviewed the California Natural Diversity Database (CNDDB). Despite the admonition by the protocols, and the CNDDB's user agreement, that the use of the CNDDB is neither a substitute for a careful technical approach or all inclusive. For example, per the cited protocol, "every plant taxon that occurs on site is identified to the taxonomic level necessary to determine rarity and listing status." This was not completed, or if it was it, was not provided. These comments are simply provided for brief illustration, as it does not appear that the biologist intended to assert that the survey was anything more than a reconnaissance, as noted in the title. In any case the provided study and the CEQA analysis are not sufficient to determine the absence of the identified listed species and of assessing the potential environmental impacts on listed species.

Fisheries

For fisheries, the Response and the analyses mischaracterize the site and the designated Critical Habitat. The WRA report states that: "[the pond] is not conducive to the survival of steelhead due to elevated temperatures and low oxygen conditions evident by the dominance of filamentous algae in the depression. Steelhead would not be able to survive conditions such as those present in the depression." While those impressions are self-evident for steelhead trout, which are sensitive to environmental factors (and were never asserted by BSK to use the pond in the first place), the report makes no mention of the measurement of temperature or dissolved oxygen (DO) and neither of these can be visually estimated. Measurement of temperature and DO are easily and commonly accomplished in the field.

The Response, however, conflates these *ad hoc* field observations for trout with all other "aquatic species." The pond is not clearly suitable habitat for trout. However, there are aquatic plant species within the pond, and likely several other organisms, do use the ponds but those observations were not reported. Instead, the analysis in the Response makes a claim from literature: "Algae blooms occupy the entirety of ponded water within the depression. Such conditions can result in low dissolved oxygen concentration that is inhospitable and even lethal to aquatic organisms. "(p. 13.19-14) There are many kinds of algae, some are toxic, but most are not. However, the field work does not identify which algae occupy the pond, the DO concentration or temperature.

Critical Habitat

The Responses' second fisheries analysis goes on at length that aquatic Critical Habitat does not include the terrestrial potions of the site, and implies in one case and then contradicts itself later that the Bay bordering the site is also not steelhead Critical Habitat. The physical area described in the analysis as **"**excluded**"** is the surrounding watershed proper and not the Bay, which is unambiguously Critical

40 [LC-BIO-3] cont.

BSK

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Habitat and specifically the habitat which could be harmed by the project, as described in our original analysis (ESA[2]). There are Bays within the steelhead Critical Habitat analysis that have been specifically excluded, such as Suisun, but the *provided* analysis is simply incorrect *for San Francisco Bay*. See the analysis' cited NMFS letter: "Critical habitat was designated for CCC steelhead on September 2, 2005 (70 FR 52488) and includes PCEs essential for the conservation of CCC steelhead. Critical habitat in estuaries is defined by the perimeter of the waterbody as displayed on standard 1:24,000 scale topographic maps or the elevation of extreme high water, whichever is greater." (p. 28) The Bay is suitable and occupied habitat for steelhead "Steelhead of this size can withstand higher salinities than smaller fish (McCormick 1994), and are more likely to occur for longer periods in tidally influenced estuaries, such as San Francisco Bay." (p. 25)

Indeed the analysis identifies a single selection from the life history and impact analysis of the NMFS letter, ignoring the numerous other passages that describe potential migratory exposure to the site, ***while*** singularly failing to mention that one of the reasons for listing critical habitat is because habitat quality in the Bay had been impacted by projects such as the proposed arena: "Habitat degradation in the action area is primarily due to altered and diminished freshwater inflow, shoreline development, shoreline stabilization, non-native invasive species, discharge and accumulation of contaminants," *(*pgs. 37-39 and 40 respectively.)

There are the very same impacts that we have pointed out related directly to both the site-specific risk of contaminants degrading Critical Habitat, as well as clear cumulative effects from the project:

"The San Mateo HU is located on the coast immediately south of the Golden Gate Bridge and includes several small creeks including San Gregorio and Pescadero Creeks." "The Team concluded that these occupied areas contained one or more PCEs (i.e., spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs, including agriculture, agricultural and non-agricultural water withdrawals, urbanization, non-hydro dams, and road building and maintenance."

The issue of the Critical Habitat designation, within the Bay is clear:

"We now conclude that it is possible to delineate some estuarine areas in California (e.g., the San Francisco-San Pablo-Suisun Bay complex, Humboldt Bay, and Morro Bay) that are occupied and contain essential habitat features that may require special management considerations or protection. Such estuarine areas are crucial for juvenile salmonids, given their multiple functions as areas for rearing/feeding, freshwater-saltwater acclimation, and migration (Simenstad *et al*., 1982; Marriott *et al*. 2002). In many areas, especially the San Francisco Bay estuary, these habitats are occupied by multiple

40 [LC-BIO-3] cont.

[2] http://www.gsweventcenter.com/GSW_RTC_References/2012_1001_ESA.pdf

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ESUs. Accordingly, we are proposing to designate specific occupied estuarine areas as defined by a line connecting the furthest land points at the estuary mouth."

The Response analysis cites a letter from the National Oceanographic Atmospheric Administration - National Marine Fisheries Service (NOAA-NMFS) in an attempt to diminish the perception of the possible exposure of the fish to the site, by stating that the population splits its migration mainly to the north of the site, when instead it provides a perfect illustration of the sort of trustee agency review that should be considered for the project's impacts on the estuary's environment, *a concurrence letter which the applicant has failed to secure*. (p. 13.19-21) This is the sort of biological analysis (Biological Assessment) and concurrence letter that the project *should get* to establish its potential impacts on a listed fish and its designated Critical Habitat. The Response fails to identify that the applicant or Lead Agency can simply request this concurrence from the federal fishery agencies and thus settle this issue.

The analysis attempts to imply that somehow the listed steelhead trout, and its habitat, is somehow not germane by the proposed site development. This is despite its identification by NOAA-NMFS as using for foraging and migration, these waters having been federally designated Critical Habitat, and the listing and designation as a result of its population decline by exposure to development and toxics.

This logical hand waving is a result of the project's failure to even identify that it was adjacent to occupied critical habitat (see BSK's prior comments.) Instead, the cited analysis by ESA, now attempts to conflate the spawning habitat of the designated *stream* critical habitat with the project site. (ESA 2015)

40 [LC-BIO-3] cont.

For example: "San Mateo Bayside HSA…was excluded from designated critical habitat for Central California Coastal steelhead DPS." The analysis states that its conclusion "is further supported" by the finding that the San Mateo Bayside HSA was excluded, as if there was any relevance to that fact. We concur that the conditions of those blocks are not suitable for steelhead, they are unlikely to have occupied that site after Mission Bay was completely filled in, do not currently live on those blocks, and are unlikely to occupy the site until sea level rise/and or the predicted tsunami elevations are reached (see also BSK comments).

Nowhere has anyone attempted to state or otherwise imply that somehow the Mission Bay Blocks 29-32 are a migratory fish passage, are access to a spawning stream, or are an isolated lake capable of holding an steelhead Evolutionary Significant Unit. However, clearly, and without ambiguity, the site is adjacent to, and influences both directly and indirectly, designated, occupied, critical habitat. Also that, NOAA-NMFS has clearly identified that they migrate and occupy adjacent to the site in the San Francisco Bay/Estuary.

The analysis required to demonstrate the nature and the extent of the project's impacts to the aquatic environment and on listed fish populations under CEQA (IV Biological Resources, a) and their critical habitat (IV Biological Resources, f), has not been completed. We understand that there remain significant impacts, and that the project should complete a Biological Assessment and submit this to the

NOAA-NMFS and the California Department of Fish and Wildlife as a part of its analysis to either demonstrate that it has no significant impacts, or that it has impacts and has provided suitable mitigation, or made a finding of significant and unavoidable impact.

Sensitive Natural Communities

Similarly, the Response fails to adequately even define the Sensitive Natural Community at the site, completely ignoring the emergent wetland which was specifically identified by its own consultants (ESA 2014), as well as our prior analysis assessing Sensitive Natural Communities. Please note that there is limited Response provided for the whole list of BSK-identified communities, but focusing on just one:

> "California identifies one of these habitat types as sensitive: *Bulboschoenus maritimus* (Salt marsh bulrush marshes) Alliance, status S3[3] (S3 = Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.)" (BSK initial comments on the DSEIR.)

40 [LC-BIO-3] cont.

The Response states that the site does not qualify due to a lack of density of *Bulboschoenus maritimus* by simply asserting that the density is not enough, without any supporting analysis and then goes on to say that regardless, there is plenty of that particular Sensitive Natural Community in the Bay.

The Response does finally acknowledge that ruderal sites can be habitat for rare plants, but its study fails to follow the rare plant protocol identified in its own citations. (See CNPS And CDFG.) In fact, no evidence of the qualifications of the surveyor and experience with the listed rare plants is provided. Furthermore, the Response provided a specific rebuttal to its own prior comments that ruderal and impacted sites might not have rare plants. (p. 13.19-19) Indeed rare plants can be found in many settings that are not the historic, pre-urbanization ideal condition, which the Response even specifically identifies for one of the species in question, Franciscan manzanita (*Arctostaphylos franciscana*). This species was at a previously unidentified location within freeway median. Yet, even this finding of a rare plant in an unlikely, highly disturbed location is apparently not a cautionary discovery and the Response sees no need for an appropriate survey. By refusing to complete the proper, definitive surveys, and by ignoring documented Sensitive Natural Communities, the project has impacts that remain unanalyzed and thus unmitigated.

Response BIO-5: Wetlands

41 [LC-BIO-1]

The basic premise of the Response is that there simply is no reversion, since at any time the site could have been developed, and the pit filled in (p. 13.19-31). Again, as stated in the initial BSK assessment of site conditions, that particular line of argument fails to acknowledge again that the site was not

[3] https://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf

consistent with the Order and the Revised Remedial Management Plan (RRMP) at the time it did not backfill the pit [[grammer makes this unclear]] . The Response ignores the BSK rebuttal that by the DSEIR's own logic, no site could ever revert since all that is required to demonstrate that it was not reverted would be an assertion of future development potential. All of the discussion regarding waters definitions has already been rebutted by BSK's detailed analysis. No substantive new information has been provided by the Response. The only new information in the Response is that they believe that state wetland laws only apply to federal wetlands and waters, which BSK showed previously it does not, and state wetland law is vastly more expansive and subject to different, state authorities. (p. 13.19-34)

41 [LC-BIO-1] cont.

Response BIO-6: Avian Impact

Foraging habitat losses are dismissed out of hand, despite various consultant's bird observations, and a specific assessment of available replacement habitat provided by BSK in its comments. (p. 13.19-30, 13.19-47 and 48) Then the Response analysis goes on to identify that replacement habitat is going to be made available by the project: "…while not included under the project purview, the adjacent, planned Bayfront Park will likely include landscaped and natural areas that offer similar or improved foraging and cover opportunities for local birds that would offset any perceived habitat loss associated with the proposed project development." It appears that despite its protestations, the Project is attempting to mitigate for its impacts without disclosing the impact, thresholds, and the details of the relevant Mitigation and Monitoring. (p. 13.19-38 and 13.19-47 and 48)

Incremental, cumulative impacts to wetlands, foraging, and nesting habitat are exactly why CEQA has a cumulatively considerable analysis in order to identify and mitigate these losses. Even then, where the project identifies it could directly kill birds through its construction impacts, it still gets that mitigation wrong for ground nesting birds.

42 [LC-BIO-4]

MITIGATION MONITORING & REPORTING PROGRAM

43 [LC-HYD-5]

The DSEIR analysis, at a minimum, should have been fully developed to acknowledge the Clean Water Act (CWA) and Porter-Cologne (and other regulatory requirements), as well as the numerous state and federal wetland policies and regulations that apply to this site. It remains our opinion that the DSEIR continues to fail to identify and mitigate for the project impacts to waters and wetlands at the site; as well as the potential impacts to biological resources within and around the site through contact with hazardous waste. The following section goes into each of these issues in greater detail.

44 [LC-BIO-1]

The sole mitigation for the loss of the water and wetlands, habitat and Biological Resources, is as follows: (Initial Study Section E13)

> M-BI-4a: Preconstruction Surveys for Nesting Birds To the extent practicable, vegetation removal and grading of the site in advance of new site construction shall be performed between September 1 and January 31 in order to avoid breeding and nesting season for birds. If these

45 [LC-BIO-4]

> activities cannot be performed during this period, a preconstruction survey of ***onsite vegetation*** for nesting birds shall be conducted by a qualified biologist. (Emphasis added.)

Onsite vegetation is an inappropriate and overly narrow distinction. Birds nest on the ground as well as in shrubs and grasses, including species such as the previously identified juvenile killdeer (*Charadrius vociferous*) and Canada geese (*Branta canadensis*) which were observed at the site. Even the prior Response Section identifies that all birds nesting at the site should be protected from construction impacts: "Potential impacts to urban birds protected under the Migratory Bird Treaty Act and nesting in the excavations or vegetation within the entirety of project site are mitigated by implementation of Mitigation Measure M-BI-4a (Preconstruction Surveys for Nesting Birds), as discussed in the Initial Study for non-special-status wildlife. (See Initial Study, pp. 81-83.)" (p. 13.19-37) Although it also fails to identify the unvegetated, non-excavated areas, which comprise the majority of the site.

45 [LC-BIO-4] cont.

Finally, there needs to be a full protocol-level survey for the listed plants, including San Francisco manzanita (*Arctostaphytos franciscana*) during the appropriate season, to make an identification of the site's plants by an qualified botanist with field experience in the identification of that and other local listed species. If special–status species are identified at the site a Worker Environmental Awareness Plan should be put into effect.

46 [LC-BIO-3]

Stormwater Mitigation

The biological effects of stormwater on the environment are not properly analyzed. The offered responses to comments regarding stormwater mitigation are particularly ironic given that the site has demonstrably failed to maintain its Best Management Practices (BMPs) and has visible waste material literally clogging its stormwater drains. (See BSK comments.) The concept that simply stating that a BMP will work, without analyzing the nature of the impacts, and without maintaining those BMPs calls into question every part of the DSEIR that relates to sediment, toxins and wildlife exposures. For illustration, the BMPs at the site currently are not properly maintained and have been filled in or partly filled in with sediment, or breached completely. However, even if these sediment BMPs had been installed correctly and maintained, they do nothing for dissolved-fraction toxic chemicals. The project fails to implement the sediment BMPs correctly and does not even offer readily implementable BMPs for dissolved-fraction chemicals found at the site.[4, 5, 6, 7] Yet, the Response states unequivocally, "Any potential effects associated with contaminated stormwater runoff into San Francisco Bay would be avoided during construction through compliance with the Construction General Permit and implementation of a Stormwater Pollution Prevention Plan (SWPPP) as described in the Section 13.21, Response HYD-2." (p.

47 [LC-HYD-3]

[4] http://water.epa.gov/polwaste/npdes/swbmp/index.cfm
[5] http://water.epa.gov/scitech/wastetech/guide/stormwater/upload/2006_10_31_guide_stormwater_usw_b.pdf
[6] http://water.epa.gov/scitech/wastetech/upload/2002_06_28_mtb_wetdtnpn.pdf
[7] http://water.epa.gov/polwaste/npdes/stormwater/upload/nrc_stormwaterreport.pdf

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13.19-22) The SWPPP is solely intended to manage ordinary construction sediment and has no specific intent to manage hazardous waste, and in any case does nothing for dissolved hazardous chemicals. 47 [LC-HYD-3] cont.

LIMITATIONS

Our review was limited to the above-described aspects as they are identified in the project environmental documents provided or otherwise made available for review. Additional information related to the project may be available through other sources, but were not reviewed for the purposes of this analysis.

The observations, assessment and recommendations submitted in this report are based upon the data obtained from listed reports prepared by others, limited field investigation, and site observations. The report does not reflect variations which may occur beyond the assessed area. BSK's services were be performed in a manner consistent with the level of care and skill ordinarily exercised by other professionals practicing in the same locale and under similar circumstances at the time the work is performed. No warranty, either expressed or implied, is included. The findings of the field observation may have a potential for negative impact(s) on the value or suitability of the site for some purposes. BSK cannot assume liability for any such negative impact(s). Permitting requirements or permit interpretations may change over time. The findings of this report are valid as of the present. However, changes in the conditions of the site can occur with the passage of time, whether caused by natural processes or the human-induced changes on this property or adjacent properties. In addition, changes in applicable or appropriate standards or practices may occur, whether they result from legislation, governmental policy, or the broadening of knowledge.

We appreciate the opportunity to be of service to Soluri Meserve and trust that this correspondence provides you with the information necessary at this time. Please contact us with any questions regarding the review comments presented this letter.

Respectfully submitted,
BSK Associates

Erik Ringelberg
Senior Scientist
Ecological Services Group Manager

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EXHIBIT K

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Technical Memorandum

Subject: Proposed Warrior Arena Wetland Features
Date: July 16, 2015
To: Soluri Meserve
1010 F St, Ste. 100
Sacramento, CA 95814
From: BSK Associates
BSK Associates
3140 Gold Camp Drive, #160
Rancho Cordova, CA 95670
Re: BSK Project Number E0906601S

The purpose of this memorandum is to provide description and an assessment of the site's waters and wetland conditions at Blocks 29-32, Mission Bay Project in San Francisco, California (Vicinity Map Figure 1).

BSK Associates (BSK) provided a screening-level site visit of the proposed project area to assess its condition from the public right-of-way, shown on Figure 2. A combination variable intensity, pedestrian and vehicular survey was made of the site perimeter and of areas of the project site clearly visible from the public right-of-way on June 30, 2015. The approach, assumptions, significance evaluation, and results are summarized below.

SITE OBSERVATIONS

The proposed project footprint consists of two large paved areas (Southwest parking lot approximately 79,910 sq.ft./1.83 ac. and Northeast parking lot approximately 91,776 sq.ft./2.11 ac.)[1] currently being used as paid parking lots; an area of soil stockpiles (31,066 sq.ft./0.71 ac) on the eastern edge of the property (Terry A. Francois Boulevard); and an adjoining large open field, open water (22,115 sq.ft./0.51 ac) and wetland swale complex, (904 sq.ft./0.02 ac.) (closest to the Southwest parking lot) shown on Figure 2. A series of photographs were taken of the site and the adjoining areas (Attached Photo Plates).

At the time of observation, the open water area encompassed the majority of the water feature, with a patchy, but substantial fringe of palustrine emergent (predominately alkali bulrush [*Bolboschoenus maritimus*]) and riparian plants (willows [*Salix sp.*]). The visible forb layer was

48
[LC-BIO-1]

[1]2015 Google Earth

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typical of this sort of site. The plants were concentrated on the two narrow ends of the water feature. The narrower channel and the seasonal wetlands apparent from the aerial photographs (Figures 2a-i) were not clearly visible from the site perimeter fence(es).

Numerous native birds were observed within, and in some cases flying to and from the water body. Several Canada geese (*Branta canadensis*) were seen, including what appear to be adult plumage juveniles; three killdeer (*Charadrius vociferous*), including two juveniles; a female mallard and a juvenile (*Anas platyrhynchos*); several crows (*Corvus brachyrhynchos*); two non-native Eurasian collared-doves (*Streptopelia decaocto*); and numerous non-native rock doves/pigeon (*Columba livia*). The site has significant use for nesting and foraging by these bird species.

WATERS AND WETLAND FEATURE HISTORY

The site is within the footprint of the historic Mission Bay, which has been filled in over time (ESA 2014; Pg. 1). The original Bay muds are still found below the site, as evidenced by the site soil borings (LTR 2015; Pg. 13 and Figures A-2 and A-3). The excavation intercepted local shallow groundwater and is evidently maintained by that natural source (LTR 2015; Pg. 14). The site also has seasonal wetland features which appear to be dominated by stormwater. It is not clear that these seasonal features would not be maintained for far longer in the spring, but they have been captured through an excavated trench apparently intended to drain them to the open water body (ESA 2014; Pg. 2). The site "remedial" activities thus captured the local water table and allowed for the expression of open water and wetland features (ESA 2014; Pg. 2). The ESA analysis goes on to specifically identify that the: "…deeper excavation and surrounding shallow depressions within the proposed project site are features that exhibit hydrology and vegetation characteristics of wetlands. Hydric soil is presumed present due to the year-round inundation and presence of obligate wetland plants." (ESA 2014; Pg. 3)

For additional purposes of comparison, BSK has provided a time-series of aerial photos of the site using Google Earth historic imagery for the period spanning 1938 through 2013 (Figures 2a, through 2i). The imagery provides a clear indication of vegetation through its distinct shape, and indications of both reflectance and morphology for water features. The time series does not provide information for the missing intervals, and so the relative changes of feature geometry (relative position and size) over time are used to confirm persistence of those features.

July 1938 - The site has numerous apparent industrial uses, ranging from warehousing and tank storage, to railroads (Figure 2i). There is a ruderal area on the site on the northwestern corner.

July 1946 - These conditions appear similar to 1938 (Figure 2h).

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[LC-BIO-1]
cont.

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June 21, 1987 - The site has similar activities, but with new buildings, less rail facilities and what appears to be a small concrete batch plant and material storage area on the western edge of the site (Figure 2g).

September 25, 2001 - These details are much clearer, with the inclusion of a large soil stockpile on the eastern edge of the site (Figure 2f). On October 5, 2005, the site has had most of the buildings removed and several large stockpiles, as well as a large parking area (Figure 2e). The apparent interception of the local water table in one of the excavated areas is visible (See WRA 2014; ESA 2014; and LTR 2015.

February 2007 - The large excavation and a single large water feature are visible, by March 2007, that feature was approximately 87,000 sq.ft./2 ac. (Figure 2d).

May 6, 2009 - There are two large parking lots visible and the main excavation has been filled through the middle such that it now has two features, and numerous small seasonal water features (Figure 2c). On April 3, 2011, the apparent open water and seasonal wetland features have naturalized with several areas of vegetation growing in around them (Figure 2b).

January 1, 2013 - The water features are again fully flooded and consist of two large wetted areas (Figure 2a). According to the aerial photograph, the total waters and wetland area was approximately 31,000 sq.ft./0.71 ac. on October 24, 2014. The available Google Earth historic imagery supports the history of water body formation and maintenance over time.

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[LC-BIO-1]
cont.

WATERS AND WETLANDS

The Clean Water Act (CWA) is the primary federal law in the United States governing water pollution and regulating water quality standards for surface waters. The basis of the CWA was enacted in 1948 (the Federal Water Pollution Control Act), but the Act was significantly reorganized and expanded in 1972. Both the US Army Corps of Engineers (USACE) and the US Environmental Protection Agency (USEPA) administer elements of these laws, but typically the USACE provides the waters and wetlands delineation protocols, administers the permitting program for wetland-impacting projects, and the USEPA provides oversight. Federal waters and wetland policy differs in several key regards from California, although there is much similarity. California also has a role in the CWA wetland permitting process through the 401 Certification process.

The term "wetlands" from a 404 perspective generally means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands typically include swamps, marshes, bogs, and similar areas. These are typically identified using a three-part test, examining the presence of water, wetland

(hydric) soil, and wetland dependent (hydrophytic) vegetation, following specific guidance(s). The federal CWA section 404(b)(1) Guidelines list both wetlands and mud flats as types of "special aquatic sites".

In California, the State Water Resources Control Board (State Water Board) is responsible for establishing policy on State waters and wetlands. The policy is implemented through regulations established by the State Water Board and nine Regional Water Quality Control Boards (in the site's case the San Francisco Regional Water Quality Control Board). The Boards also administer the CWA 401 Certification, which in some cases covers only portions of wetlands, and the Water discharge Requirements (WDR) for the non-Federal portions, if present. There are additional specific statutes and orders that also define or promote policy objectives regarding California's wetlands, such as EO-W-59-93[2] and California Department of Fish and Game Streambed Alteration Agreement, among others. In addition, Porter-Cologne Water Quality Control Act (Cal. Water Code, Div. 7) can apply to coastal wetland projects (§ 13142.5), in particular to unabated chemical discharges from construction or chemical waste stockpiles.

A wetland under California's regulations contains the following features:

An area that is covered by shallow water or where the surface soil is saturated, either year-round or during periods of the year; Where that water coverage has caused a lack of oxygen in the surface soil; and, has either no vegetation or plants of a type that have adapted to shallow water or saturated soil. Some examples are fresh water marshes, bogs, riparian areas, vernal pools, coastal mud flats and salt marshes.

In addition, wetlands according to the CA Coastal Commission are defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats (14 CCR 13577(b)). Furthermore, given the special salinity conditions associated with wetlands within the coastal zone, they also means lands which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens (Cal. Pub. Res. Code § 30121).

In this case, there are both a permanent water body and a seasonal feature (possibly a small complex) with wetland characteristics by the admission of the experts who prepared the

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[LC-BIO-1]
cont.

[2]http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/wrapp2008/executive_order_w59_93.pdf

environmental documentation for the project. These characteristics clearly meet the definitions contained in the various regulations, including 14 CCR 13577(b), Cal. Pub. Res. Code § 30121. The open water feature and its hydrophytic vegetation was verified in the field, and through the use of aerial photos, showing their presence over time, both by season and by year.

Federal Jurisdiction

Wetlands created by human actions fall under a couple of discrete classes under Federal jurisdiction. Most typically these are agricultural features that are caused by the movement of water from one location to another, such as a dam providing water to a canal constructed in uplands. In this case however, the site was originally a tidal mudflat or estuary wetland which has since reverted back to a wetland (ESA 2014). In addition, even if it was not originally a water or wetland, it currently meets those adjacency, and direct hydrologic connectivity requirements under the Final Clean Water Rule (2015; 33 CFR Part 328 and 40 CFR Parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401); and, even manmade wetlands and water bodies have restrictions on discharges under 33 CFR 323.4(b).

There are Federal exemptions for specific construction associated activities. These exemptions (33 CFR 323.4 - Discharges not requiring permits) are invalidated, however: "If any discharge of dredged or fill material resulting from the activities listed in paragraphs (a) (1) through (6) of this section contains any toxic pollutant listed under section 307 of the CWA such discharge shall be subject to any applicable toxic effluent standard or prohibition, and shall require a section 404 permit." (33 CFR 323.4(b)).

The site's water and soils include several chemicals identified under CWA section 307 as toxic pollutants (BBL 2006; LTR 2015). [3] Those chemicals include the following 12 Priority Pollutants found in the in the LTR Phase II (LTR 2015; Table 4 and Table 5):

1. Benzene
2. Naphthalene
3. Cyanide
4. Antimony
5. Arsenic
6. Chromium
7. Copper
8. Lead
9. Mercury
10. Nickel
11. Selenium
12. Zinc

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[LC-BIO-1]
cont.

[3] http://water.epa.gov/scitech/methods/cwa/pollutants-background.cfm

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Therefore, the site is *not exempted* under 33 CFR 323.4 because it contains 12 of the chemicals identified as priority pollutants under section 307.

The site's consultant, WRA, in a separate analysis, has attempted to claim exemption from the CWA under yet a different test (without identifying that any exemption is *invalidated* by the section 307 test described above (WRA 2014; Pg. 2)). WRA states that: "1986 (51 Fed. Reg. 41206) (e) Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States."

This explanation, instead of demonstrating how the site may be exempted as an incidental construction feature, provides documentation that clearly shows how that feature has been abandoned. Therefore the exemption also does not apply on that basis. The site owner's clear and continuing failure to backfill the feature and its abandonment for the past decade, despite being under Order No. R2-2005-0028 and its RRMP, is on its face abandonment and its clear reversion to the definition of waters, wetlands and/or other special aquatic site.

Indeed, there is no merit to the further argument made by WRA (Pg. 4) that: "As described in the RWQCB Order No. R2-2005-0028, the Project Area was to be excavated and backfilled in preparation for future development as part of the overall Mission Bay redevelopment plan." The site was not backfilled. It should be noted by WRA's argument there could never be a case for reversion under the CWA, because any naturalized feature would simply 'be ready' for some postulated future backfilling. The provided analysis fails to show: 1. How the feature has not reverted and 2. How the exemption override under 33 CFR 323.4 does not apply due to the presence of section 307 toxic chemicals. Regardless, WRA is simply silent on the open water and wetland features in context of the State water and wetland policy and applicable regulations.

California Jurisdiction

California does not have the same exemptions in its waters and wetland framework as exist under the CWA. California derives its authority from different sources (Porter-Cologne Water Quality Control Act) for its policies, and includes all man-made features under its jurisdiction. Therefore the site's water features, regardless of origin, appear to be regulated and protected waters of the State and wetlands.

SITE ABANDONMENT AND HAZARDOUS CHEMICALS

The site "remedial" activities captured the local water table and allowed for the expression of wetland characteristics and the site has naturalized over time (ESA 2014; Pg. 2). These activities have resulted in the creation of stockpiles of material that in some cases: "…contains

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cont.

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contaminants that exceed hazardous waste threshold concentrations and will require special handling and disposal." adjacent or near to these wetland features (TWR 2015; Pg 1). These activities took place over several years culminating in a Phase II remedial action that left the excavated area open and abandoned in 2005 (LTR 2015; Pg. 6). The Revised Risk Management Plan (RRMP, BBS; Pg. 2-3 and 2-3) infers that the excavation was backfilled, however, it was not.

The RRMP further identifies that: "1. Because North Terminal, Parcel X4, OAS and 16th Street East OUs are currently under development, interim risk management measures (IRMMs) designed for undeveloped parcels are not relevant to the protection of human health on those OUs. If development ceases or areas are created with uncovered native soils, IRMMs may again be necessary." (BBS 2006; Table 1) The development of the site still has not occurred, and there is no evidence that the IRMMs have been applied.

The site's open water and wetland features are thus a direct result from the abandonment of a site cleanup allowed to revert back to a natural state for approximately a decade. Not only did natural features evolve in response to this abandonment, but the very abandonment created conditions that may have exposed wildlife to a variety of hazardous chemicals (LTR 2015).

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[LC-BIO-1]
cont.

CONCLUSIONS

The site has active wildlife use, open water and various forms of wetland features according to our observations (as well as those observations made by others), and appears to be subject to both State and Federal regulations associated with the protection of these species, their habitat, and these features (ESA 2014). These regulations have several requirements that apply to the protection of wildlife and waters, including but not limited to, the Migratory Bird Treaty Act, the federal Clean Water Act, Section 404, and the State's various Clean Water Act responsibilities, and its own Porter-Cologne requirements. It is our opinion that the appropriate course of action for this site include:

1. The site owner immediately ceases the placement of any and all fill material, including hazardous materials, into any of the water and wetland features, until those wetlands have been delineated using the appropriate protocols; the appropriate State and Federal Permits have been secured; and, the appropriate compensatory mitigation has been implemented.
2. The site owner immediately ceases the uncontrolled runoff from the staged covered, and any hazardous material piles, into these features.
3. The protection of wildlife that occupy the site be established through the implementation of a Worker Environmental Awareness Plan, and that Plan includes protection breeding birds and their offspring.

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REFERENCES

BBL Environmental Associates [BBL], 2006. Revised Risk Management Plan, Former Petroleum Terminals and Related Pipelines Located at Pier 64 and the Vicinity, City and County of San Francisco, California. (August, 2006)

ESA Associates [ESA], 2014. Habitat Value Assessment at the Mission Bay Blocks 29-32 Project Site. (11/6/14)

Langan Treadwell Rollo [LTR], 2015. Phase II Environmental Site Assessment, Golden State Warriors Arena, Blocks 29-32, Mission Bay, San Francisco, California. (June, 2015)

WRA Consultants [WRA], 2014. Construction Related Depressions at Golden State Warriors Mission Bay Site. (10/1/14)

LIMITATIONS

The observations, assessment and recommendations submitted in this report are based upon the data obtained from existing reports prepared by others, limited field investigation, and site observations. The report does not reflect variations which may occur beyond the assessed area. BSK's services were be performed in a manner consistent with the level of care and skill ordinarily exercised by other professionals practicing in the same locale and under similar circumstances at the time the work is performed. No warranty, either expressed or implied, is included. The findings of the field observation may have a potential for negative impact(s) on the value or suitability of the site for some purposes. BSK cannot assume liability for any such negative impact(s). Permitting requirements or permit interpretations may change over time. The findings of this report are valid as of the present. However, changes in the conditions of the site can occur with the passage of time, whether caused by natural processes or the human-induced changes on this property or adjacent properties. In addition, changes in applicable or appropriate standards or practices may occur, whether they result from legislation, governmental policy, or the broadening of knowledge.

Respectfully submitted,
BSK Associates

Erik Ringelberg
Natural Resources and Land Planning
Group Manager

Kevin Grove
Staff Scientist

Attachment: Figures

BSK

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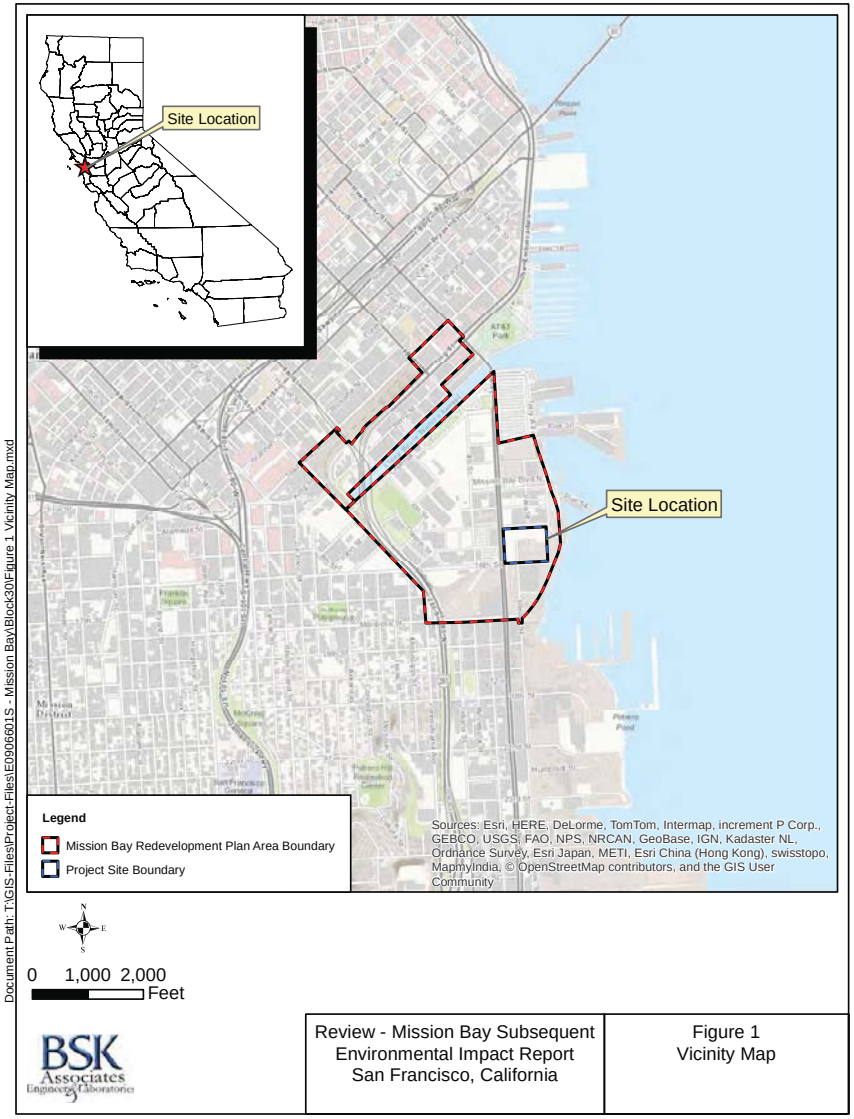

BSK Associates Engineers & Laboratories

Review - Mission Bay Subsequent Environmental Impact Report San Francisco, California	Figure 1 Vicinity Map

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BSK Associates Engineers & Laboratories

Review - Mission Bay Subsequent Environmental Impact Report San Francisco, California	Figure 2 Current Aerial Photograph

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Document Path: T:\GIS-Files\Project-Files\E0906601S - Mission Bay\Block30\Figure 2 Aerial Photo 2013.mxd

Legend
- Mission Bay Redevelopment Plan Area Boundary
- Project Site Boundary

Source: Google Earth Historical Images, January 1, 2013

0 150 300 Feet

BSK Associates Engineers & Laboratories

Review - Mission Bay Subsequent Environmental Impact Report
San Francisco, California

Figure 2a
2013 Aerial Photograph

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Document Path: T:\GIS-Files\Project-Files\E0906601S - Mission Bay\Block30\Figure 2 Aerial Photo 2011.mxd

Legend
- Mission Bay Redevelopment Plan Area Boundary
- Project Site Boundary

Source: Google Earth Historical Images, April 3, 2011

0 150 300 Feet

BSK Associates Engineers & Laboratories

Review - Mission Bay Subsequent Environmental Impact Report
San Francisco, California

Figure 2b
2011 Aerial Photograph

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Document Path: T:\GIS-Files\Project-Files\E0906601S - Mission Bay\Block30\Figure 2 Aerial Photo 2009.mxd

Legend
- Mission Bay Redevelopment Plan Area Boundary
- Project Site Boundary

Source: Google Earth Historical Images, May 6, 2009

0 150 300 Feet

BSK Associates Engineers & Laboratories

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San Francisco, California

Figure 2c
2009 Aerial Photograph

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Document Path: T:\GIS-Files\Project-Files\E0906601S - Mission Bay\Block30\Figure 2 Aerial Photo 2007.mxd

Legend
- Mission Bay Redevelopment Plan Area Boundary
- Project Site Boundary

Source: Google Earth Historical Images, February 2007

0 150 300 Feet

BSK Associates Engineers & Laboratories

Review - Mission Bay Subsequent Environmental Impact Report
San Francisco, California

Figure 2e
2007 Aerial Photograph

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Document Path: T:\GIS-Files\Project-Files\E0906601S - Mission Bay\Block30\Figure 2 Aerial Photo 2007.mxd

Legend
- Mission Bay Redevelopment Plan Area Boundary
- Project Site Boundary

Source: Google Earth Historical Images, October 5, 2005

0 150 300 Feet

BSK Associates Engineers & Laboratories

Review - Mission Bay Subsequent Environmental Impact Report San Francisco, California	Figure 2e 2005 Aerial Photograph

O-MBA20L7

Document Path: T:\GIS-Files\Project-Files\E0906601S - Mission Bay\Block30\Figure 2 Aerial Photo 2001.mxd

Legend
- Mission Bay Redevelopment Plan Area Boundary
- Project Site Boundary

Source: Google Earth Historical Images, September 25, 2001

0 150 300 Feet

BSK Associates Engineers & Laboratories

Review - Mission Bay Subsequent Environmental Impact Report San Francisco, California	Figure 2f 2001 Aerial Photograph

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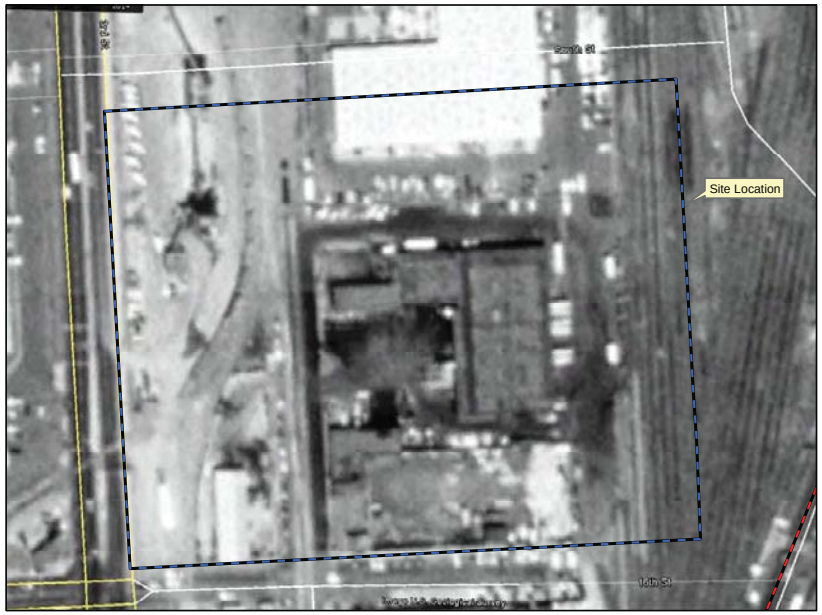

Document Path: T:\GIS-Files\Project-Files\E0906601S - Mission Bay\Block30\Figure 2 Aerial Photo 1987.mxd

Legend
- Mission Bay Redevelopment Plan Area Boundary
- Project Site Boundary

Source: Google Earth Historical Images, June 21, 1987

0 150 300 Feet

BSK Associates Engineers & Laboratories

Review - Mission Bay Subsequent Environmental Impact Report San Francisco, California	Figure 2g 1987 Aerial Photograph

O-MBA20L7

Document Path: T:\GIS-Files\Project-Files\E0906601S - Mission Bay\Block30\Figure 2 Aerial Photo 1946.mxd

Legend
- Mission Bay Redevelopment Plan Area Boundary
- Project Site Boundary

Source: Google Earth Historical Images, July, 1946

0 150 300 Feet

BSK Associates Engineers & Laboratories

Review - Mission Bay Subsequent Environmental Impact Report San Francisco, California	Figure 2h 1946 Aerial Photograph

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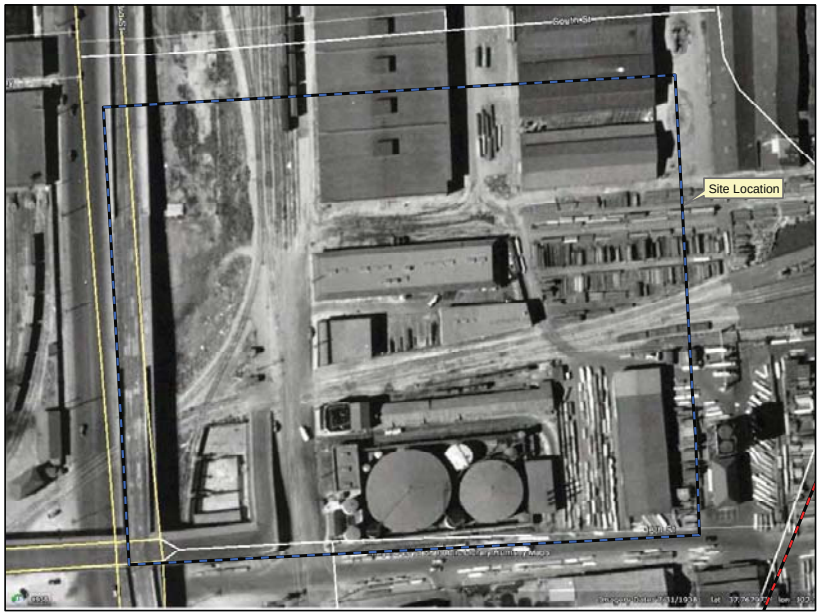

Document Path: T:\GIS-Files\Project-Files\E0906601S - Mission Bay\Block30\Figure 2 Aerial Photo 1938.mxd

Legend

Mission Bay Redevelopment Plan Area Boundary

Project Site Boundary

Source: Google Earth Historical Images, July, 1938

N
W E
S

0 150 300
Feet

BSK Associates
Engineers & Laboratories

Review - Mission Bay Subsequent Environmental Impact Report San Francisco, California	Figure 2i 1938 Aerial Photograph

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EXHIBIT L

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DRAFT WATERS AND WETLAND DELINEATION REPORT PROPOSED MISSION BAY DEVELOPMENT BLOCKS 29-32 SAN FRANCISCO, CALIFORNIA

BSK PROJECT E0906601S

PREPARED FOR:

SOLURI-MESERVE
1010 F STREET, SUITE 100,
SACRAMENTO, CA 95814

OCTOBER 29, 2015

ENVIRONMENTAL, GEOTECHNICAL, CONSTRUCTION SERVICES AND ANALYTICAL TESTING

O-MBA20L7

DRAFT WATERS AND WETLAND DELINEATION REPORT
PROPOSED MISSION BAY DEVELOPMENT PROJECT BLOCKS 29-32
SAN FRANCISCO, CALIFORNIA

Prepared for:

Soluri-Meserve
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BSK Project E0906601S

October 29, 2015

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ATTACHMENT A - RESUMES

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1. INTRODUCTION

BSK Associates (BSK) completed a waters assessment and wetland delineation under the direction of Soluri-Meserve for the proposed Mission Bay development project site (Blocks 29-32). The site is owned by the Golden State Warriors after a recent sale from Salesforce.Com, Inc. The purpose of the delineation was to identify potential wetland features within the project footprint. BSK is requesting a Preliminary Jurisdictional Determination (JD) for the purposes of verification of "waters" and the wetland features at this proposed project site. The purpose of this report is to provide supporting description and an assessment of the site's waters and wetland conditions at Blocks 29-32, Mission Bay Project in San Francisco, California (Vicinity Map Figure 1). The approach, assumptions, significance evaluation, and results are detailed below.

2. GENERAL SITE DESCRIPTION

The approximately 12-acre proposed project site (hereinafter the "site") is located in San Francisco, CA on bounded by 3rd, 16th and South Streets, and Terry Francois Blvd (to the east). This site has also been identified as parcel lots 29-32 within the greater Mission Bay South Development (Site Map Figure 2). The site vicinity and location figures are provided at the end of this report. The "Area of Potential Effect" (APE) is within the central and southwestern portion of the site. The site is bounded by urban development on all four sides, including parking lots on two sides (west and north). The eastern and northeastern sides of the site have staged piles of previously identified potentially hazardous materials (BBL 2006 and LTR 2015).

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[LC-BIO-1]

The terrain is nearly flat, although the western third of the site slopes steeply towards the pond area. The majority of the site is disturbed, with several large areas of barren soil, intermixed with low density non-native annual ruderal and grassland habitats. Within that disturbed area, there are wetland features which are further described in this study.

The APE contains features with wetland characteristics, including a series of swales (approximately 904 sq.ft./0.02 acre) that radiate from the east to the west into to an approximately 22,115 sq.ft./0.51 acre open water pond feature. This pond feature is located approximately 702 feet from the open water of the Bay, with the swales located between the pond and the Bay.

2.1 Waters and Wetland Feature History

The site is within the footprint of the historic Mission Bay, which has been filled in over time (ESA 2014; Pg. 1). The original Bay muds are still found below the site, as evidenced by the site soil borings (LTR 2015; Pg. 13 and Figures A-2 and A-3). The pond intercepts local shallow groundwater and is evidently maintained by that natural source (LTR 2015; Pg. 14). The site also has seasonal wetland features which appear to be dominated by stormwater influences. It is not clear that these seasonal features would not

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be maintained for far longer in the spring, but they have been captured through an excavated trench apparently intended to drain them to the pond (ESA 2014; Pg. 2). The ESA analysis goes on to specifically identify that the: "…deeper excavation and surrounding shallow depressions within the proposed project site are features that exhibit hydrology and vegetation characteristics of wetlands. Hydric soil is presumed present due to the year-round inundation and presence of obligate wetland plants." (ESA 2014; Pg. 3)

For additional purposes of comparison, BSK has provided a time-series of aerial photos of the site using Google Earth historic imagery for the period spanning through 2013 (Figures 3, 4 and 5). The imagery provides a clear indication of vegetation through its distinct shape, and indications of both reflectance and morphology for water features. The time series does not provide information for the missing intervals, and so the relative changes of feature geometry (relative position and size) over time are used to confirm persistence of those features.

May 6, 2009 - There are two large parking lots visible and the main pond feature has been filled through the middle such that it now has two features, and numerous small seasonal water features (Figure 3).

On April 3, 2011, the apparent open water and seasonal wetland features have naturalized with several areas of vegetation growing in around them (Figure 4).

January 1, 2013 - The water features are again fully flooded and consist of two large wetted areas (Figure 5). According to the aerial photograph, the total waters and wetland area was approximately 31,000 sq.ft./0.71 ac. on October 24, 2014. The available Google Earth historic imagery supports the history of water body formation and maintenance over time.

49 [LC-BIO-1] cont.

3. REGULATORY BACKGROUND

Any person, firm, or agency planning to alter or work in navigable waters of the U.S., including planning to discharge dredged or fill material, must first obtain authorization from the USACE. Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act of 1899 prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from the USACE (33 U.S.C. § 403). Section 301 of the Federal Water Pollution Control Act and Amendments of 1972 (CWA) prohibits the discharge of pollutants, including dredged or fill material, into waters of the U.S. without a Section 404 permit from USACE (33 U.S.C. § 1344). State Water Quality Certification may be required by the Regional Water Quality Control Board before other permits are issued. If a proposed project will result in the alteration of a California lake or streambed, the California Department of Fish and Wildlife (CDFW) require notification prior to commencement, and may require a Lake or Streambed Alteration Agreement.

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According to the Code of Federal Regulations, the definition of "waters of the U.S." includes:

> (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
>
> (2) All interstate waters including interstate wetlands;
>
> (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce.
>
> (5) Tributaries of waters identified in paragraphs (a) (1) through (4) of this section;
>
> (6) The territorial seas;
>
> (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6) of this section.
>
> (33 C.F.R. § 328.3)

49 [LC-BIO-1] cont.

This approach to the waters determination extent has been modified somewhat with recent revisions under the Clean Water Rule, now subject to litigation[1, 2]:

> (8) All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (3) of this section and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (a)(1) through (5) of this section where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section.

And, a more detailed nexus test:

> "(5) Significant nexus. The term significant nexus means that a water, including wetlands, either alone or in combination with other similarly situated waters in the region, significantly affects the chemical, physical, or biological integrity of a water identified in paragraphs (a)(1) through (3) of this section.

[1] http://www2.epa.gov/sites/production/files/2015-05/documents/fact_sheet_summary_final_1.pdf
[2] http://www2.epa.gov/cleanwaterrule/clean-water-rule-litigation-statement

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> The term "in the region" means the watershed that drains to the nearest water identified in paragraphs (a)(1) through (3) of this section. For an effect to be significant, it must be more than speculative or insubstantial. Waters are similarly situated when they function alike and are sufficiently close to function together in affecting downstream waters. For purposes of determining whether or not a water has a significant nexus, the water's effect on downstream paragraph (a)(1) through (3) waters shall be assessed by evaluating the aquatic functions identified in paragraphs (c)(5)(i) through (ix) of this section. A water has a significant nexus when any single function or combination of functions performed by the water, alone or together with similarly situated waters in the region, contributes significantly to the chemical, physical, or biological integrity of the nearest water identified in paragraphs (a)(1) through (3) of this section. Functions relevant to the significant nexus evaluation are the following:
>
> (i) Sediment trapping,
> (ii) Nutrient recycling,
> (iii) Pollutant trapping, transformation, filtering, and transport,
> (iv) Retention and attenuation of flood waters,
> (v) Runoff storage,
> (vi) Contribution of flow,
> (vii) Export of organic matter,
> (viii) Export of food resources, and
> (ix) Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species located in a water identified in paragraphs (a)(1) through (3) of this section."

However, that rule is held in abeyance and follows the historic application of applying relevant case law, applicable policy, and the best science and technical data on a case-by-case basis in determining which waters are protected by the Clean Water Act, until litigation over the subject matter is resolved.

Wetlands are defined as:

> "…those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."
>
> (USACE 1987, p. 9, citing Federal Register 1980, 1982)

The USACE and the Environmental Protection Agency issued the U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook on May 30, 2007, to provide guidance based on the Supreme Court's decision regarding *Rapanos v. United States* and *Carabell v. United States* (USACE, 2007a, p. 6).

49 [LC-BIO-1] cont.

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The decision provides new standards that distinguish between traditional navigable waters (TNWs), relatively permanent waters (RPWs), and non-relatively permanent waters (non-TNWs). Wetlands adjacent to non-TNWs are subject to CWA jurisdiction if: the water body is relatively permanent, or if a water body abuts a RPW, or if a water body, in combination with all wetlands adjacent to that water body, has a significant nexus with TNWs (USACE, 2007a, pp. 6 to 7). The significant nexus analysis assesses the flow characteristics and functions of the water on the "chemical, physical, and biological integrity of downstream traditional navigable waters" (USACE, 2007b, p. 6).

4. METHODOLOGY

BSK conducted a fenceline wetland delineation at the site on June 30, 2015. A combination variable intensity, pedestrian and vehicular survey was made of the site perimeter and of areas of the project site clearly visible from the public right-of-way. During the site visit, BSK staff followed to the wetland delineation process set forth in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0 (USACE, 2008) and verified using the adjacent zone's Western Mountains, Valleys, and Coast Region (Version 2.0). These methods include vegetation identification using the USACE State of California 2014 Wetland Plant List (USACE, 2014), including vegetation densities, soil classifications, plant species classification to the extent possible given the site access conditions. Some features could only be identified using desktop analysis of available aerial imagery. Because of documented hazardous wastes and the fact that permission to enter the site was not available, the BSK wetland scientist performed a visual survey from adjacent public roads and right of ways. Because of this limited access, qualified wetland scientists worked with BSK's GIS specialists to identify and estimate the extent of the features remotely, using topographic maps and aerial photography. Animal and plant species observed during the site visit are included in Table 1 at the end of this report.

49 [LC-BIO-1 cont.]

Wetlands were differentiated from uplands based upon visible hydrology, soil patterns, and vegetative characteristics, as well as observations by workers in a prior assessment (ESA 2014). The wetland boundaries were determined by site-specific characteristics that would result in the best representation of all three parameters using the available information.

5.1.1 Hyrodphytic Vegetation

Hydrophytic vegetation was evaluated by a field assessment and comparing plant species with the USACE State of California 2014 Wetland Plant List (USACE, 2014). This list determines the possibility of whether plants are found in wetlands, uplands, or both. After classification, the USACE "rapid test" was conducted to determine the hydrophytic vegetation parameter.

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5.1.2 Wetland Hydrology

It should be noted that the site was surveyed during a "drought year" (USBR, 2014). This requires "Difficult Wetland Situations" procedures (USACE, 2008). Surveys conducted during drought years require a slight variation in the approach to wetland delineation. This approach provides a better estimate of wetland potential based on the three parameters (wetland hydrology, hydric soils, hydrophytic vegetation) during a drought. Indicators A1, B1, B4, B6, B7, B8 and B10 were identified.

5.1.3 Hydric Soil

Hydric soils were not possible to assess given the nature of this assessment. However, ESA identified hydric soils but did not specify their Munsell color codes (ESA 2014).

5.2 Wetlands and Other Waters of the U.S.

Wetlands and other waters were described using the Cowardin classification system (Cowardin *et al*. 1979). As described above, approximate wetland boundaries were assessed by using the available characteristics and the supplemental features that demonstrated USACE characteristics for wetland and adjacent upland areas. All features that potentially met USACE wetland criteria were recorded as polygons and recorded on Figure 2. The boundaries of wetlands were extrapolated from the field map by following topographic contours, clear hydrologic boundaries, and wetland vegetation boundaries.

Cowardin's wetland classification is as follows, Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; 2 and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year (Cowardin *et al*. 1979).

Other waters of the U.S., were delineated using the methods described above and supported by the use of 'A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States' (USACE 2008a), and in USACE Regulatory Guidance Letter No. 05-05 (USACE 2005), where appropriate. These methodologies provided an approach for identifying the lateral limits of other waters of the U.S., using stream geomorphology and vegetation (USACE 2008a). Indicators of the ordinary high water mark (OHWM) evaluated in the field included natural lines impressed on banks, stain lines, depositional features, shelving, changes in soil character, changes in vegetation, destruction of terrestrial vegetation, and the presence of litter and debris. A clear debris line and shelf was visible.

49 [LC-BIO-1] cont.

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5. OBSERVATIONS

The approximately 12-acre site includes two large paved areas (Southwest parking lot approximately 79,910 sq.ft./1.83 ac. and Northeast parking lot approximately 91,776 sq.ft./2.11 ac.) currently being used as paid parking lots; an area of soil stockpiles (31,066 sq.ft./0.71 ac) on the eastern edge of the site (Terry A. Francois Boulevard); and an adjoining large open field, open water (22,115 sq.ft./0.51 ac) and wetland swale complex, (approximately 904 sq.ft./0.02 ac.) (closest to the Southwest parking lot) shown on Figure 2.

At the time of observation, the unvegetated, open water area encompassed the majority of the water feature, with a patchy, but substantial fringe of palustrine emergent (predominately alkali bulrush [*Bolboschoenus maritimus*]) and riparian plants. The visible forb layer was typical of this sort of ruderal site. The plants were concentrated on the two narrow ends of the water feature. The narrower channel and the seasonal wetlands apparent from the aerial photographs (Figures 3, 4 and 5) were not clearly visible from the site perimeter fence(es). Using the Cowardin classification, the pond feature appears to presumptively meet the Palustrine Aquatic Bed, algal class.

In terms of its biological use and wetland habitat function, numerous native birds were observed within, and in some cases flying to and from the water body. Several Canada geese (*Branta canadensis*) were seen, including what appear to be adult plumage juveniles; three killdeer (*Charadrius vociferous*), including two juveniles; a female and a juvenile mallard (*Anas platyrhynchos*); several crows (*Corvus brachyrhynchos*); two non-native Eurasian collared-doves (*Streptopelia decaocto*); and numerous non-native rock doves/pigeon (*Columba livia*). The site has significant use for nesting and foraging by these bird species.

The approximately 12-acre project site, where vegetated, is primarily non-native (ruderal) grassland habitat. The APE is almost exclusively compromised of the herb stratum. It is bounded by urban development on all four sides. The drainage patterns for the entire property are complex but from observations, including the aerial photos, it appears that the bare ground portion and parts of the paved parking lots provide the contributing watershed for the pond.

The western portion of the site contains the most visible potential wetland characteristics and therefore, it was analyzed for wetland characteristics within the APE (approximately 0.53 acres). The features are connected by a large ditch excavated to apparently drain the swale. The wetland surface is concave with a roughly rectangular shape in this area and approximately 30-40 feet across at the widest section.

Aerial imagery from 2008 and 2010 identifies the east of the pond with standing water. The seasonal feature is much larger than mapped because it appears that it has been newly drained into the pond feature through a large trench. This satisfies the wetland hydrology parameter "B7" and meets the wetland hydrology criterion. This plot was located within a seasonal wetland.

49 [LC-BIO-1] cont.

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6. DISCUSSION

As a part of the delineation process, a preliminary search of the relevant historic and modern records of the project area was completed by BSK. Those records include National Wetland Inventory (NWI) and Soil Conservation Service (SCS) maps and Federal Emergency Management Agency (FEMA) databases were conducted to evaluate if any documented wetlands were located on or near the site. The NWI and SCS databases do not identify wetlands or hydric soils respectively within the APE. This is because the site is identified as urban developed and non-natural conditions as a result of the historic filling of the Mission Bay. San Francisco has not yet completed FEMA flood maps of this area. Soil profiles were identified in the following report, LTR 2015, which verified that the site was developed on fill, placed over the Bay muds. The nearest open water to the project site is San Francisco Bay located approximately 702 ft. east of the project site.

San Francisco Bay is considered jurisdictional waters of the U.S. pursuant to Section 404 of the Clean Water Act (USACE, 1987, p. 2; 33 C.F.R. § 328.3). Mission Bay itself was an open tidal bay within the estuary, fully navigable and subject to use in international commerce. The bay was filled in a series of stages prior to the CWA (LTR 2015).

The site features are located approximately 702 feet from the nearest documented waters, tidal waters of the United States - San Francisco Bay, therefore adjacent to waters, meet the significant nexus tests; and are "other waters" as well, namely an open water pond feature and its associated wetlands is. The wetland features have been independently judged by two sets of wetland experts as having met wetland criteria for hydrology and vegetation (BSK and ESA), and soils (ESA). The site has been subject to significant recent disturbance which has apparently removed most of the vegetation associated with the seasonal wetlands. But these characteristics were evident despite being assessed during a drought season (USBR, 2014). Historic aerial photos from verify standing water on the site (Digital Globe, 2014). Therefore, all three the wetland hydrology indicators are satisfied (USACE, 2008).

The APE is within 1,000 feet of tidal waters (702 feet to the permanent water feature, and appears to provide the nexus functions: (i) Sediment trapping, (ii) Nutrient recycling,(iii) Pollutant trapping, transformation, filtering, and transport,(iv) Retention and attenuation of flood waters, (v) Runoff storage, (vii) Export of organic matter, (viii) Export of food resources, and (ix) Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species (BSK 2015; ESA 2014; DSEIR 2015. It further contains characteristics of a wetland as defined by the USACE, and therefore, should be classified as waters and a wetland within the identified wetland boundary.

7. LIMITATIONS

The observations, assessment and recommendations submitted in this report are based upon the data obtained from existing reports prepared by others, limited field investigation, and limited access site

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[LC-BIO-1]
cont.

observations. The report does not reflect variations which may occur beyond the assessed area. The findings of the field observation may have a potential for negative impact(s) on the value or suitability of the site for some purposes. BSK cannot assume liability for any such negative impact(s). Permitting requirements or permit interpretations may change over time. The findings of this report are valid as of the present. However, changes in the conditions of the site can occur with the passage of time, whether caused by natural processes or the human-induced changes on this property or adjacent properties. In addition, changes in applicable or appropriate standards or practices may occur, whether they result from legislation, governmental policy, or the broadening of knowledge. BSK's services were be performed in a manner consistent with the level of care and skill ordinarily exercised by other professionals practicing in the same locale and under similar circumstances at the time the work is performed.

BSK has prepared this report for the exclusive use of Soluri-Meserve. The report has been prepared in accordance with generally accepted practices which existed in northern California at the time the report was written. No other warranties either expressed or implied are made as to the professional advice provided under the terms of BSK's agreement with Soluri-Meserve.

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[LC-BIO-1]
cont.

TABLE 1
OBSERVED BIOLOGICAL RESOURCES

Scientific Name	Common Name	Wetland Status
Plants		
Schoenoplectus maritimus	Alkali Rush	OBL

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Animals		
Anas platyrhynchos	Mallard	
Branta canadensis	Canadian Goose	
Columba livia	Rock Dove	
Corvus brachyrhynchos	American Crow	
Streptopelia decaocto	Eurasian collared-doves	

Source: BSK Associates, 2015
OBL: Obligate, FACW: Facultative Wetland, FAC: Facultative, FACU: Facultative Upland, UPL: Upland, N/A: Not available (USACE, 2014)
* http://rsgisias.crrel.usace.army.mil/NWPL/

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[LC-BIO-1]
cont.

TABLE 2
EESTIMATED AREA OF POTENTIAL EFFECT UPLAND AND WETLAND ACREAGES

Area	Acreage
Upland	11.47 acres
Permanent Wetland	0.51 acres
Seasonal Wetland	0.02 acres
TOTAL	12.0 acres

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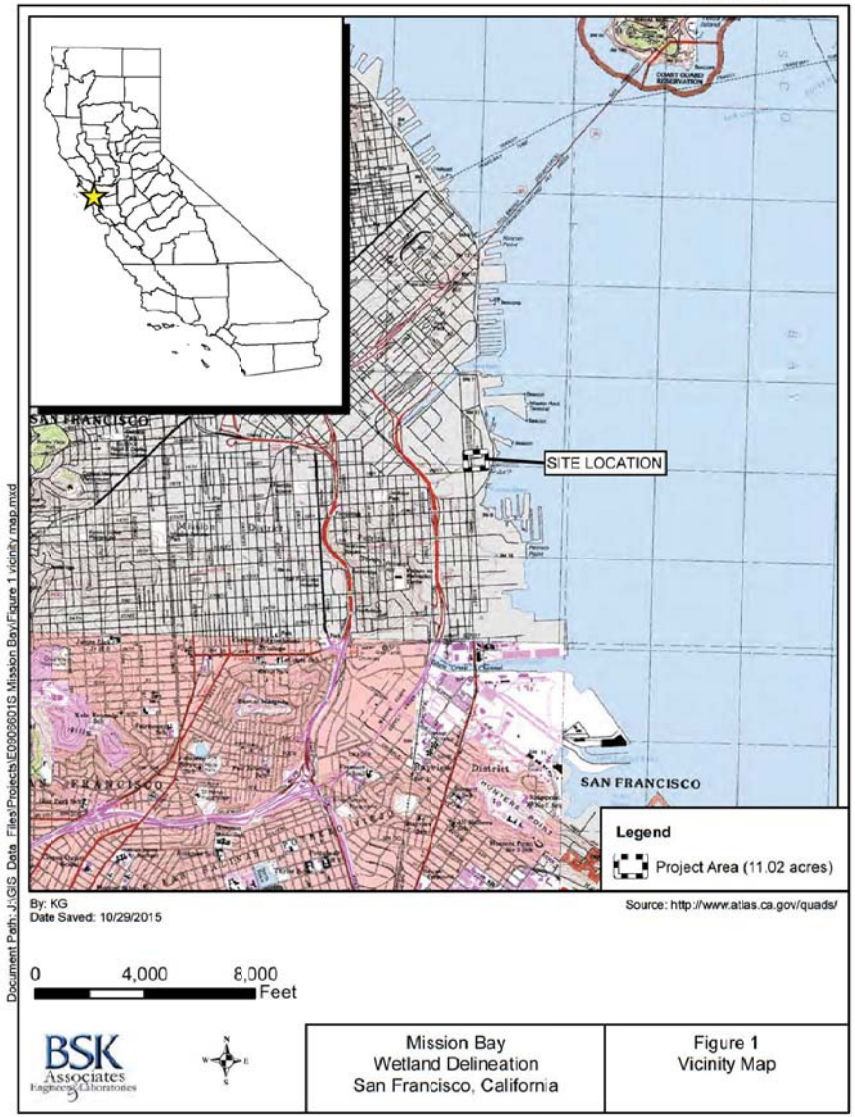

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Mission Bay Wetland Delineation San Francisco, California	Figure 1 Vicinity Map

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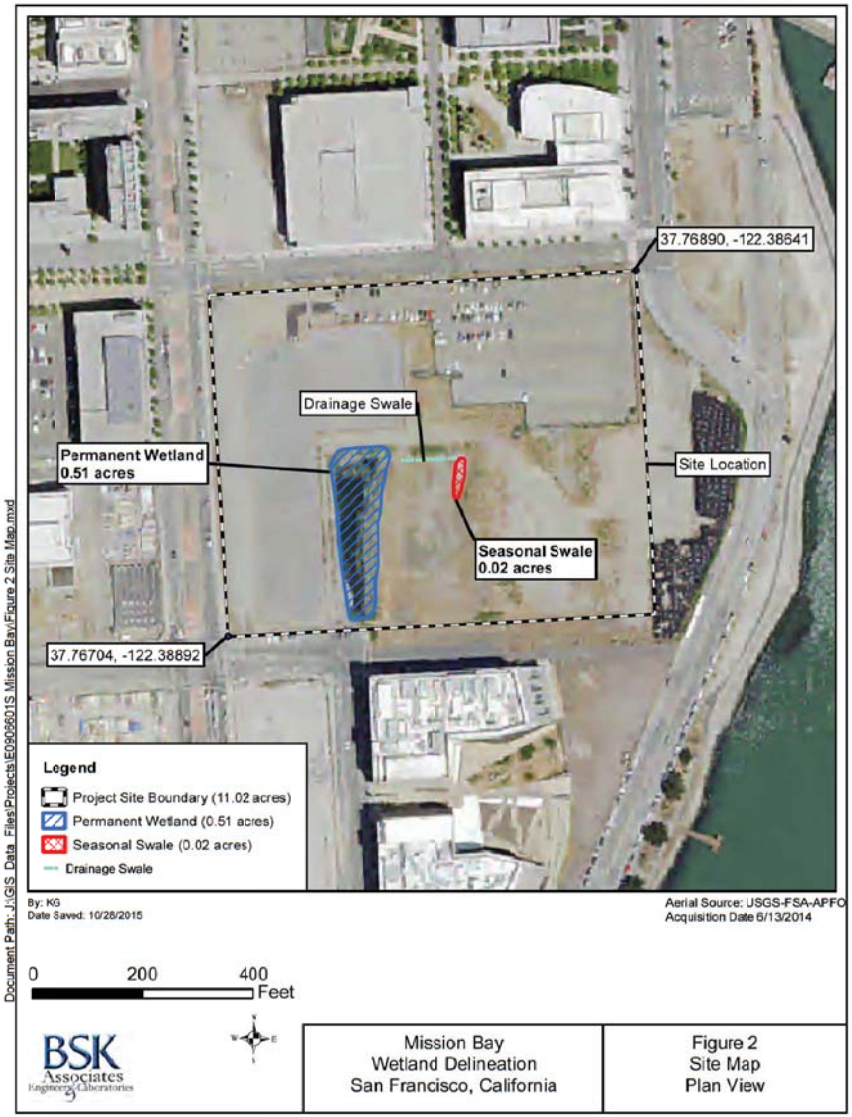

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Mission Bay Wetland Delineation San Francisco, California	Figure 2 Site Map Plan View

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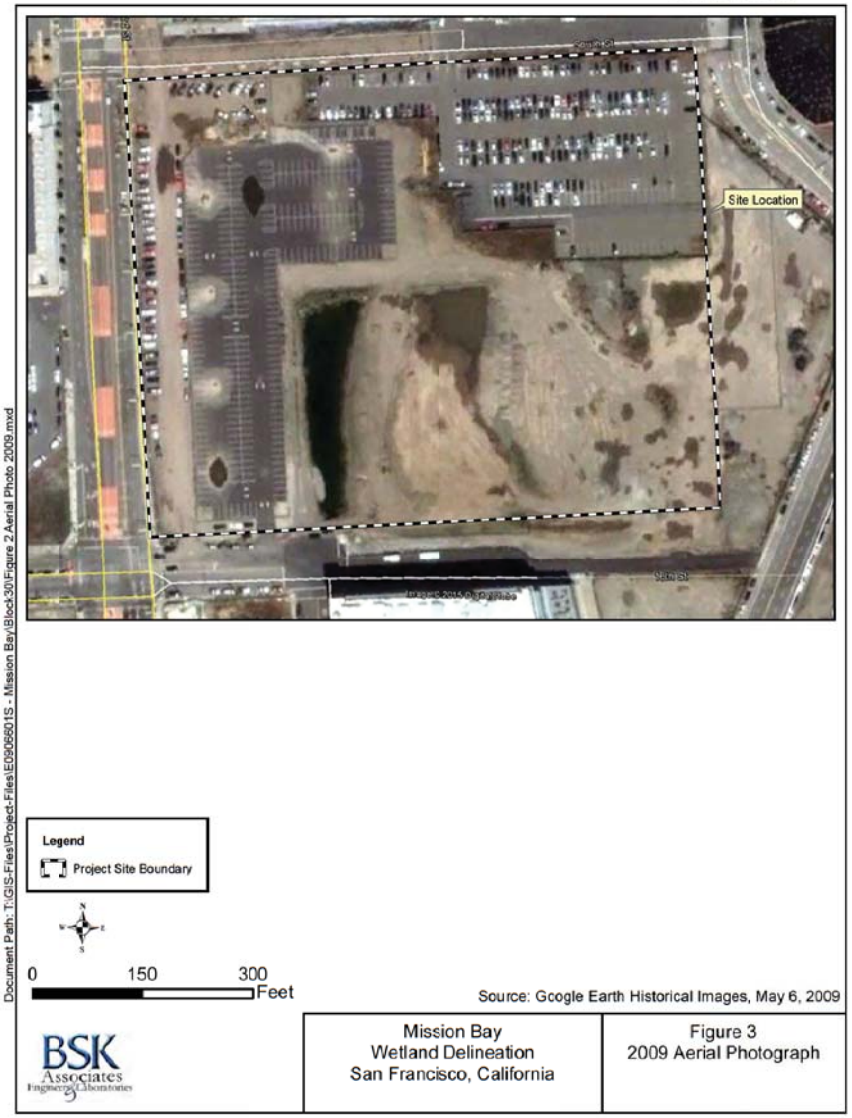

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Mission Bay Wetland Delineation San Francisco, California	Figure 3 2009 Aerial Photograph

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Mission Bay Wetland Delineation San Francisco, California	Figure 4 2011 Aerial Photograph

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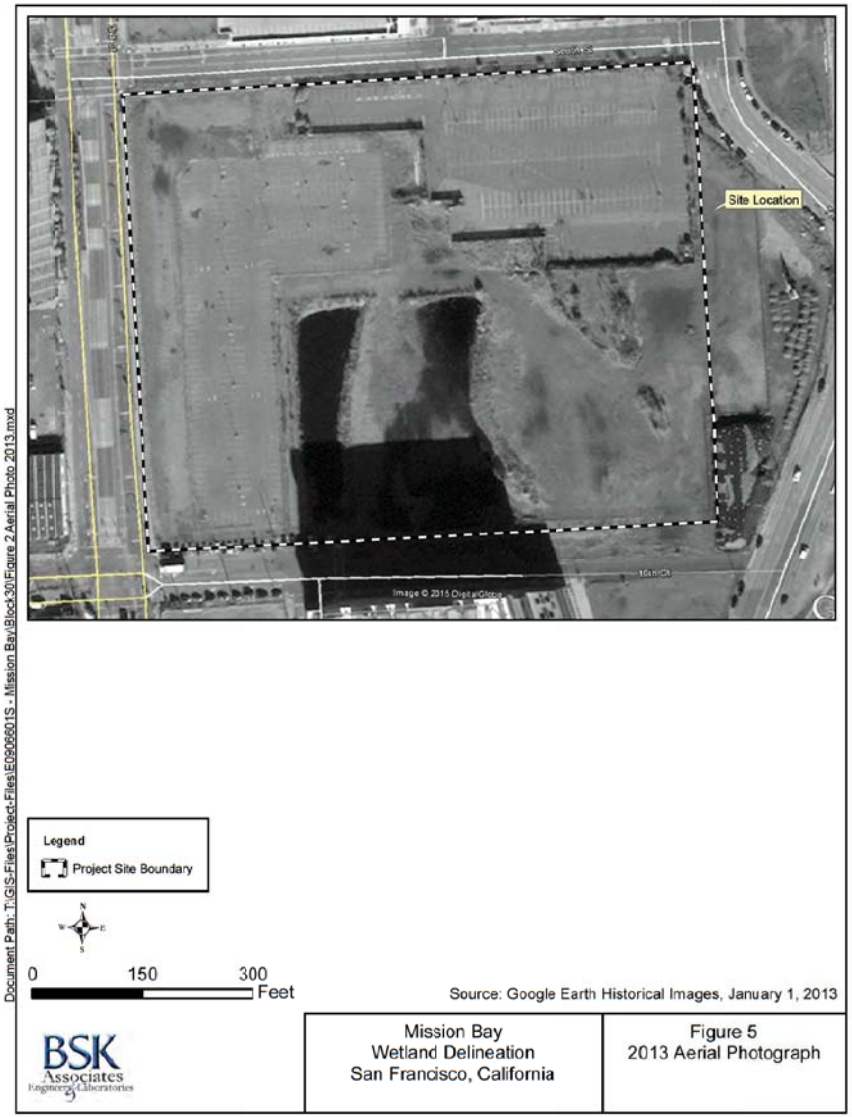

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Erik Ringelberg – Ecological Services Group Manager

Professional Background:

Mr. Ringelberg began his career as an environmental scientist in 1992. His academic background includes a B.Sc. in Microbiology from Colorado State University, a M.Sc. in Environmental Science from Lesley University in Cambridge, Massachusetts, and he is a Ph. D. candidate at the University of Montana, in Riparian and Wetland Ecology. He has directed organizations, managed departments, technical staff, contractors, and volunteers for the public and private sectors. He has coordinated development and restoration projects with state and federal oversight agencies, developed threatened and endangered species management plans. Mr. Ringelberg directed and advised non-profit, tribal, and local government agencies on wildlife mitigation measures, special studies, habitat management and restoration for listed species.

Mr. Ringelberg has completed numerous California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) processes and associated field studies, including protocol studies for listed avian, terrestrial, and aquatic species and their associated habitats in California, Nevada, and Montana. He has delineated Streamside Management Zones, US Army Corps of Engineers - Wetlands and Ordinary High Water Marks and California "isolated" waters. Mr. Ringelberg has also directed both large and small-scale wetland and river restorations.

Relevant Project Experience:

Field Studies and Observations

Wetland Delineations
21 linear miles of Putah Creek for USACE NWP-27 and for Regional General Permits; 17 linear miles of Cache Creek for the County of Yolo for a USACE Regional General Permit 58; 2,560 acres of wetland delineations in Tehama County; and, hundreds of acres for development projects in Fresno Sacramento, Solano, Stanislaus, and Yolo Counties.

Wetland Habitat Reconstruction Analysis
Reconstruction of pre-impact wetland and upland conditions using stratified random statistical analysis of NHP data, and site specific data from local informants, for the Yerington Nevada area.

Worker Environmental Awareness Protection Plans
Preparation and presentation of Worker Environmental Awareness Protection (WEAP) Plans for project which may have potential to impact wetlands, listed species and breeding birds in Solano and Yolo Counties.

Field Ecology

Putah and Cache Creek Plans, Yolo County, CA, Washoe County, and Lyon County NV - Technical Advisor on riparian and wetland habitat analysis, restoration (and SMARA-equivalent) planning for Yolo County Resource Management Planning

BSK Corp

BSK Associates Engineers & Laboratories

Qualifications

Certifications:
Hazardous Analysis and Critical Control Point: Aquatic Nuisance Species, USFWS, 2003
Constructed Wetland Designer; UW, Madison, 1993
40-CFR Hazardous Waste Handling, 1992-1993

Education:
Ph.D., candidate (ABD) Riparian and Wetland Research Program, University of Montana, School of Forestry, Missoula, MT, 2003

M.Sc., Environmental Science, Lesley College, Cambridge, MA, 1991

B.Sc., Microbiology (Business concentration), Colorado State University, Fort Collins, CO, 1987

Experience:
BSK Associates 2009-Present
Wallace-Kuhl 2009-2006
PLF 2006-2003
KYNF 2003-2000

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Erik Ringelberg – Ecological Services Group Manager

Area for Cache Creek, advisor for large-scale watershed restorations (and dam removal) on Putah Creek; and, restoration and management plans for the Pyramid Lake Paiute Reservation. Developed historic species lists for Cache Creek and Yerington region.

Pyramid Lake Paiute Tribe, Big Valley, Robinson, and Upper Lake Rancherias, in Washoe County NV and Clear Lake County, CA - Directed a multi-disciplinary lake and river research-management program for threatened and endangered species. Provided technical support for federal and state-listed species and those of tribal concern (Lahontan cutthroat trout, Cui-ui, Clearlake hitch, Sacramento perch, and tui chub), including managing 6 hatcheries, a water quality laboratory, and tagging programs.

Missoula County Riparian Inventory and Classification Project, Missoula County, MT - Co-funded, developed, and managed the Missoula County riparian inventory. Researched the integration of riparian and wetland vegetation, habitat, and stream classifications.

Certifications

Hazardous Analysis and Critical Control Point: Aquatic Nuisance Species, USFWS
Constructed Wetland Designer; University of Wisconsin, Madison

Invited Speaker

"Large Scale Wetlands Mapping: New Technology and Databases" and "Mitigation and Restoration Challenges" for Lorman's: "Wetland Regulation in California" Sacramento, CA, 2014.

"Agricultural Impacts from Restoration Activities in the Delta." Watershed Education Foundation. Stockton, CA. 2014.

"Elk Slough Restoration and Flood Control Opportunities." Watershed Education Foundation. Sacramento CA. 2013.

"Lessons Learned from Stream Restorations in the Central Valley." Landscape Architecture Department. University of California, Davis. CA. 2013.

"Managing Project Environmental Risks" (co-presenter). 17th Annual Conference. American Public Works Association. Richmond, CA. 2013.

Ringelberg, Erik. "Riparian Restoration - Team Approaches." Landscape Architecture. University of California, Davis. CA. 2011. Lecture.

Ringelberg, Erik. "Applied Ecosystem Restoration." Wildlife, Fish and Conservation Biology, Habitat Conservation and Restoration. University of California, Davis. CA. 2009. Lecture.

Ringelberg, Erik. "Adaptive Management, principles and guidelines." Central Valley Regional Water Quality Control Board, Mercury TMDL and BPA Amendment. Stockton, CA. 2009. Lecture.

Ringelberg, Erik. "Hitch Ecology and Adaptive Management." Hinthil Environmental Resource Consortium. Middletown, CA. 2009. Lecture.

Ringelberg, Erik. "Riparian Management, Cache and Putah Creeks." Restoring habitats Conference, Cache Creek Conservancy. Woodland, CA. 2009. Lecture.

Additional Technical Training

Special Status Amphibians and Reptiles of Northern California, University of California. 2008.

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Erik Ringelberg – Ecological Services Group Manager

Vernal Pool Workshop, California Native Grasslands Association. 2007.
California *Anostracan* and *Notostracan* Identification Class and Practical Exam, Belk. 2006.
UCSB Vernal Pool Workshop, Society for Ecological Restoration. 2006.
Guidance for Characterization, Design Construction and Monitoring of Mitigation Wetlands. USEPA Interstate Technology and Regulatory Council, 2006.

Professional Organizations

California Invasive Plant Council, California Native Grasslands Association, California Society for Ecological Restoration, Society of Wetland Scientists, Native American Fish and Wildlife Society

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Kevin Grove – Staff Scientist

Professional Background:

Mr. Grove began his career as a Transportation Planning Intern with Yolo County Transportation District in 2013. During this internship, Mr. Grove managed the Thanksgiving Shuttle marketing program. He also assisted with significant route and schedule changes for YCTD's local transit agency, Yolobus.

Mr. Grove has assisted with site investigations including biological monitoring, data collection, soil sampling, remote camera operation and field mapping. Additionally, he has interpreted aerial photographs, prepared GIS Figures, conducted 1600 Permit Vegetation Inventory Surveys, Breeding Bird Surveys, Ordinary High Water Mark Surveys, and Wetland Delineation Surveys. He supports the preparation of California Environmental Quality Act documentation, including Environmental Impact Reports, Initial Studies and Mitigated Negative Declarations for proposed projects. His work includes conducting special studies, section writing reference development, and quality assurance.

Example of Relevant Project Experience:

Field Work

Putah Creek Restoration Projects, Yolo and Solano County, California

Mr. Grove conducted 1600 Permit Vegetation Inventory Surveys, mapped various species of trees using GPS locations, tree diameters, and aerial photograph interpretations. Mr. Grove also conducted Ordinary High Water Mark and Wetland Delineation surveys using centimeter accuracy GPS equipment.

Kilgore Property – Proposed Entertainment Center, EPA Brownfields Phase II ESA, City of Rancho Cordova

Using GIS, Mr. Grove created all site maps and figures for the project area. He worked with Erik Ringelberg, Ecological Services Group Manager, to complete an ecological screening to determine the potential presence of endangered species on site. He also conducted inventory, documentation, and graphical representation of all soil samples from the project. Mr. Grove assisted with the writing of the Quality Assurance Project Plan (QAPP).

Pleasants Dixon Main Drain/V-Drain Enlargement Project – Burrowing Owl Protocol Survey, Dixon, CA

Mr. Grove assisted Erik Ringelberg, Ecological Services Group Manager, with a burrowing owl survey to determine the potential presence of burrowing owls on the project site.

Pleasants Creek Bank Stabilization Project – Breeding Bird Survey, Vacaville, CA

Mr. Grove assisted Mr. Ringelberg, with a breeding bird survey to determine the potential presence of breeding birds on the project site.

BSK Associates Engineers & Laboratories

QUALIFICATIONS

Education:

B.S. Environmental Policy Analysis and Planning and minor in Managerial Economics, University of California, Davis 2013

Experience:

BSK Associates
October 2013-Present

Yolo County Transportation District
2013

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Special Studies Modeling

Air Modeling and Reporting

- CalEEMod
- Caline4
- CT-EMFAC 5

Grapevine Shopping Center Project, Kern County, California

Mr. Grove performed air quality modeling to determine air emissions during construction and operation of the proposed project. Implemented mitigation measures to reduce emissions from the project.

Proposed Newcastle Fire Station Phase I and CalEEMOD Air Modeling, Placer County, California

Mr. Grove performed air quality modeling to determine air emissions during construction and operation of the proposed project.

Noise Modeling

- Federal Highway Administrations (FHWA) Traffic Noise Model TNM 2.5
- FHWA Roadway Construction Noise Model RCNM

Grapevine Shopping Center Project, Kern County, California

Mr. Grove conducted noise modeling to determine noise levels from the construction and operation of the proposed project. Implemented mitigation measures to reduce noise levels from the project.

Stormwater Pollution Prevention Plans (SWPPP)

Mr. Grove aided QSDs with the preparation and implementation of multiple SWPPP reports. He is trained for on-site water sampling for pH and turbidity, BMP inspection, and monitoring. He also has experience with the SMARTS online permitting process for Risk Levels 1, 2 and "exempt" projects.

Environmental Impact Report Preparation

Grapevine Shopping Center Project, Kern County, California

Mr. Grove performed noise and air quality modeling for preparation of an Environmental Impact Report for the construction of an approximately 45-acre shopping center. Developed mitigation measures to reduce air emissions and noise levels from the project.

Phase I and Phase II Environmental Site Assessments

10th and R Street Phase I, Sacramento, CA

In the Phase I work of the 10th and R Street project, Mr. Grove created site maps and figures using GIS. These maps identified potential hazardous materials, underground storage tanks, existing plumping, and on-site observations.

McClish Property Phase II, Yolo County, California

In the Phase II work of the McClish Property Project, he created site maps and figures for the project area using GIS. These maps included monitoring well locations and ground water flow direction.

Professional Organizations

American Public Works Association

BSK

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EXHIBIT N

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FILED
In the office of the Secretary of State
of the State of California
AUG 23 1993
MARCH FONG EU, Secretary of State
By Deputy

EXECUTIVE DEPARTMENT
STATE OF CALIFORNIA

EXECUTIVE ORDER W-59-93

WHEREAS, wetlands act as primary producers in the food chain, help retain floods, recharge and discharge groundwater, act as water quality filters, provide recreational and scenic values, and harbor a significant number of California's threatened and endangered plant and animal species; and

WHEREAS, in the nineteenth century and early decades of the twentieth century as much as ninety percent of California's historical wetlands base has been converted to other uses, with a consequent reduction in the functions and values wetlands provide; and

WHEREAS, wetlands in California continue to be converted to other uses and degraded by sedimentation, loss of associated upland habitat, and other factors; and

WHEREAS, past conservation efforts have resulted in the long-term protection of approximately two-thirds of California's remaining wetland acreage; and

WHEREAS, the administration of wetlands programs is often time consuming, duplicative, inconsistent, and therefore costly to landowners and public agencies; and

WHEREAS, it is the policy of the State of California to streamline regulatory permitting processes;

NOW, THEREFORE, I, PETE WILSON, Governor of the State of California, by virtue of the power and authority vested in me by the Constitution and statutes of the State of California, do hereby issue this order to become effective immediately:

I. It is hereby declared to be the policy of the State of California that all State government programs and policies that affect the wetlands of California be coordinated as described herein.

II. It is hereby declared to be the policy of the State of California that its Comprehensive Wetlands Policy rests on three primary objectives:

1) To ensure no overall net loss and long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property.

2) To reduce procedural complexity in the administration of State and Federal wetlands conservation programs.

3) To encourage partnerships to make restoration, landowner incentive programs, and cooperative planning efforts the primary focus of wetlands conservation.

All agencies of the State shall conduct their activities, consistent with their existing authorities, in accordance with these three objectives.

FROM : CALIFORNIA STATE ARCHIVES PHONE NO. : 916 651 6604 JUL. 21 2008 05:34PM P2/4

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III. The California Wetlands Conservation Policy addresses wetlands inventory, planning, wetlands, regulation, landowner incentives, wetlands mitigation banking, and other wetlands conservation approaches (e.g., acquisition, restoration, management, and education). The goal of the California Wetlands Conservation Policy is to achieve a long term increase of wetlands acreage, functions and values in California. Steps taken to achieve this goal shall emphasize maintaining economic uses (e.g., agriculture) of restored and enhanced lands and be achieved through the voluntary participation of landowners. This goal is not meant to be achieved on a permit-by-permit basis. The Task Force or specific agencies as identified in the "California Wetlands Conservation Policy," will develop and implement the following:

(a) a Statewide wetlands inventory and wetlands accounting system;

(b) identification and implementation of regional and Statewide wetlands restoration goals;

(c) State agency assistance and support for local and regional wetlands planning efforts;

(d) promotion of landowner incentive programs to preserve, restore, and enhance wetlands, including the provision of adequate funding from State and Federal sources;

(e) delegation of the permitting authority for the Federal Clean Water Act Section 404 program from the U.S. Army Corps of Engineers to the San Francisco Regional Water Quality Control Board and, for a limited set of activities, the San Francisco Bay Conservation and Development Commission as part of a longer term effort to explore feasibility of Statewide delegation, with adequate Federal funding, of the program;

(f) development of a consistent regulatory wetlands definition for State agencies that improves the overall efficiency of the Federal-State permitting process;

(g) development of a balanced Statewide policy concerning Army Corps of Engineers nationwide permits;

(h) development of consistent standards and guidelines concerning mitigation and monitoring of mitigation and restoration efforts;

(i) actions that promote efficiency of wetlands-related permitting processes of various State agencies, including but not limited to creation of consistent deadlines, establishment of concurrent permit review procedures, and sponsorship of pre-application consultations between permittees and permitting agencies;

(j) development of means to provide flexibility in the regulatory process for the accidental or unintentional creation of wetlands, and for allowing public agencies, water districts, and landowners to establish wetlands on their property consistent with the primary purpose of the property;

(k) development of Statewide wetland mitigation banking guidelines and the development of demonstration wetland mitigation banks in the Central Valley;

(l) enhanced coordination of State, Federal, and private acquisition, restoration, and incentive programs, including the establishment of a demonstration program in Southern California;

(m) ongoing management of wetlands which maintains or enhances wetlands values and recognizes the responsibility to minimize impacts to surrounding landowners;

FROM : CALIFORNIA STATE ARCHIVES PHONE NO. : 916 651 6604 Jul. 21 2008 05:35PM P3/4

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PAGE THREE

(n) the development of internal policies within State agencies that encourage wetland conservation activities which are compatible with programmatic goals such as flood control, groundwater recharge, water management, water pollution control, recreation, and other purposes;

(o) such other matters as are deemed necessary to carry out the purposes of this Executive Order.

IV. It is hereby declared to be the policy of the State of California that the California Wetlands Policy and Plan will initially emphasize Regional Strategies in the Central Valley, the San Francisco Bay Area, and in Southern California. They will be designed to test how wetlands programs can be implemented, refined, and combined in unique ways to achieve the goals and objectives of this California Wetlands Conservation Policy.

V. An Interagency Task Force on Wetlands will be established by the Secretary of Resources and Secretary for Cal/EPA to provide coordination and information exchange among agencies, boards, commissions, and departments as necessary to ensure continued coordinated development and implementation of the California Wetlands Conservation Policy. The Task Force shall invite the participation as necessary of other boards and commissions, and local, Federal, and private agencies which have jurisdiction, expertise, and resources which may contribute to the continued development and implementation of the California Wetlands Conservation Policy. The Secretary of the Resources Agency and the Secretary for Cal/EPA shall serve as co-chairmen.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this 23rd day of August 1993.

Governor of California

ATTEST:

Secretary of State

FROM : CALIFORNIA STATE ARCHIVES PHONE NO. : 916 651 6604 Jul. 21 2008 05:36PM P4/4

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EXHIBIT O

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Winston H. Hickox
Secretary for Environmental Protection

State Water Resources Control Board

Office of Chief Counsel
1001 I Street • Sacramento, California 95814 • (916) 341-5161
Mailing Address: P.O. Box 100 • Sacramento, California 95812-0100
FAX (916) 341-5199 • Internet Address: http://www.swrcb.ca.gov

Gray Davis
Governor

TO: State Board Members
Regional Board Executive Officers

FROM: Craig M. Wilson
Chief Counsel
OFFICE OF CHIEF COUNSEL

DATE: January 25, 2001

SUBJECT: EFFECT OF *SWANCC V. UNITED STATES* ON THE 401 CERTIFICATION PROGRAM

This memorandum has been prepared to explain the effect of the recent US Supreme Court decision of *Solid Waste Association of Northern Cook Counties v. United States Corps of Engineers* (hereinafter "SWANCC"), which was issued on January 9th. The memo is intended to address the impact of the decision on the 401 program (33 U.S.C. § 1341), and to indicate alternative regulatory avenues available to the Regional Boards for waters that are no longer covered by section 404/401 jurisdiction.

I. Facts of the *SWANCC* decision and holding

SWANCC is a consortium of suburban Chicago cities and villages looking to develop a solid waste disposal site. It located a 533-acre parcel that was a gravel-mining pit until about 1960. The pit has reverted into a successional stage forest with seasonal and permanent ponds, but it was not a delineated wetland. SWANCC purchased the site and applied for a § 404 permit. In furtherance thereof, it sought certification from the state of Illinois.

The Clean Water Act (CWA) only regulates what it refers to as "navigable waters." The CWA defines navigable waters as "waters of the United States." In the past, the agencies responsible for implementing the Clean Water Act interpreted the term "waters of the United States" broadly. They determined that it reflected Congress' intention to regulate all waters that the Congress could constitutionally regulate under its commerce power. (See Art. I, Section 8 of the U.S. Constitution, generally known as the Commerce Clause.) Specifically, if the water had any possible connection to interstate commerce, it fell within the scope of the CWA. Since 1986 the Army Corps of Engineers' (COE) regulations reflected this determination. They stated that "waters of the United States" includes, among other things, intrastate waters:

(a) That are or would be used as habitat by birds protected by migratory bird treaties; or

(b) That are or would be used as habitat by other migratory birds that cross state lines; or

(c) That are or would be used as habitat for endangered species; or

(d) That are or would be used to irrigate crops sold in interstate commerce.

This has been dubbed "The Migratory Bird Rule."

Although the SWANCC site was not a "wetland" according to the COE's wetland delineation manual, the COE found that approximately 121 bird species dependent on aquatic environments were observed at the site, and thus found the site to be a water of the United States. Accordingly the COE asserted jurisdiction over the site. The state of Illinois granted 401 certification, but the COE denied the 404 permit on traditional grounds.[1]

SWANCC sued to challenge the COE's jurisdiction over the site, claiming that the COE could not regulate non-navigable, isolated, intrastate waters based on the presence of migratory birds, and that Congress lacked authority under the Commerce Clause to grant the COE such jurisdiction in any event. Although the COE prevailed in the trial and appellate courts, the US Supreme Court reversed, and invalidated the Migratory Bird Rule. It held that the rule is not a fairly supported interpretation of the term "waters of the United States," and the COE exceeded its jurisdiction by interpreting the CWA's reach to include isolated, inland, non-navigable waters. The Court held or implied that the CWA might fairly extend to:

"(a) [t]hose waters of the United States which are subject to the ebb and flow of the tide, and/or are presently, or have been in the past, or may be in the future susceptible for use for purposes of interstate or foreign commerce;

"(b) waters that were or had been navigable in fact or which could reasonably be so made;

"(c) non-navigable wetlands adjacent to open waters;

"(d) wetlands [that are] 'inseparably bound up with the waters of the United States; and

"(e) water bodies [capable] of use by the public for purposes of transportation or commerce."

[1] The COE found (1) that SWANCC had not established that the proposal was the least harmful practicable alternative; (2) that SWANCC's failure to set aside funds for leak remediation was unacceptable risk to public drinking water supplies; and (3) that the impact to the waters was unmitigable because a landfill cannot be redeveloped into forested habitat.

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The Supreme Court questioned the constitutionality of any amendment to the CWA, if Congress was so inclined, that would purport to assert federal jurisdiction over isolated, inland waters. In other words, if Congress tried to adopt the "migratory bird rule," a majority of the Court indicated its belief that it would exceed the power granted to Congress under the U.S. Constitution.

II. *SWANCC's* effect upon the 401 certification program will not be wholly determined until the COE issues guidance implementing the decision.

California's right and duty to evaluate certification requests under section 401 is pendant to (or dependent upon) a valid application for a section 404 permit from the COE, or another application for a federal license or permit. Thus if the Corps determines that the water body in question is not subject to regulation under the COE's 404 program, for instance, no application for 401 certification will be required. Accordingly, the COE's interpretation of the *SWANCC* decision will determine *SWANCC's* impact upon a major portion of California's 401 program. The COE has yet to issue guidance setting forth how the *SWANCC* decision will be implemented. Clearly, however, the Migratory Bird Rule will not determine the scope of the COE's authority over isolated waters. Isolated non-navigable waters (including most non-tidal wetlands) appear to be outside the purview of section 404 of the Clean Water Act.

III. The *SWANCC* decision does not affect the Porter-Cologne authorities to regulate discharges to isolated, non-navigable waters of the state.

If anything definitive can be said about the *SWANCC* decision, it is that the Supreme Court believes regulating inland waters, including isolated wetlands, vernal pools, etc., are the primary (and probably now the exclusive) province of the state. California has numerous authorities that require these waters to be protected. None of those state authorities are affected by the U.S. Supreme Court's decision. Accordingly, the *SWANCC* decision has no impact upon the Regional Board's authority to act under state law. Some major relevant provisions are set forth below.

Water Code section 13260 requires "any person discharging waste, or proposing to discharge waste, within any region that could affect the *waters of the state* to file a report of discharge (an application for waste discharge requirements)." (Water Code § 13260(a)(1) (emphasis added).) The term "waters of the state" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." (Water Code § 13050(e).) The U.S. Supreme Court's ruling in SWANCC has no bearing on the Porter-Cologne definition. While all waters of the United States that are within the borders of California are also waters of the state, the converse is not true—waters of the United States is a subset of waters of the state. Thus, since Porter-Cologne was enacted California always had and retains authority to regulate discharges of waste into any waters of the state, regardless of whether the COE has concurrent jurisdiction under section 404. The fact that often Regional Boards opted to regulate discharges to, e.g.,

vernal pools, through the 401 program in lieu of or in addition to issuing waste discharge requirements (or waivers thereof) does not preclude the regions from issuing WDRs (or waivers of WDRs) in the absence of a request for 401 certification.

Under state law, the duty to file a report of waste discharge is mandatory:

> All of the following persons *shall* file with the appropriate regional board a report of the discharge. (Water Code § 13260(a).)

Furthermore, the Regional Board is required to issue or waive WDRs whenever it receives a report of discharge:

> The regional board, after any necessary hearing, *shall* prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge… with relation to the conditions existing in the disposal area or receiving waters upon, or into which the discharge is made or proposed. The requirements *shall* implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose [etc.] (Water Code § 13263(a).)

Notably, every person is precluded from initiating new discharges or making material changes to discharges prior to filing the report of waste discharge described in section 13260, and for 120 days thereafter unless they have received WDRs (or appropriate waivers). (Water Code § 13264(a).) Given the state's interest in protecting wetlands, it is incumbent upon staff to act within the 120 days. A fill thereafter may be lawful. If, however, it appears that the Regional Board is unable to meet and consider WDRs (or a waiver thereof) within the statutory time allotted, the Regional Board could issue a cleanup and abatement order under section 13304 against anyone who, through a discharge to waters of the state, has created or threatens to create a condition of pollution. "Pollution" is defined as an alteration of the quality of the waters of the state, which unreasonably affects its beneficial uses. (Water Code § 13050(l).) Wildlife is a beneficial use, and thus filling or threatening to fill wetlands would provide grounds to issue an appropriate order under 13304.

The California Environmental Quality Act (CEQA) also provides a requirement for the Regional Boards to exercise their authorities to require minimization and mitigation of impacts to waters of the state. Whenever a Regional Board is a responsible agency under CEQA, and the Lead Agency has prepared an EIR, the Regional Board must not only review the CEQA document, but it must reach its own conclusions on whether and how to approve the project involved. (14 CCR § 15096(a).) Moreover, the Regional Board must mitigate or avoid the direct or indirect environmental effects of the parts of the project it approves, and it is prohibited from approving a project if there is a feasible alternative or feasible mitigation measures that would

lessen or avoid significant impacts. (14 CCR § 15096(g)(1) and (g)(2).) Furthermore, as a responsible agency the Regional Board must make specific findings relating to the feasibility of avoidance, minimization, or mitigation of the adverse effects. (14 CCR §§ 15096(h), 15091, 15093.) Feasible changes or alterations within the control of the Regional Board must be articulated in the WDRs.

Notably, since 1993 and continuing through the present, the official policy of the United States and the State of California respecting wetlands has and continues to be one of "no net loss." Accordingly, the charge to protect the state's wetlands has already been articulated. In areas where the COE determines it no longer has jurisdiction, it would be consistent with present federal and state policy for the Regional Boards to fill the gap. This may require contacting the applicable COE divisions for assistance in identifying pending 404 permit applications, or conducting outreach to the local development interests to remind them that, irrespective of the COE's authority or the 404 program, they still must comply with applicable state requirements for discharges.

IV. Conclusion

While the *SWANCC* decision will no doubt have repercussions for the state's 401 certification program, the reach of the decision will not be clear until the COE issues guidance indicating how it intends to implement the holding. The 404 program may be dramatically scaled back or the COE could read the decision narrowly, as merely invalidating the Migratory Bird Rule. Irrespective, the state retains its independent authority under Porter-Cologne and other statutes, to regulate discharges of waste to all waters of the state, including those waters that are no longer considered waters of the United States. The thrust of the *SWANCC* decision is that regulation of inland, isolated waters is and should be under the primary authority of the state rather than the federal government. Given the state and federal "no net loss" of wetlands policy, the Regional Board's should consider that regulating any discharges of waste to waters that may no longer be subject to COE jurisdiction is both authorized and justified.

If you have any questions about this memo, please contact Michael Levy, Staff Counsel at (916) 341-5193.

cc: Edward C. Anton, EXEC
Stan Martinson, DWQ
RWQCB Attorneys, OCC

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EXHIBIT P

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State Water Resources Control Board

Executive Office
1001 I Street • Sacramento, California 95814 • (916) 341-5615
Mailing Address: P.O. Box 100 • Sacramento, California • 95812-0100
Fax (916) 341-5621 • http://www.swrcb.ca.gov

Terry Tamminen
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

TO: Regional Board Executive Officers

FROM: Celeste Cantú
Executive Director
EXECUTIVE OFFICE

DATE: JUN 2 5 2004

SUBJECT: GUIDANCE FOR REGULATION OF DISCHARGES TO "ISOLATED" WATERS

Background

As you know, Governor Schwarzenegger's *Action Plan for California's Environment* directs State agencies to fill any gaps in wetlands protection. The Supreme Court's 2001 decision in *Solid Waste Agency of Northern Cook County v. U. S. Army Corps of Engineers (SWANCC)* found that certain "isolated" wetlands and other waters are out of federal jurisdiction under the Clean Water Act, and it is the responsibility of the states to protect them. As a result of the decision, many projects carried out in "isolated waters" that previously would have required a Clean Water Act section 404 permit now no longer need one. From January 1, 2001 to December 31, 2003, the U. S. Army Corps of Engineers (USACE) disclaimed jurisdiction over 160 water bodies comprising 449 acres of waters of the State, including 251 acres of wetlands, 121 acres of riparian area and 77 acres of other waters (these figures are under-reported because 24 percent of the jurisdictional disclaimers did not specify the sizes of the disclaimed water bodies). USACE continues to disclaim waters, pursuant to relevant federal guidance.

In response to *SWANCC*, the State Water Resources Control Board (SWRCB) has:

- issued a January 25, 2001 legal memorandum asserting the authority and responsibility of the SWRCB and Regional Water Quality Control Boards (RWQCBs) to regulate discharges to "isolated" waters,
- coordinated with USACE to ensure that the SWRCB and RWQCBs receive copies of all USACE jurisdictional disclaimer letters and developed a database of such disclaimers and related RWQCB orders,
- submitted March 13, 2003 comments on a federal proposal that would have redefined "Waters of the United States,"
- submitted to the legislature an April 2003 report titled *Regulatory Steps Needed to Protect and Conserve Wetlands Not Subject to the Clean Water Act*, and

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- on May 4, 2004, adopted general waste discharge requirements for certain discharges to non-federal waters.

However, we have not yet developed a systematic, statewide approach for protecting "isolated" waters. The effects of *SWANCC* have fallen on the State at a time of shrinking agency budgets, and discharges to disclaimed waters have gone almost entirely unregulated by the RWQCBs; they are also often not subject to Department of Fish and Game (DFG) or other State regulation.

At their January 6, 2004 meeting, RWQCB Assistant Executive Officers suggested that the SWRCB provide direction for protecting "isolated" waters; and at the April 21, 2004 meeting of the Water Quality Certification Program Coordinating Committee (Corcom), RWQCB 401 Liaisons recommended the adoption of the following guidance. This document provides internal guidance only and has no regulatory effect. It is being forwarded electronically to RWQCB 401 staffs and will be posted on the SWRCB 401Program's Intranet site (http://dwqweb/wqcert/).

Guidance

Discharges subject to Clean Water Act section 404 receive a level of regulatory review and protection by the USACE and are often also subject to streambed alteration agreements issued by the DFG; whereas discharges to waters of the State subject to *SWANCC* receive no federal oversight and usually also fall out of DFG jurisdiction. Absent RWQCB attention, such discharges will generally go entirely unregulated. Therefor, to the extent that staffing constraints require the RWQCBs to regulate some dredge and fill discharges less closely than others and consistent with other RWQCB priorities, RWQCBs should consider setting a higher regulatory priority on discharges to "isolated" waters than to discharges of similar extent, severity, and permanence to federally-protected waters of similar value. Dredging, filling, or excavation of "isolated" waters constitutes a discharge of waste to waters of the State, and prospective dischargers are required to submit a report of waste discharge to the RWQCB and comply with other requirements of Porter-Cologne. Therefore, you should protect "isolated" waters in your Region by systematically instituting the following procedures:

1. Request a report of waste discharge from all recipients of USACE jurisdictional disclaimers, using the attached or a similar letter.
2. Pursuant to the requirements of the California Permit Streamlining Act, advise prospective dischargers within 30 days of receiving a report of waste discharge of whether their application is complete and, if not, what is needed to make it complete (assuming that you do not take regulatory action with 30 days).
3. Take appropriate regulatory action in response to receiving the report of waste discharge, using either the SWRCB's Water Quality Order No. 2004-0004-DWQ, *Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction* (General WDRs) or other individual or general WDRs or waivers. The General WDR can be downloaded from the SWRCB's website at "http://www.swrcb.ca.gov/cwa401/index.html". In issuing WDRs or waivers, you may refer to the same regulatory considerations which you generally apply to

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issuance of Clean Water Act section 401 Water Quality Certifications (401 certification) and to those articulated in the General WDRs.

4. Copy SWRCB and USACE staffs on your requests for reports of waste discharge and on your regulatory orders. Addresses of appropriate parties are:

401 Program Manager
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

U.S. Army Corps of Engineers
(Appropriate District below):

Regulatory Branch
Sacramento District
1325 J Street
Sacramento, CA 95814-2922

Regulatory Branch
San Francisco District
333 Market Street
San Francisco, CA 94105

Regulatory Branch
Los Angeles District
911 Wilshire Boulevard, 11th Floor
Los Angeles, CA 90017-3401

Use the USACE's file number, whenever available, on all correspondence. SWRCB staff will use the USACE file number (or your file number in its absence) to correlate USACE jurisdictional disclaimers, RWQCB requests for reports of waste discharge, applicants' reports of waste discharge, and RWQCB regulatory orders. Using this information, the SWRCB will assist your tracking of *SWANCC*-related discharges and will report on our effectiveness in filling the regulatory gap created by the current federal interpretation of *SWANCC*.

Thank you for your effective management of our very limited program resources in regulating dredge, fill, and excavation discharges to wetlands, riparian areas, headwater streams, and other waters. If you have any questions, please contact Stan Martinson, Chief of the Division of Water Quality, at 916-341-5458 or at marts@swrcb.ca.gov. You may also contact Oscar Balaguer, Chief of the Wetlands and Certification Program, at 916-341-5485 or at balao@swrcb.ca.gov.

Attachment

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cc: Terry Tamminen
Agency Secretary
California Environmental Protection Agency

Chris Potter
Wetland Coordinator
Resources Agency
1416 Ninth Street
Sacramento, CA 95814

Larry Week, Chief
Watershed Restoration Branch
Department of Fish and Game
1416 Ninth Street, 12th Floor
Sacramento, CA 95814

Andrew Rosenau, Chief
Regulatory Branch
Sacramento District
U.S. Army Corps of Engineers
1325 J Street, Room 1444
Sacramento, CA 95814-2922

Calvin C. Fong, Chief
Regulatory Branch
San Francisco District
U.S. Army Corps of Engineers
333 Market Street
San Francisco, CA 94105-2197

Dave Castenon, Acting Chief
Regulatory Branch
Los Angeles District
U.S. Army Corps of Engineers
300 North Los Angeles Street, Room 6062
Los Angeles, CA 90012

Tim Vendlinski, Chief (WTR-8)
Wetlands Regulatory Office
U.S. Environmental Protection Agency,
Region 9
75 Hawthorne Street
San Francisco, CA 94105

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Regional Board
Executive Officers

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Electronic cc: Regional Board
Assistant Executive Officers

RWQCB WQCP Liaisons and other staff

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ATTACHMENT: *MODEL LETTER FORMAT*

Regional Board Letterhead

Dear ___

REQUEST FOR REPORT OF WASTE DISCHARGE

By copy of a U.S. Army Corps of Engineer (USACE) <date> jurisdictional disclaimer letter, we understand that you may be planning to dredge, fill, or excavate in waters which the USACE has determined to be outside of federal jurisdiction. Such activities may constitute a discharge of waste, which could affect the quality of waters of the State, as defined in California Water Code (CWC) section 13050. Pursuant to CWC section 13260, you are required to file with this Regional Water Quality Control Board (RWQCB) a Report of Waste Discharge (ROWD) describing the proposed discharge at least 140 days before it occurs (See CWC § 13264). This letter constitutes a formal request for such a ROWD. Pursuant to CWC section 13261, failure to respond to this request before discharging, or discharging without regulatory authorization, may result in substantial civil or criminal penalties.

If you do not plan to conduct any discharge to any "isolated" water as described above, please advise us so that we can close our file. If you are planning such a discharge, use one of the two forms listed below, as appropriate, to submit a ROWD. To expedite processing, please include a copy of this request letter with your response, and indicate the USACE's file number on all correspondence.

1. If the discharge will not be greater than 0.2 acre and 400 linear feet (for fill and excavation) or 50 cubic yards (for dredging), you may be eligible for the State Water Resource Control Board's *General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction* (GWDRs). You must submit a Notice of Intent (NOI) and a mitigation plan demonstrating that you have taken practicable steps to avoid and minimize impacts; that you will compensate for unavoidable permanent impacts to wetlands and headwater streams; and that you will comply with other specified conditions. Note that you will not be covered by the GWDRs unless the RWQCB sends you a written Notice of Enrollment; or unless the RWQCB does not issue you a Notice of Exclusion within 45 days of receiving your complete NOI. You can download a copy of the GWDRs and the NOI form at http://www.swrcb.ca.gov/cwa401/index.html. The form is also available in hardcopy from the RWQCB. Note that if your project is eligible under these GWDRs, your NOI need only be filed 45 days before the proposed discharge.

2. If your proposed discharge does not qualify for the GWDRs, you may need individual waste discharge requirements. To apply, please use the form normally used to apply for water quality certification. You can download that form at www. <RWQCB website>. Be sure to indicate that you are responding to this request for a ROWD. The form is also available in hardcopy from the RWQCB.

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Regional Board - 2 -
Executive Officers

As instructed in the NOI form, please include with your application any environmental documents, technical reports, plans, diagrams, maps, mitigation and monitoring proposals, and other documents which will help characterize the discharge. Please also submit the appropriate "To Non-Federal Waters" fee as determined from California Code of Regulations Title 23, section 2200 (a)(2). The fee schedule may be viewed and fees calculated at http://www.swrcb.ca.gov/cwa401/docs/feecalculator.xls.

Please send the application package to the address below. Please also send a duplicate copy of the application form/ROWD, but without any supplemental documents, to: SWANCC-ROWD, Wetlands and Certification Unit, Division of Water Quality, State Water Resources Control Board, 1001 I Street, 15th Floor, Sacramento, CA 95814.

If you have any questions, please contact <name> at <telephone> or <email> .

cc: SWANCC-ROWD, Water Quality Certification Unit
Division of Water Quality
State Water Resources Control Board
100 I Street, 15th Floor
Sacramento, CA 95814

<name>
Chief, Regulatory Branch
US Army Corps of Engineers
_____ District
<address>

California Environmental Protection Agency

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EXHIBIT Q

STATE WATER RESOURCES CONTROL BOARD
WATER QUALITY ORDER NO. 2004-0004-DWQ

STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR DREDGED OR FILL DISCHARGES TO WATERS DEEMED BY THE U.S. ARMY CORPS OF ENGINEERS TO BE OUTSIDE OF FEDERAL JURISDICTION (GENERAL WDRs)

I. FINDINGS

The State Water Resources Control Board (SWRCB) finds that:

Reasons for issuing these General WDRs

1. Section 13260(a) of the California Water Code (Water Code) requires that any person discharging waste or proposing to discharge waste within any region, other than to a community sewer system, which could affect the quality of the waters of the State[1], file a report of waste discharge (ROWD). The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State.

2. California has largely relied upon its authority under section 401 of the federal Clean Water Act (CWA) (33 U.S.C. § 1341) to regulate discharges of dredged or fill material to California waters. That section requires an applicant to obtain "water quality certification" from California that the project will comply with State water quality standards before certain federal licenses or permits may be issued. The permits subject to section 401 include permits for the discharge of dredged or fill materials (CWA section 404 permits) issued by the U.S. Army Corps of Engineers (ACOE).

3. Given the regulatory process employed under section 401, waste discharge requirements under the Porter-Cologne Water Quality Control Act were typically waived for projects that required certification. Regional Water Quality Control Board (RWQCB) waivers also applied to discharges outside of ACOE jurisdiction. However, these waivers expired as of January 1, 2003 pursuant to the requirements of SB 390. These General WDRs regulate some of the activities for which WDRs were previously waived.

4. The certification process under section 401 only applies to those waters that are subject to the reach of the CWA. The CWA applies to "navigable waters," which are defined in the CWA as "waters of the United States." The term "waters of the United States" is defined expansively in 33 Code of Federal Regulations (CFR), part 328. In 2001, the U.S. Supreme Court issued a decision in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001) ("*SWANCC*"), which held that certain "isolated" waters are not subject to CWA jurisdiction merely because they are frequented by migratory birds that cross state lines. The full implications of SWANCC are yet to be determined in the federal courts, but as a result

[1] "Waters of the State" as defined in Water Code section 13050(e).

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of the decision, many projects that previously would have required a section 404 permit now no longer need one. From January 1, 2001 to December 31, 2003, the ACOE disclaimed jurisdiction over 160 water bodies comprising 449 acres of waters of the state, including 251 acres of wetlands, 121 acres of riparian area, and 77 acres of other waters (these figures are under-reported because 24 percent of the jurisdictional disclaimers did not specify the sizes of the disclaimed waterbodies). The prospect of issuing waste discharge requirements for each of the now non-federal waters, especially in a time of budgetary contraction, is daunting. Many of the projects that were traditionally subject to certification requirements involved small discharges with few or no permanent impacts. It is the intent of these General WDRs to regulate a subset of the discharges that have been determined not to fall within federal jurisdiction, particularly those projects involving impacts to small acreage or linear feet and those involving a small volume of dredged material.

5. Wetlands, riparian areas, and headwaters are shallow waters of the state, which are by their nature affected most often and severely by filling and excavation. Regulatory attention to these water bodies is necessitated by the State "No Net Loss" Policy for wetlands (Executive Order W-59-93); the high habitat value of these waters; the basin-wide value of these waters for pollutant removal, floodwater retention, channel stability, and habitat connectivity; the high number of special-status species associated with these waters and their associated habitats; the high percentage of historic losses of these waters in California; the vulnerability of these waters to future impacts from projected population growth and land development; and the high level of public interest in these waters.

6. Water Code section 13263(a) requires that waste discharge requirements (WDRs) be prescribed as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge. Such WDRs must implement any relevant water quality control plans, taking into consideration beneficial uses to be protected, the water quality objectives reasonably required for those purposes, other waste discharges, the need to prevent nuisance, and the provisions of section 13241 of the Water Code.

7. Water Code section 13263(i) authorizes the SWRCB to prescribe general WDRs for a category of discharges if the discharges are produced by the same or similar operations; the discharges involve the same or similar types of waste; the discharges require the same or similar treatment standards; and the discharges are more appropriately regulated under general discharge requirements than individual discharge requirements.

8. The discharges authorized by these General WDRs meet the criteria for general WDRs set forth in Water Code section 13263(i) because they are all produced by dredging or filling operations; they all involve the discharge of earth, rock, or similar solid materials; they are all limited in size per the terms of the WDRs; they all require similar mitigation techniques to avoid, minimize, and/or compensate for their adverse impacts; and they are all relatively small surface water bodies or water body segments that have been deemed by ACOE to be "isolated," do not meet the federal wetland criteria, or are above the "line of ordinary high water" limit of federal jurisdiction. They are appropriately regulated under General WDRs because of their similar nature, large numbers, and amenability to being regulated through the use of similar discharge restrictions, as specified in these General WDRs. Regulation of

such discharges by these General WDRs will allow the SWRCB and RWQCBs to direct limited staff time to larger, more complex, and potentially more damaging discharges to waters deemed to be outside of federal jurisdiction.

Eligibility Criteria

9. These General WDRs are restricted to dredged or fill discharges of not more than two-tenths (0.2) of an acre and 400 linear feet for fill and excavation discharges, and of not more than 50 cubic yards for dredging discharges. Projects that may be covered under these General WDRs include land development, detention basins, disposal of dredged material, bank stabilization, revetment, channelization, and other similar projects. These size maximums help limit the potential environmental impact of the discharges and make them amenable to similar discharge restrictions, while permitting about half of the projects discharging to non-federal waters, as projected from historical data on discharge sizes. The size and volume restrictions are appropriate because larger projects involve a significantly greater risk to the environment and are more appropriately regulated by individual WDRs.

   Absent a potential effect on the quality of waters of the state, no notification is required under these General WDRs.[2] The "quality of waters" refers to chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affects its use.[3] Because of the variability, complexity, and interactions of the factors affecting the quality of waters, it is not possible to provide advice on the kind, size, location, or duration of discharges that can affect water quality under all circumstances. Generally, discharges of dredged, fill, or excavated material to a wetland, or to the active channel or bed of a waterbody will require regulation. Discharges to a riparian area or to an area in proximity to a waterbody can affect the quality of the water if they directly or indirectly result in a discharge to the water (e.g., via stormwater flows, during flood events, or by generating pollutants or increased runoff); are associated with a change in the nature of vegetation that could affect water quality (e.g., by affecting pollutant removal, stream shading, or bank stability); or change the hydrologic or geomorphologic characteristics of the waterbody during some flow condition.

   These General WDRs do not set a lower size limit below which a Notice of Intent is not required. Neither the Porter-Cologne Water Quality Control Act nor the federal CWA establish a lower size threshold for permitting. If a lower threshold were established in these General WDRs, discharges below that threshold would be subject to regulation under individual WDRs or an individual waiver of WDRs, thus defeating the purpose of these General WDRs. Moreover, size is not the sole factor dictating the value of a wetland or other water. Small, strategically placed waters, or segments of waters, can play important roles in supporting local habitat, habitat connectivity, pollutant removal, floodwater attenuation, and other beneficial uses. In addition, without a reporting requirement, there would be no way for the State to ensure that multiple small discharges will not have significant cumulative effects.

10. Discharges of fill can directly or indirectly destabilize the channel or bed of a receiving water by changing geomorphic parameters, including hydrologic characteristics, sediment characteristics, or stream grade. Such destabilization diminishes the ability of the water body

[2] Water Code section 13260
[3] Water Code section 13050(g)

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to support designated beneficial uses. Quantification and mitigation of such impacts may require detailed project-specific analyses. Therefore, these General WDRs do not authorize discharges that could destabilize the channel or bed of a receiving water.

11. In urbanizing basins or other situations, a large number of relatively small projects potentially eligible for these General WDRs, in their aggregate, may adversely impair the ability of the water body to support beneficial uses. Quantification and mitigation of such impacts may require basin-wide analyses. Therefore, these General WDRs do not authorize discharges that, when considered in conjunction with other potential discharges, could cause a significant cumulative effect on water quality or beneficial uses.

12. To the extent they are determined to fall within federal jurisdiction, it is likely that the SWRCB and RWQCBs will continue to regulate dredged or fill discharges primarily through their authority under section 401 of the CWA. Therefore, these General WDRs do not apply to discharges to federal waters that are subject to sections 401 and 404 of the CWA. These General WDRs likewise do not apply to discharges regulated under a section 402 storm water permit.

13. Discharges which could have a significant impact on rare, candidate, threatened, or endangered species require detailed project-specific analysis and individual regulation. Such discharges are therefore not authorized by these General WDRs.

14. Although a discharge may be eligible for coverage under these General WDRs, the RWQCB may elect to regulate the discharge under other WDRs or waivers thereof.

15. Discharges that would be exempt pursuant to section 404(f) of the CWA are waived from these WDRs. This waiver shall not affect a RWQCB's authority to issue individual WDRs or waivers for such discharges if it deems it appropriate.

Mitigation Plan

16. SWRCB Resolution No. 68-16, "Statement Of Policy With Respect To Maintaining High Quality Of Waters In California" ("Antidegradation Policy"), states that discharges to existing high quality waters will be required to meet WDRs which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur, and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

17. Executive Order W-59-93, dated August 23, 1993, establishes a California Wetlands Conservation Policy including an objective to ensure no overall net loss of and a long term net gain in the quantity, quality, and permanence of wetland acreage and value in California ("No Net Loss Policy").

18. Filling wetlands, riparian areas, headwaters, and other waters causes partial or complete loss of the beneficial uses provided by those waters. To reconcile such losses with the "No Net

Loss" requirements of Executive Order W-59-93 and the "Antidegradation" requirements of SWRCB Resolution No. 68-16, these General WDRs require mitigation plans to ensure that impacts are mitigated through avoidance and minimization and that unavoidable loss of beneficial uses is offset with appropriate compensatory mitigation, including creation, restoration, or (in exceptional cases) preservation of other waters of the state. These mitigation requirements are consistent with those adopted by the U.S. Environmental Protection Agency and the ACOE for regulation of dredged or fill discharges to federal waters under CWA section 404.

19. To comply with the objective of the State "No Net Loss Policy" to ensure the quantity, quality, and permanence of wetland acreage and values in California, and with the "Antidegradation" requirements of SWRCB Resolution No. 68-16, these General WDRs require that compensatory mitigation areas for permanent impacts be subject to a deed restriction or other legal instrument that ensures preservation of the mitigation in perpetuity. These General WDRs do not generally require compensatory mitigation for temporary impacts, because the SWRCB does not anticipate that projects eligible under this order would ordinarily create temporary impacts of a size, severity, and/or duration that would have a significant adverse impact on beneficial uses. The decision in this order to generally require compensatory mitigation only for permanent impacts is not meant to be a precedent for any other SWRCB or RWQCB order.

20. Consistent and equitable application of these General WDRs is in the interest of environmental protection and the applicants. These General WDRs therefore provide guidance to SWRCB and RWQCB staffs regarding factors to evaluate in considering the eligibility of these General WDRs and in evaluating mitigation plans.

Basin Plans

21. All WDRs must implement the RWQCB Water Quality Control Plan (Basin Plan) for the region affected by the discharge. These General WDRs require dischargers to comply with all applicable Basin Plan provisions, including maintaining the protection of beneficial uses and complying with any prohibitions and water quality objectives governing the discharge.

Beneficial Uses

22. Beneficial uses are the most fundamental of the State's water quality standards. RWQCBs designate appropriate beneficial uses for waters in their regions' Basin Plans. The beneficial uses for the waters of the State include, but are not limited to, domestic supply, municipal supply, agricultural and industrial supply, power generation, recreation, aesthetic enjoyment, navigation, and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

Fees

23. Water Code section 13260(d)(1) requires that each person for whom WDRs have been prescribed pursuant to section 13263 shall submit an annual fee according to a reasonable fee

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schedule established by the SWRCB. The schedule of fees for discharges of dredged or fill material is published at California Code of Regulations (CCR) 23 section 2200(a)(2). For activities covered by these General WDRs, the SWRCB anticipates that most of the discharges will be one-time and of short duration. Therefore, only a one-time fee usually will be charged.

California Environmental Quality Act (CEQA)

24. CEQA requires a government agency to comply with certain procedures when it approves or proposes to carry out an activity. (Cal. Code Regs., tit. 14, § 15002(e))

25. Private actions are subject to CEQA if they involve governmental participation, financing, or approval. (Cal. Code Regs., tit. 14, § 15002(c))

26. A Mitigated Negative Declaration in compliance with CEQA has been adopted for these General WDRs.

27. Potential dischargers and all other known interested parties have been notified of the intent to adopt these General WDRs.

28. All comments pertaining to the proposed discharges have been heard and considered in a public meeting.

II. ORDER

A. ELIGIBILITY

IT IS HEREBY ORDERED that only discharges that meet the following criteria shall be enrolled under these General WDRs:

1. The discharge shall not be subject to section 404 of the CWA or section 10 of the federal Rivers and Harbors Act. These General WDRs likewise do not apply to discharges regulated under a section 402 storm water permit.

2. The discharge shall be dredged or fill materials.

3. The discharge shall meet the following size criteria:

   a. Excavation[4] and fill activities must not excavate or fill an area greater than two-tenths (0.2) of an acre of waters of the state, and

[4] "Excavation refers to moving sediment or soil in shallow waters or under no-flow conditions where impacts to beneficial uses are best described by the area of discharge. It typically is done for purposes other than navigation. Examples include trenching for utility lines, other earthwork preliminary to construction, removing sediment to increase channel capacity, and aggregate mining in fresh water." (Cal. Code Regs., tit. 23, § 2200(a)(2).)

b. Linear excavation and fill activities affecting drainage features and shorelines (e.g., bank stabilization, revetment, and channelization projects), must not excavate or fill more than 400 linear feet of waters of the state, measured parallel to the streambank or shoreline, and

c. Dredging[5] activities must dredge not more than 50 cubic yards within waters of the state.

d. These size criteria apply to discharges, which could either permanently or temporarily affect the quality of waters of the state[6].

e. These size criteria apply to complete projects and shall not be used to authorize "piecemealing" of larger discharges. In regulating recurring discharges, e.g., routine maintenance of sedimentation basins, forebays, or similar waters, these criteria shall be applied for each discharge episode.

4. For purposes of defining the size criteria specified in this section, determining fees as required by section II.B.3, and evaluating mitigation proposals as required by section II.B.4 of these General WDRs, the lateral extent of waters of the state shall be determined by the most expansive of the following:

   a. The federal criteria current on the date of adoption of these General WDRs[7],

   b. Headwaters, defined as intermittent and ephemeral drainages.

5. The discharge shall not directly or indirectly destabilize a channel or bed of a receiving water. In determining whether a discharge meets this criterion, the RWQCB Executive Officer[8] will consider potential project-induced changes to:

[5] "Dredging" refers to removing sediment in deeper water to increase the depth. Impacts to beneficial uses are best described by the volume of the discharge. It typically occurs to facilitate navigation and for aggregate extraction in marine waters.

[6] Fill or dredged discharges can *permanently* affect the quality of waters of the state when the discharged material will be in place indefinitely and/or by its nature precludes a reasonable assurance that beneficial uses will be fully reestablished. Examples include filling of wetlands or other waters, streambank hardening, channelization, construction of bridge piers and abutments, and ongoing vegetation removal and channel maintenance. Fill or dredged discharges can *temporarily* affect the quality of waters of the state when the discharged material will be in place for a limited time and/or there is a reasonable assurance that beneficial uses will be fully reestablished once the discharge ceases. Examples include temporary fills, excavation for temporary access roads, and one-time vegetation removal or excavation of sediment. Mitigation measures or management practices may be needed to assure that impacts are "temporary" (e.g., reestablishment of natural grade, revegetation, reestablishment of soil permeability to allow vegetative growth, compaction of backfill to assure that utility trenches do not dewater wetlands).

[7] 33 CFR 328.3(b)-(e), 33 CFR 328.4, 40 CFR 230.41.

[8] For multi-region projects, the SWRCB Executive Director. The terms Executive Officer or Executive Director as used herein include any designees.

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a. Quantity, velocity, timing, and direction of flow;
b. Sediment characteristics;
c. Stream grade; and
d. Other relevant project-induced changes.

6. The discharge shall not cause in combination with other discharges a significant cumulative effect on water quality or beneficial uses of the waters of the State including, but not limited to, wetlands and headwaters.

7. The discharge shall not adversely impact, either directly or through habitat modification, any plants or animals identified as candidate, sensitive, or special status species in local or regional plans, policies or regulations; or by the California Department of Fish and Game (DFG), the U.S. Fish and Wildlife Service (USFWS), or the National Marine Fisheries Service (NMFS). The project shall not , substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number of or restrict the range of an endangered, rare or threatened species.

8. The discharge shall not significantly conflict with any adopted and approved USFWS Habitat Conservation Plan (HCP) or DFG Natural Community Conservation Plan (NCCP).

9. The discharge shall not adversely impact a significant historical or archeological resource, shall not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, shall not disturb any human remains, and shall not eliminate important examples of the major periods of California history or prehistory.

10. The discharge shall not cause conflict with existing zoning for agricultural use or a Williamson Act contract.

11. The discharge, as mitigated, shall not cause significant adverse environmental impacts.

12. Discharges that would be exempt pursuant to section 404(f) of the CWA are waived from these WDRs. This waiver shall not affect a RWQCB's authority to issue individual WDRs or waivers for such discharges if it deems it appropriate.

B. APPLICATION REQUIREMENTS

IT IS FURTHER ORDERED that dischargers seeking enrollment under these General WDRs shall submit the following to the appropriate RWQCB Executive Officer or, in the case of multi-Region projects, to the SWRCB Water Quality Certification Program Manager at least 45 days prior to any discharge:

1. A Notice of Intent (NOI) to be enrolled under and to comply with these General WDRs.

2. Any CEQA documents that have been prepared for the project.

3. A fee pursuant to Title 23, section 2200 of the CCR.

4. A Mitigation Plan:

   The Mitigation Plan shall demonstrate that the discharger will sequentially avoid, minimize, and compensate for the adverse impacts to the affected water bodies' beneficial uses (as defined in the applicable Basin Plan). The Mitigation Plan shall address the following:

   a. Avoidance: No discharge shall be permitted if there is a practicable alternative[9] to the proposed discharge, which would have less adverse impact to the aquatic ecosystem, as long as the alternative does not have other significant adverse environmental consequences.

   b. Minimization: Unavoidable temporary impacts shall be mitigated by restoring water bodies and vegetation to pre-discharge conditions as quickly as practicable and by taking other practicable measures to reduce the severity and duration of such impacts.

   c. Compensatory mitigation: Discharges resulting in unavoidable permanent impacts to wetlands or headwaters shall ensure "no net loss" of area (acreage), functions, and beneficial use values by providing appropriate compensatory mitigation including creation, restoration, or (in exceptional cases) preservation. The RWQCB Executive Officer/SWRCB Executive Director will consider, at a minimum, the following when reviewing the adequacy of compensatory mitigation:

      (1) Onsite habitat value
      (2) Habitat connectivity value
      (3) Floodwater retention value
      (4) Pollutant removal value
      (5) Ratio of area of proposed compensation to proposed loss
      (6) Proposed revegetation and irrigation plans and success criteria
      (7) Availability of suitable soils, hydrology, and natural vegetation at the compensation site
      (8) Monitoring and reporting provisions
      (9) Contingency plan for failure to achieve success criteria
      (10) Any other information requested by the RWQCB or SWRCB.

   The Mitigation Plan shall demonstrate that all potentially adverse environmental impacts have been mitigated to a less than significant level. The thoroughness of the alternatives analysis and the extent of the proposed mitigation shall be commensurate with the purpose of the discharge, the value and sensitivity of the receiving water(s), and the extent, severity, and duration of the effect on the quality of waters.

[9] An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded, or managed in order to fulfil the basic purpose of the proposed activity may be considered (this definition is the same as presented in federal regulations at section 230.10(a)(2) of Title 33 of the CFR).

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5. Any other additional information requested by the SWRCB or RWQCB to evaluate the proposed dredged or fill discharge.

A discharge shall not be enrolled under these General WDRs unless the RWQCB Executive Officer or SWRCB Executive Director finds that the Mitigation Plan meets the requirements of this section and the discharge meets all other eligibility criteria. The RWQCB Executive Officer or SWRCB Executive Director shall independently determine eligibility, including the adequacy of the Mitigation Plan, but may consider findings and requirements included in other agencies' permits.

C. DISCHARGE REQUIREMENTS

IT IS FURTHER ORDERED that the discharger shall comply with the following:

Prohibitions:

1. The discharge of material is prohibited until the discharger has received a Notice of Applicability (NOA) from the RWQCB Executive Officer or the SWRCB Executive Director or until 45 days after submission of a complete and accurate NOI.[10] If the RWQCB Executive Officer or the SWRCB Executive Director has not issued a Notice of Exclusion (NOE) within 45 days of receiving a complete and accurate NOI, the discharge may proceed.

2. No discharges are authorized under these General WDRs if the discharger has received a NOE from the RWQCB Executive Officer or the SWRCB Executive Director.

3. The discharge shall not cause pollution, contamination, or nuisance as defined in Water Code section 13050.

4. The discharge of material in a manner other than as described in the NOI, the Findings or conditions of these General WDRs, or in the RWQCB Executive Officer or SWRCB Executive Director-approved Mitigation Plan is prohibited.

5. The discharge of substances in concentrations toxic to human, plant, animal, or aquatic life or that produce detrimental physiological responses therein, is prohibited.

6. The discharge of waste classified as "hazardous" or "designated" as defined in Title 22, section 66261 of the CCR, or Water Code section 13173 is prohibited.

Special Provisions:

7. The discharger shall discharge in a manner that is consistent with the information provided in the NOI.

[10] The RWQCB Executive Officer or the SWRCB Executive Director, within 30 days from submittal of the NOI, may find a submittal to be incomplete or inaccurate.

8. The discharger shall comply with the eligibility criteria for these General WDRs.

9. The discharger shall implement the approved Mitigation Plan.

10. Requested amendments to the approved Mitigation Plan must be submitted in writing to the RWQCB Executive Officer and, for multi-region projects, to the SWRCB Water Quality Certification Program Manager. The discharger may not modify operations until the discharger has received written notification that the RWQCB Executive Officer or SWRCB Executive Director has approved the amendment. If the RWQCB Executive Officer or the SWRCB Executive Director does not disapprove the requested amendment within 45 days of receiving the written notification, the changes to the approved Mitigation Plan may be implemented as described in the requested amendment.

11. If mitigation measures do not meet their interim or ultimate success criteria, the discharger shall implement remedial measures that are acceptable to the RWQCB Executive Officer or SWRCB Executive Director.

12. All compensatory mitigation areas shall be subject to a conservation easement, deed restriction, or other legal instrument, which shall ensure preservation of the mitigation in perpetuity. Documentation of the easement, restriction, or other legal instrument shall be submitted to the RWQCB, or to the SWRCB for multi-region projects, before any discharge authorized by these General WDRs occurs.

13. The discharger, if requested by the RWQCB or SWRCB, shall provide certification that supervisory and other responsible operations personnel have received training regarding these General WDRs.

14. Fueling, lubrication, maintenance, operation, and storage of vehicles and equipment shall not result in a discharge or a threatened discharge to water bodies. At no time shall the discharger use vehicles or equipment that leak any substance that might impact water quality. Staging and storage areas for vehicles and equipment shall be located outside of water bodies.

15. Except in compliance with the terms of an NOA for this order, no construction material, spoils, debris, or other substances associated with this project, that may adversely impact water quality, shall be located in a manner which may result in a discharge or threatened discharge to water bodies.

16. Upon completion of the project, the discharger shall complete a Notice of Termination (NOT) requesting to be un-enrolled from these General WDRs.

Standard Provisions:

17. A copy of these General WDRs shall be kept at the project site for reference by project personnel. Personnel shall be familiar with its contents.

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18. The discharger shall take all reasonable steps to prevent any discharge in violation of these General WDRs.

19. The discharger shall report promptly to the RWQCB or SWRCB any proposed material change in the character, location, area, and/or volume of the discharge. The discharger shall obtain confirmation from the RWQCB or SWRCB that such proposed modifications do not disqualify the discharger from coverage under these General WDRs. Confirmation or new WDRs shall be obtained before any modifications are implemented. If the RWQCB Executive Officer or the SWRCB Executive Director does not disapprove the proposed change within 45 days of receiving a written report describing the proposed change, the discharge may proceed in accordance with the proposed modifications.

20. These General WDRs do not convey any property rights or exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the discharger from liability under federal, State, or local laws, and do not create a vested right to continue to discharge waste.

21. These General WDRs do not relieve the discharger from the responsibility to obtain other necessary local, State, and federal permits, nor do these General WDRs prevent imposition of additional standards, requirements, or conditions by any other regulatory agency.

22. The discharger shall allow the RWQCB or SWRCB, or an authorized representative, upon the presentation of credentials and other documents, as may be required by law, to do the following:

    a. Enter upon the premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of these General WDRs,

    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of these General WDRs,

    c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under these General WDRs, and

    d. Sample, photograph, and monitor at reasonable times, for the purpose of assuring compliance with these General WDRs.

23. After notice and opportunity for a hearing, coverage of an individual discharge under these General WDRs may be terminated or modified for cause, including, but not limited to, the following:

    a. Violation of any term or condition of these General WDRs.

    b. Obtaining these General WDRs by misrepresentation or failure to disclose all relevant facts.

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

24. The filing of a request by the discharger for an order modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any condition of these General WDRs.

25. Where the discharger becomes aware that it failed to submit any relevant facts in an NOI or submitted incorrect information in an NOI to the RWQCB or SWRCB, it shall promptly submit such facts or information.

26. The discharger shall furnish, within a reasonable time, any information the RWQCB or SWRCB may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the discharger coverage under these General WDRs. The discharger shall also furnish to the RWQCB or SWRCB, upon request, copies of records required to be kept by these General WDRs.

27. The Water Code provides that any person failing or refusing to furnish technical or monitoring program reports, as required under these General WDRs, or falsifying any information provided in the monitoring reports, is subject to civil liability for each day in which the violation occurs.

28. The discharger shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with these General WDRs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.

29. All reports, notices, or other documents required by these General WDRs or requested by the RWQCB or SWRCB shall be signed by a person described below or by a duly authorized representative of that person.

    a. For a corporation: by a responsible corporate officer such as (1) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function; (2) any other person who performs similar policy or decision-making functions for the corporation; or (3) the manager of one or more manufacturing, production, or operating facilities if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

    b. For a partnership or sole proprietorship: by a general partner or the proprietor.

    c. For a municipality, State, federal, or other public agency: by either a principal executive officer or ranking elected official.

30. Any person signing a document under Provision II.C.29 shall make the following certification, whether written or implied:

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"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

31. The discharger shall report any discharge of waste that may endanger public health or the environment. Any information shall be provided orally to the RWQCB within 24 hours from the time the discharger becomes aware of the occurrence. A written report shall also be submitted to the RWQCB Executive Officer within five (5) consecutive days of the time the discharger becomes aware of the occurrence. The written report shall contain (a) a description of the noncompliance and its cause; (b) the period of the noncompliance event, including dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and (c) steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

32. The discharger shall report all instances of noncompliance not reported under Provision II.C.31 within seven (7) consecutive days of the time the discharger becomes aware of the occurrence. The report shall contain any applicable information listed in Provision II.C.31.

33. The discharger shall comply with all of the conditions of these General WDRs. Any noncompliance with these General WDRs constitutes a violation of the Water Code and is grounds for an enforcement action.

34. The discharger must comply with all applicable Basin Plan provisions, including maintaining the protection of beneficial uses and complying with any prohibitions and water quality objectives governing the discharge. In the event of a conflict between the provisions of these General WDRs and the applicable Basin Plan, the more stringent provisions prevails.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the SWRCB held on May 4, 2004.

AYE:

NO:

ABSENT:

ABSTAIN:

_____
Debbie Irvin
Clerk to the Board

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ATTACHMENT 1
TO WQ ORDER NO. 2004-004-DWQ

STATE WATER RESOURCES CONTROL BOARD

NOTICE OF INTENT (NOI)

TO ENROLL UNDER AND COMPLY WITH THE TERMS OF WATER QUALITY ORDER NO. 2004-004 DWQ (GENERAL WDRs), STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR DREDGED OR FILL DISCHARGES TO WATERS DEEMED BY THE U.S. ARMY CORPS OF ENGINEERS TO BE OUTSIDE OF FEDERAL JURISDICTION

Mark Only One Item	1. New Discharge 2. Change of Information-WDID # _____

I. **Owner of the Land**

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person				

II. **Billing Address**

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person				

III. **Discharger (if different from owner of the land)**

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person				

STATE USE ONLY

WDID:	Regional Board Office:	Date NOI Received:	
[redacted]		Check #: _____	

IV. **Site Location**

Street (including address, if any)	
Nearest Cross Street(s)	
County:	Total Size of Site (acres):

Latitude/Longitude (Center of Discharge Area) in degrees/minutes/seconds (DMS) to the nearest ½ second or decimal degrees (DD) to four decimals (0.0001 degree)

DMS: N. Latitude Deg. _____ Min. _____ Sec. _____

W. Longitude Deg. _____ Min. _____ Sec. _____

DD: N. Latitude _____

W. Longitude _____

Attach a map of at least 1:24000 (1" = 2000') detail of the proposed discharge site (e.g., USGS 7.5 minute topographic map).

V. **Discharge Information**

Subject		Notes
Name(s) and type(s) of receiving waters:		Receiving water types are: river/streambed, lake/reservoir, ocean/estuary/bay, riparian area, wetland
Eligibility of receiving water. Provide evidence that the water affected by this discharge is deemed to be out side of federal jurisdiction:		U.S. Army Corps of Engineers jurisdictional disclaimer letter, or explanation why such a disclaimer is not needed
Identify all regulatory agencies having jurisdiction over this project. Attach copies of all federal and State license/permit applications or issued copies of licenses/permits from government agencies:		For example: Dept. of Fish and Game Streambed Alteration Agreement, Coastal Commission permit
Proposed project start date:	Expected date of completion:	

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Project description:	For example: Discharge of riprap; discharge of fill; excavation for a utility line
Purpose of the entire activity:	For example: Stream-bank erosion control; flood management; residential development
Characterization of discharges:	What types of constituents will be discharged? Is the sediment contaminated?

Fill and Excavation Discharges: For each water body type listed below indicate in ACRES the area of the proposed discharge to waters of the state, and identify the impacts(s) as permanent and/or temporary. For linear discharges to drainage features and shorelines, e.g., bank stabilization, revetment, and channelization projects, ALSO specify the length of the proposed discharge to waters of the state IN FEET.[1]

Water Body Type	Permanent Impact		Temporary Impact	
	Acres	Linear Feet	Acres	Linear Feet
Wetland				
Streambed				
Lake/Reservoir				
Ocean/Estuary/Bay				
Riparian				

Dredging Discharges: Volume (cubic yards) of dredged material to be discharged into waters of the United States.

[1] For guidance in determining the extent of impacted waters, see General WDRs, section II.A.4

VI. **California Environmental Quality Act**

Will an environmental impact report or a negative declaration be adopted for this project or has one been adopted?

❑ YES ❑ NO

If yes, what is the current status of the environmental impact report or negative declaration?

❑ Not yet issued for public review.
❑ In public review.
❑ Adopted.

Name of lead agency _____

If an environmental impact report or a negative declaration is in public review or has been adopted, enclose the document with this NOI.

Will the discharge occur in, or in immediate proximity to, an area covered by a U.S. Fish and Wildlife Service (USFWS) Habitat Conservation Plan (HCP) or a Department of Fish and Game Natural Community Conservation Plan (NCCP)?

❑YES ❑ NO

Will the discharge occur in, or in immediate proximity to, any habitat of a plant or animal species that has been classified by the Department of Fish and Game, the U.S. Fish and Wildlife Service, or the National Marine Fisheries Service as candidate, sensitive, endangered, rare, or threatened?

❑YES ❑ NO

Will the discharge occur in, or in immediate proximity to, a significant historical or archeological resource, a unique paleontological resource or site, a unique geologic feature, or any human remains?

❑YES ❑ NO

Will the discharge occur in, or in immediate proximity to, land under existing zoning for agricultural use or under a Williamson Act contract?

❑YES ❑ NO

Will the discharge, as mitigated, cause any other significant adverse environmental impact?

❑YES ❑ NO

If you answered "yes" to any of the previous five questions, provide a detailed explanation demonstrating why the discharge is eligible to be enrolled under the General WDRs.

VII. **Additional Submittals.** In accordance with provisions of State Water Resources Control Board (SWRCB) Water Quality Order No. 2004-0004 DWQ, please submit the following with this NOI to the appropriate Regional Water Quality Control Board or, for multi-Region projects, to the SWRCB.

a. A fee pursuant to California Code of Regulations, Title 23 Section 2200.

b. A Mitigation Plan, as described in the General WDRs.

VIII. CERTIFICATION

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"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that the provisions of these General WDRs will be complied with."	
Signature of Discharger	Title
Printed or Typed Name	Date

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ATTACHMENT 2
TO WQ ORDER NO. 2004-0004-DWQ

STATE WATER RESOURCES CONTROL BOARD

NOTICE OF TERMINATION

OF DREDGED OR FILL DISCHARGES
TO WATERS DEEMED BY THE U.S. ARMY CORPS OF ENGINEERS
TO BE OUTSIDE OF FEDERAL JURISDICTION
(WATER QUALITY ORDER NO. 2004-0004 DWQ)

WDID # _____

III. **Owner of the Land**

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person				

III. **Discharger (if different from owner of the land)**

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person				

III. **Site Location**

Street (including address, if any)
Nearest Cross Street(s)
County:

IV. **Reason For Notice of Termination**

Indicate why the discharge should no longer be regulated under WQ Order No. 2004-0004-DWQ.

STATE USE ONLY

WDID:	Regional Board Office:	Date NOT Received: _____	Date NOT Processed: _____

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V. **CERTIFICATION**

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."	
Signature of Discharger	Title
Printed or Typed Name	Date

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EXHIBIT R

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STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 2008-0026

DEVELOPMENT OF A POLICY TO PROTECT WETLANDS AND RIPARIAN AREAS
IN ORDER TO RESTORE AND MAINTAIN THE WATER QUALITY AND BENEFICIAL USES
OF THE WATERS OF THE STATE

WHEREAS:

1. Over 85 percent of historic wetland and riparian acreage in California has been lost according to published research estimates. Remaining resources continue to be vulnerable to future impacts from projected population growth, land development, sea level rise, and climate change in California.

2. Although physically occupying only a small percentage of California watersheds, wetlands and riparian areas provide valuable water quality functions such as flood control, pollutant filtration, water supply and replenishment, recreation, and habitat for a wide variety of plants and animals. Wetlands and riparian areas act to promote the health and existence of other vital natural resources, and provide significant economic benefits to California.

3. The value of wetlands and riparian areas has been recognized in California through the enactment of the California Wetlands Conservation Policy that sets a goal to "ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property" (Executive Order W-59-93).

4. The State has relied primarily on requirements of the Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.) (Clean Water Act) to protect wetlands and riparian areas for water quality goals.

5. Recent U.S. Supreme Court rulings (*Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers,* 2001 and *Rapanos v. United States,* 2006) have reduced the jurisdiction of the Clean Water Act over wetland and riparian areas by limiting the definition of "waters of the United States." These decisions necessitate the use of California's independent authorities under the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.) to protect these vital resources.

6. In 2003, the State Water Resources Control Board (State Water Board) issued a report to the Legislature titled, *Regulatory Steps Needed to Protect and Conserve Wetlands Not Subject to the Clean Water Act (Supplemental Report of the 2002 Budget Act Item 3940-001-0001)*. This report reviewed the critical role that wetlands and riparian areas have in protecting the beneficial uses of waters throughout the State. Consistent with the State Water Board and Regional Water Quality Control Boards' (Regional Water Boards) (collectively California Water Boards) 2001 Watershed Management Initiative, this report further recognizes that a watershed-level approach is needed to protect wetlands and riparian areas and their associated water quality functions.

7. In 2004, State Water Board staff initiated a Workplan upon the California Environmental Protection Agency's request (*Workplan: Filling the Gaps in Wetland Protection*) to address the waters of the State that are no longer protected under the Clean Water Act. This *Workplan* specified the need to adopt a State wetland definition to "provide a standard metric to help determine compensatory mitigation requirements and compliance with [the] 'no net loss' policy [Executive Order W-59-93]." In addition, the *Workplan* included developing a statewide policy for wetland protection "at least as protective as the federal requirements." To immediately address part of "the gap," the State Water Board adopted general waste discharge requirements for minor discharges to non-federal waters (Water Quality Order 2004-0004 May 4, 2004).

8. California continues to lose "functional wetlands" at an increasing rate despite the efforts of the State's 401 Water Quality Certification Program. This fact is documented in a State Water Board research study contracted with UCLA titled *An Evaluation of Compensatory Mitigation Projects Permitted Under Clean Water Act Section 401 by The California State Water Resources Control Board, 1991-2002.* The current implementation of the 401 Water Quality Certification Program does not adequately protect functional wetlands. Unfortunately, compliance with regulatory requirements has not resulted in resource protection. Clearly, there is a need for a strong statewide policy that provides both guidance on the protection and restoration of wetlands, as well as assessing and measuring net change in wetland functions. . The purpose of the proposed Policy is to ensure no further net loss and ultimate long-term gain in the quantity and quality of "functional" wetlands and riparian areas within the State. Successful implementation of the proposed Policy will be assessed via measurable environmental outcomes.

9. In 2007, State Water Board staff completed public scoping meetings on wetland and riparian area policy alternatives and considered comments received in accordance with the California Environmental Quality Act.

THEREFORE BE IT RESOLVED THAT:

1. The State Water Board recognizes the beneficial services of wetlands and riparian areas for people and wildlife in protecting and improving water quality, providing fish and wildlife habitat including unique plant communities (i.e., wetland and riparian vegetation), storing floodwaters, maintaining surface water flows in dry periods, and other valuable functions. California has a rich ecological diversity, therefore, the State Water Board further recognizes that watershed focused planning is the most effective strategy for maintaining and enhancing these functions.

2. The State Water Board will take action to ensure the protection of the vital beneficial services provided by wetlands and riparian areas through the development of a statewide policy to protect wetlands and riparian areas (Policy) that is watershed-based.

3. The Development Team, as defined below, will examine the environmental issues, evaluate the relevant alternatives, and make recommendations regarding the Policy. To ensure a comprehensive scope, the staff is directed to consider additional alternatives and recommendations other than those outlined in the 2004 *Workplan*.

4. In recognition that successful Policy implementation will require a supporting level of internal program infrastructure, major policy areas should be addressed in a step-wise fashion and implemented in phases to allow for commensurate program development. The Policy shall

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support efforts to collect wetland data to monitor progress towards statewide wetland protection and to evaluate the level of program resources needed, including staffing, to undertake the next phases.

5. (a) The State Water Board staff is directed to develop the Policy using a collaborative process that involves the Regional Water Boards and bring that Policy to the State Water Board for consideration. A California Water Board development team (Development Team) will be formed for the Policy. The Development Team will consider and utilize relevant plans, policies, and technical documents already adopted or being developed by the Regional Water Boards, including the Stream and Wetland Systems Protection Policy Basin Plan Amendment being prepared by Regions 1 and 2.

   (b) The Development Team will coordinate with other State and federal agencies and interested stakeholders to ensure a high degree of public involvement and agency coordination throughout the Policy development process.

   (c) A charter will be developed by the Development Team defining the Development Team's purpose, responsibilities, goals and objectives, operating procedures, and timelines. The charter will identify the relationship of the Development Team to the water boards, other public agencies, and stakeholders. In July 2008, the Development Team will report back to the State Water Board on the proposed charter, before adoption by the Development Team.

   (d) The State Water Board will review the Development Team's progress in July 2008, and periodically thereafter to provide oversight guidance as needed.

   (e) The Policy, as well as the work of the Development Team, will inform and shape proposed Regional Basin Plan amendments. At a minimum for the proposed Regional Basin Plan amendments, this would include a review following the completion of the peer review process, and also a review within the public comment period prior to adoption hearings by the Regional Water Boards.

6. The Development Team will develop the Policy in three phases:

   Phase 1 – establish a Policy to protect wetlands from dredge and fill activities. The Development Team is directed to develop and bring forward for State Water Board consideration: (a) a wetland definition that would reliably define the diverse array of California wetlands based on the United States Army Corps of Engineers' wetland delineation methods to the extent feasible, (b) a wetland regulatory mechanism based on the 404 (b)(1) guidelines (40 C.F.R. parts 230-233) that includes a watershed focus, and (c) an assessment method for collecting wetland data to monitor progress toward wetland protection and to evaluate program development.

   Phase 2 – expand the scope of the Policy to protect wetlands from all other activities impacting water quality. The Development Team is directed to develop and bring forward for State Water Board consideration: (a) new beneficial use definitions, (b) water quality objectives, and (c) a program of implementation to achieve the water quality objectives, as necessary, to protect wetland-related functions.

Phase 3 – extend the Policy's protection to riparian areas. The Development Team is directed to develop, and bring forward for State Water Board consideration: (a) new beneficial use definitions, (b) water quality objectives, and (c) a program of implementation to achieve the water quality objectives, as necessary, to protect riparian area-related functions.

7. The Development Team will begin Phase 1 immediately with a target completion date of mid-2009. Work on Phases 2 and 3 will proceed in parallel or in sequence as appropriate and will follow in subsequent years. Phase 1 work products will include:

   a. An overarching policy statement establishing the intent of the California Water Boards to protect all waters of the State using a watershed approach in coordination with the Regional Water Boards; other local, State, and federal agencies; and local watershed and stakeholder groups and forums;

   b. A wetland definition that would reliably define the diverse array of California wetlands based on the United States Army Corps of Engineers' wetland delineation methods to the extent feasible;

   c. A framework for protecting water quality and beneficial uses that relies on sequential avoidance, minimization, and mitigation of impacts; and,

   d. Guidance on tracking wetland condition and function to monitor wetland protection and other required data to evaluate necessary program development resources.

8. At all phases, the Policy is intended to complement and support Region-specific plans and policies to protect the functionality of wetlands and riparian areas and should recognize the Regional Water Boards' essential role in implementing and informing statewide policy.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on April 15, 2008.

AYE: Chair Tam M. Doduc
Vice Chair Gary Wolff, P.E., Ph.D
Charles R. Hoppin
Frances Spivy-Weber

NAY: None

ABSENT: Arthur G. Baggett, Jr.

ABSTAIN: None

Jeanine Townsend
Clerk to the Board

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EXHIBIT S

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2 November 2015

Mr. Tom Lippe, Esq.
Law Offices of Thomas N. Lippe APC
201 Mission Street, 12th Floor
San Francisco, CA 94105

Project: Warriors Event Center in Mission Bay
FHA # 648-02

Dear Mr. Lippe,

You requested that I review the analysis of this Project's noise impacts in the Responses to Comments on the Draft Subsequent EIR dated 5 June 2015, Chapters 12 & 13. This letter report summarizes my comments and responds to your specific questions.

Does the DSEIR use a reliable methodology to determine the significance of Impact NO-1 and Impact NO-5?

Impact NO-1 is "Construction of the proposed project would not cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. (Less than Significant)." (DSEIR, pp. 5.3-20 to 5.3-23.)

Impact NO-5 is "Operation of the proposed project would cause a substantial permanent increase in ambient noise levels in the project vicinity. (Significant and Unavoidable with Mitigation)." (DSEIR, pp. 5.3-32 to 5.3-39.)

Frank Hubach Associates, Inc *4905 Central Ave, Ste 100*
Richmond, CA 94804

Acoustics and Vibration
Engineering Consultants

Phone 510-528-1505
Fax 510-528-1506
Email: info@fha-eng.com

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In my opinion the DSEIR does not use a reliable methodology to determine whether Impact NO-1 or NO-5 is significant.

For Impact NO-1 and Impact NO-5, the DSEIR uses a threshold of significance of the "ambient plus increment" type. For Impact No-1, the "ambient plus increment" threshold of significance is whether the "the increase in noise levels over existing conditions would be less than 10 dBA." (DSEIR, p. 5.3-23.)

This type of threshold discounts the significance or severity of pre-existing noise levels and treats them as if they are irrelevant to whether the incremental change caused by the Project is "significant." Refer to additional detailed information in my 22 July 2015 report.

50
[LC-NOI-1]

12.2.1 Generator Relocation

"Because the generators would no longer be in a sub-grade location with the project refinements, the potential noise impacts of the routine generator maintenance operations at the at- or above-grade locations were assessed quantitatively, as described below." (pg 12-2)

The generator relocation does not specifically address (in terms of decibels) the potential impact to pedestrians, bicyclists or motorists when in close proximity to the generators. Only the two large 150 kW generators are fitted with noise control treatments which will have some localized benefit. This is potentially significant impact.

51
[LC-NOI-2]

12.2.3 Transportation Improvements

"*Similarly, the temporary impacts of construction noise would be limited to standard construction equipment such as a backhoe and jackhammer, which would not be expected to result in a significant construction noise impact, as these equipment types comply with the construction noise limits of the Sections 2907(a) and (b) of the Police Code, as discussed on page 5.3-14 of the SEIR and would occur in an area with elevated ambient background noise based on modeled baseline traffic volumes derived from the San Francisco County Transportation Authority travel demand model.*" (pg 12-11)

This work along King Street has an unspecified noise impact that is in my opinion potentially significant.

12.3.2 Other Construction Refinements

"Refinements to the proposed construction techniques that were described in the Draft SEIR include: addition of on-site soil treatment, possible use of dewatering pump generators, and removal of rapid impact compaction equipment." (pg 12-16)

The dewatering pump generators added do not specifically address (in terms of decibels) the potential impact to pedestrians, bicyclists or motorists when in close proximity to the generators. This is potentially significant impact.

"*The pug mill would be enclosed within a large canvas tent to control dust and noise generated by the plant."* (pg 12-17)

It is unlikely the tent will attenuate any pug mill noise. This is potentially significant impact.

51 [LC-NOI-2] cont.

12.4 Muni UCSF/Mission Bay Station Variant

"*Assuming use of a backhoe, jack hammer and truck crane, construction activities for the demolition of the existing northbound platform wouldgenerate noise levels of 79.4 dBA, Leq at the nearest receptor (Hearst Tower), 75 feet away, which would result in a less than 10 dBA increase over existing ambient noise levels of 71.2 dBA, Leq.*" (pg 12-28)

This is an 8.2 dB increase above ambient and in my opinion significant.

Using these "ambient plus increment" thresholds where existing noise levels are already too high, as shown in Tables 5.3-9 and 5.3-10 (DSEIR, pp. 5.3-34, 36), disregards the fact that the Project will make already severe conditions worse. In addition, using these "ambient plus increment" thresholds for operational noise results in an unsustainable gradual increase in ambient noise. It is a formula for ever-increasing noise levels because each new project establishes a new, higher, baseline; then when the next project is approved, the incremental change will be added to the new baseline.

Therefore, the operational impact assessment needs to be redone using valid, science-based thresholds that relate to actual human health and welfare effects of noise.

52 [LC-NOI-1]

O-MBA20L7

Warriors Event Center in Mission Bay
Noise Impact
2 November 2015

In my opinion, is the Project will cause a significant increase in Impact NO-1 and Impact NO-5 above levels existing without the project.

52 [LC-NOI-1] cont.

Very truly yours,

Frank J. Hubach
President

FJH:fjh

J:\64802\AcousticReport4.wpd

Frank Hubach Associates, Inc *510-528-1505*

O-MBA21L8

From: Tom Lippe [mailto:lippelaw@sonic.net]
Sent: Tuesday, November 03, 2015 7:40 AM
To: Guerra, Claudia (CII); Warriors, PLN (CPC)
Cc: Kelly Marie Perry; Susan Brandt-Hawley; Osha Meserve; Patrick Soluri; Josh Schiller; Demetri Blaisdell
Subject: Re: Comments on Final SEIR re Warriors Arena Project

Dear Ms Bohee and Mr. Bollinger:

Attached hereto is Exhibit F (a report by Dan Smith) to my November 2, 2015, comment letter on the Final Environmental Impact Report (FSEIR) and Responses to Comments (RTC) for this Project delivered by email earlier this morning.

Also, please consider this email a comment on the process the OCII has chosen to follow for purposes of certifying the FSEIR.

The OCII's EIR preparation team includes 48 people, including 15 from several City departments and another 33 from six different consulting firms. (DSEIR, p. 9-1.) OCII's team spent 3 months preparing responses to comments and conducting new environmental analysis for changes to the Project, including a new Project Variant, ultimately publishing 2,624 pages of new analysis and data.

Yet the OCII gave the public only 11 days to review the FSEIR/RTC before meeting to certify it. Then, the October 23, 2015, notice of publication of the Response to Comments informed the public they would have no opportunity to comment on the FSEIR/RTC. But the OCII hearing agenda for November 3, 2015 published on October 29, 2015, reversed course and suggested that public comment on the SFEIR/RTC would be heard at the hearing.

As a result, the Mission Bay Alliance's legal team, with its consultants, has not had adequate time to review and comment on the FSEIR/RTC, depriving the Alliance of a fair trial on the Project approvals, including certification of the SEIR, per Code of Civil Procedure section 1094.5(b).

Moreover, the Mission Bay Alliance's legal team has submitted and will submit a large volume of new comments for consideration by the Commission. Since the members of the Commission cannot be expected to review this volume of new information before the close of today's hearing, the Alliance requests that Commission continue the hearing for at least three weeks to: (1) provide a fair trial on the Project approvals, (2) allow the Alliance to complete its review and comment on the FSEIR/RTC, and (3) allow the Commission to review the comments submitted for today's hearing.

1
[LC-GEN-4]

Finally, I note that the vast majority of the volume of documents submitted for today's hearing consists of the documentary history of the City's violations of its NPDES permits (see Exhibit M). This submission reflects the fact that my July 24, 2015 comment letter regarding hydrology, water quality and biological impacts observed that the DSEIR's heavy reliance on City compliance with its NPDES permit to ensure the Project's combined stormwater and sewage impacts are less than significant is an unsupported assumption. My previous comment requested that the City support this assumption with evidence. The RTC fails to do so. Therefore, the Alliance gathered that evidence (contained in Exhibit M), and it shows the City has a continuous pattern of violating its NPDES permits.

2
[LC-HYD-1]

Tom Lippe
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O-MBA21L8

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On 11/3/2015 5:58 AM, Kelly Marie Perry wrote:
> Dear Ms Bohee, Mr. Bollinger -
>
> Attached, in .pdf format, please find today' correspondence with
> exhibits.
>
> Due to file size, I will send a total of three (3) emails with all
> documents attached, with the exception of Exhibits F that will follow
> under separate cover.
>
> Also, please note the Exhibit M is very large so this Exhibit is being
> hand-delivered in hard-copy in binders and on disc to the OCII hearing
> in City Hall today. I am however attaching Exhibit M's table that
> list all the exhibits.
>
> Thank you for your attention to this matter.
>
> Kellu
>
>

O-MBA22B4

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preservationlawyers.com

November 3, 2015

Tiffany Bohee, OCII Executive Director
Brett Bollinger, EIR Coordinator
via email warriors@sfgov.org

Subject: Comments on the Final Subsequent EIR
Warriors Event Center & Mixed Use Development

Dear Director Bohee and Mr. Bollinger:

The Mission Bay Alliance is concerned about many ongoing defects in the CEQA process for the proposed Warriors Event Center. These include violations of CEQA's procedural mandates, material inadequacies of the Subsequent EIR, and OCII's unsupported substantive findings. In the minimal 11-day time frame allotted for public review of the new and voluminous OCII CEQA documents, including the Final SEIR, technical reports, and proposed findings, my co-counsel and I have done our best to bring these issues to the attention of the Commission on behalf of the Alliance. 1 [LC-ERP-1]

1. The Final SEIR Must Be Certified by the Planning Commission

Approval of a CEQA document must comply with local ordinances as well as with California environmental law. (*E.g.*, *Citizens for the Restoration of L Street v. City of Fresno* (2014) 229 Cal.App.4th 340.) While OCII is a separate legal entity with discrete responsibilities under redevelopment law, it is under the legislative control of the Board of Supervisors per state statutes and local ordinances. For CEQA purposes, OCII's duties align with those of the City of San Francisco. The Planning Department was thus identified as a co-lead agency in the CEQA process for the 1998 Mission Bay South Redevelopment Plan. 2 [LC-ERP-5]

CEQA is a process-driven statute that must be followed to the letter. The Event Center's Subsequent EIR reflects its preparation by the City Planning Department and the City will consider many of the Event Center's required approvals. If the current SEIR is certified, the Board of Supervisors will decide administrative appeals of its inadequacy as the elected decision-making body. The Planning Code requires initial consideration of the certification of the Final SEIR to be conducted by the San Francisco Planning Commission, and that must happen before its consideration by OCII. The current process violates CEQA.

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2. The Final SEIR Responses to Comments is Inadequate

Every lead agency is required to provide a "good faith, reasoned analysis" in responses to comments on the EIR; "[c]onclusory statements unsupported by factual information will not suffice." (Guidelines, § 15088, subd.(b); see *Laurel Heights Improvement Association. v. Regents of the University of California* (1993) 6 Cal.4th 1112, p. 1124.) When a comment raises a significant environmental issue, the EIR must respond in detail, providing reasons why the comment was not accepted. 3 [LC-ERP-1]

Sutter Sensible Planning, Inc. v. Board of Supervisors (1981) 122 Cal.App.3d 813 explains that detailed EIR responses "insure the integrity of the process of decision by precluding stubborn problems or serious criticism from being swept under the rug." (*Id.*, p. 820.) *Flanders Foundation v. City of Carmel-by-the Sea* (2012) 202 Cal.App.4th 603 ordered issuance of a writ when an EIR failed to respond to a comment proposing a reduced-size parcel for an environmentally damaging project. (*Id.*, pp. 616-617.)

a. *Land Use.* The Alliance submitted a letter from the undersigned counsel on November 2, 2015, reiterating in detail how the proposed Event Center's sports arena is not consistent with any of the principal or secondary uses allowed by the Mission Bay South Redevelopment Plan, including the secondary uses now being invoked by OCII for the first time in the Final SEIR. That letter is here incorporated by reference. The Draft SEIR did not address land use issues because the Initial Study and Notice of Preparation posited that all of the uses proposed by the Event Center were encompassed within the 'Nighttime Entertainment' secondary use that had been analyzed in the 1998 Mission Bay EIR. 4 [LC-PP-1]

That EIR's refusal to analyze the project's land use inconsistencies has not been cured by the Responses to Comments, which now fails and/or inaccurately responds to the Alliance's DSEIR comments about secondary use categories, the Event Center's conflicts with Mission Bay South design criteria, including Vara Blocks, and impacts to community character. The inadequate Responses to Comments as to these land use inconsistencies constitutes a separate ground of legal error.

The SEIR should be revised and recirculated after amendment of the Mission Bay South Redevelopment Plan to provide for a consistent principal or secondary use.

b. *Alternatives.* The Alliance commented on the SEIR's inadequate analysis of the 'no project' alternative and failure to include a potentially-feasible off-site alternative. Following the SEIR comment period, the Alliance informed OCII that it had located a 5 [LC-ALT-1]

O-MBA22B4

feasible off-site alternative that met project objectives and reduced impacts, and requested its consideration. This should still happen, and the site at Pier 80 should be considered in a revised and recirculated EIR. 5 [LC-ALT-1] cont.

In response, the Final SEIR offers rote statements like "CEQA does not require analysis of 'every imaginable alternative' but rather it gives agencies the flexibility to eliminate certain alternatives that either do not reduce environmental impacts or do not further the project's main objectives." The Alliance agrees, but the statement neither addresses nor cures this particular EIR's failure to analyze the 'no project' alternative or a potentially-feasible off-site location.

As to the 'no project' alternative, the Alliance finds the Responses to Comments again inadequate. Among other things, the responses both dismiss and acknowledge that the UCSF-owned Block 33 is eligible for a tower. That opportunity remains relevant to the discussion as it impacts the extent of reasonably foreseeable development at the Event Center project site if the project does not proceed. The EIR responses also continue to overestimate the traffic impacts of 'no project' by speculative assumptions as to the parking likely to be provided by developers for proposed retail uses. 6 [LC-ALT-2]

The EIR's refusal to consider a potentially-feasible off-site alternative violates CEQA, which repeatedly confirms that consideration of alternatives is the key to reducing project impacts while accomplishing objectives. The SEIR responses to this issue treat CEQA like a game, tangentially acknowledging that the initial site at Piers 30-32 was too expensive and would require a public vote for a site so unpopular that the Warriors abandoned it, but then repeating over and over that the site is at least "potentially feasible for purposes of this SEIR." (Responses, 13.24-8.) In other words, the rejected site is not feasible in the real world, but can somehow be considered adequate to comply with CEQA under the substantial evidence standard of review. Not so, both as to the site and standard of review. The infeasibility of the site is reflected in the CEQA findings that dismiss it, citing its uncertain approval and significantly more severe impacts than the Mission Bay project. 7 [LC-ALT-3]

c. Cultural Resources. In response to the Alliance's references to new information regarding archaeological impacts and inadequate studies, the SEIR provides a conclusory reference to new archaeological study in October 2015 that resolves concerns. As with the other new studies provided within the 11-day review period for the SEIR Responses to Comments, the public has not had sufficient opportunity to review the technical information. Further, the Responses to Comments is insufficient as an informational document because it fails to provide analysis regarding its conclusory 8 [LC-CULT-1]

O-MBA22B4

dismissal of archaeological concerns based on the referenced new studies. There is thus insufficient basis for findings that archaeological impacts are infeasible. 8 [LC-CULT-1] cont.

3. The Proposed Findings on Alternatives are Inadequate

The SEIR does not analyze the alternate site proposed by the Alliance near Pier 80, nor circulate that analysis for public comment and so has no basis to make conclusory findings rejecting the alternative. The reasons provided in OCII's proposed findings are unsupported and inadequate. The site is three times as large as would be required for the Event Center project and need not utilize any of the City-owned property nor any particular configuration of the privately-owned lots should there be an unwilling seller. There is no evidence provided that the site could not be acquired within a reasonable time period.

Further, case law confirms that potential zoning adjustments are not grounds for infeasibility, as they are within the City's power. It is self-evident that the claimed limits to transportation services under current schedules are easily remedied, and the findings do not provide any studies to back up conclusory statements regarding traffic, air quality, hydrology, or water quality impacts. Again, since only a third of the site is needed to accommodate the event center, all of the impacts (if shown to have concern after sufficient technical review) can be avoided or mitigated. As stated above and in the Alliance letter proposing this site for consideration as an alternative, the EIR is inadequate for failing to consider an off-site alternative and must be revised and recirculated to do so before any findings of infeasibility can be made. The site near Pier 80 is suggested by the Alliance as potentially feasible and deserving of study. 9 [LC-ERP-3]

Thank you for your attention.

Sincerely yours,

Susan Brandt-Hawley

O-MBA23S7

SOLURI MESERVE
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November 3, 2015

SENT VIA EMAIL (MTABoard@sfmta.com)

Tom Nolan, Chairman
San Francisco Municipal Transportation Agency
Board of Directors
1 South Van Ness Avenue, 7th Floor
San Francisco, CA 94103

RE: Comments on November 3, 2015 Agenda Item No. 13 re: Warriors Event Center and Mixed-Use Development Project at Mission Bay Blocks 29-32

Dear Chairman Nolan and Members of the Board:

This firm represents the Mission Bay Alliance (the "Alliance") with respect to the Warriors Event Center Project ("Project"). These comments address the Final Subsequent Environmental Impact Report for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("FSEIR") as well as the SFMTA's consideration and approval of the Project itself.

The Project's FSEIR is defective as an informational document with respect to the analysis and public disclosure of impacts and mitigation measures regarding transportation. Impermissibly buried within the "project description" are *de facto* mitigation measures for the Project's transportation impacts. These mitigation measures include both one-time capital improvements and ongoing expenditures as set forth in the Transportation Management Plan ("TMP") and Transit Service Plan ("TSP"). The City's strategy of conflating analysis of the Project's design features and mitigation measures violates CEQA. (See, e.g., *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645.) The prejudice associated with the City's strategy, other than simply obscuring the City's massive public subsidy for the Project, is that the EIR "fail[s] to consider whether other possible mitigation measures would be more effective." (*Id.* at 657.)

The City also appears to rely on the incorporation of these plans into the project description in order to conceal from the public the City's failure to require full mitigation of the Project's impacts from the applicant. It is a bedrock principle of the California Environmental Quality Act (Pub. Resources Code, §§ 21000 et seq. ("CEQA"), 21002; see also CEQA Guidelines, § 15126.4) that development projects should mitigate their

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[LC-PD-1]

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environmental impacts to the extent feasible. With respect to the Project's transportation impacts, however, the City deviates from this principle and instead adopts an odd, *ad hoc* "fair share" fee program to supposedly mitigate project-level impacts. (*Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173 (*Anderson First*).) As a threshold matter, the SEIR never clearly discloses to the public that it essentially relies upon "fair share" payments from the Project in order to mitigate its project-level transportation impacts, which renders the SEIR defective as an informational document. Had the SEIR done so, it would have been apparent that the SEIR failed to disclose necessary information about this fair share program.

The payment of a "fair share" impact fees may constitute adequate mitigation if they "are part of a reasonable plan of actual mitigation that the relevant agency commits itself to implementing." (*Id.* at 1188-89.) The *Anderson First* decision identified the information that is required in an EIR to establish the adequacy of a "fair share" mitigation measure, which includes the following:

(i) An identification of the required improvement;
(ii) An estimate of the cost of the required improvement;
(iii) Sufficient information to determine how much the project would pay towards the improvement; and
(iv) The fees must be part of a reasonable, enforceable plan or program sufficiently tied to the actual mitigation of the impacts at issue.

(*Ibid.*)

The SEIR fails to provide this necessary information. While the SEIR mentions the TMP and TSP as addressing the Project's transportation impacts, the SEIR fails to identify the total costs of the improvements, the Project's allocated contribution, and the enforceable plan or program to contribute the Project's "fair share."

Although not included in the Project's CEQA documentation, some of this necessary information is contained in the Event Center Expenditure Plan, which the SFMTA is scheduled to review and approve on November 3, 2015 ("Expenditure Plan"). (See Enclosure 3 to Staff Report.) The Expenditure Plan reveals the legal deficiencies in the City's mitigation strategy for the Project's transportation impacts. Considering only one-time "capital uses" and "capital uses allocation to project," (i.e., excluding ongoing costs to mitigate the Project's transportation impacts), it reveals that the total cost of these improvements is $64,663,474, and the Project's fair share allocation is $61,898,909. Of the amount "allocated" to the Project, however, only $27,390,335 will actually be paid by the project applicant, over the course of several years with the City fronting the funds for the improvements from the General Fund. Thus, the Project is contributing less than 50

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cont.

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percent of its allocated fair share contribution that is necessary to mitigate the Project's transportation impacts. To make matters worse, only $19,434,536 is coming from an existing and enforceable impact fee program. The balance of the project applicant's contribution, approximately $7,955,799, is the result of the City's planned redirection of General Fund revenues.

In other words, rather than simply require the project applicant to be responsible for the capital improvements needed to mitigate its project-level impacts, the City establishes a fair share fee program and then does not even require the applicant to pay the fair share fee – instead voluntarily giving up General Fund revenues that are intended to support other Citywide programs and services. By cloaking this deficient mitigation strategy as a design feature of the Project, the City never engages in a meaningful analysis of potentially feasible mitigation measures involving the project applicant actually mitigating these project-level impacts.

A similar deficiency applies to the Project's ongoing costs to mitigate its project-level transportation impacts. Total ongoing annual costs to mitigate the Project's transportation impacts are estimated at $8,209,318 in FY18-18. Of this amount, $2,773,110 in revenue is not paid from an enforceable impact fee program but rather re-directed from the General Fund. What more, significant additional City revenues, which are not even generated by the Project but rather "allocated" to the Project from sources such as off-site parking and hotel tax, will be re-allocated to pay for the Project's ongoing mitigation for project-level transportation impacts. These reallocations of General Fund revenues cannot constitute an enforceable plan that is subject to future discretionary actions by the Board of Supervisors. Even the anticipated future adoption of the Mission Bay Transportation Improvement Fund ordinance is inadequate to ensure future reallocations of General Fund revenues because action by ordinance is cannot bind future Boards. (*McMahan v. City and County of San Francisco* (2005) 127 Cal.App.4th 1368.)

In short, the City fails without explanation to require the applicant to bear responsibility for fully mitigating its own project-level impacts. Instead, the City is setting up a flawed *de facto* fair share fee program to pay for this project-level mitigation, and redirecting revenues generated by the Project and elsewhere to cover the funding gap for these mitigation measures. This deficiency is nowhere disclosed to the public in the SEIR. The City may not rely on the preparation of various "plans" as a smokescreen to conceal from the public the Project's failure to mitigate its own project-level impacts and massive public subsidy needed to make up for that deficiency. The SEIR is misleading, and fails as an informational document with respect to mitigation for transportation impacts.

The City's action to mitigate the Project's transportation impacts is also an undisclosed public subsidy that triggers substantive and procedural mandates by the City

1 [LC-PD-1] cont.

O-MBA23S7

before committing to such subsidy. The attached report by Dr. Jon Haveman explains that the redirection of General Fund and other revenues to mitigate the Project's impacts represents a loss of revenue to the City (see Exhibit 1), which in turn constitutes a public subsidy under California law. More specifically, these subsidies include committing to direct General Fund revenues to pay for light rail cars, construction of transportation improvements, public safety and traffic officers, etc., "allocating" parking/hotel tax revenues from other properties to pay these expenses.

Because the TMP and TSP are built into the project description, the City's approval of the Project commits the City to the subsidy as set forth in these plans, which is further reinforced by the City's approval of the Expenditure Plan. California law requires that the City must provide public notice and a public hearing, as well as detailed information about the purpose, nature, extent and effect of such subsidy, prior to making such a commitment. The City has failed to comply with these substantive and procedural mandates prior to approving this public subsidy for the Project.

1 [LC-PD-1] cont.

* * *

Please feel free to contact my office with any questions.

Very truly yours,

SOLURI MESERVE
A Law Corporation

By: Patrick M. Soluri

PS/mre

Attachment: Exhibit 1, Report from Dr. Jon Haveman dated November 2, 2015

cc Board Members (via email):

Cheryl Brinkman, Vice-Chairman
Gwyneth Borden
Malcolm A. Heinicke
Joél Ramos
Cristina Rubke

O-MBA23S7

EXHIBIT 1

O-MBA23S7

Warriors Stadium Economics: Uncertainty and Alternatives

Produced by:

Marin Economic Consulting

Jon Haveman, Principal

415-336-5705
Jon@MarinEconomicConsulting.com

November 2, 2015

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Executive Summary

In order for the Golden State Warriors (GSW) to move to San Francisco, the City must make significant infrastructure investments in transit and commit to providing over $6 million in support each year that the new arena operates. Although estimates of the costs to the City and estimates of City revenues exist, a cash flow analysis of this project has not been produced. Nor has the project been subject to a comparison with plausible alternatives. With a project of this magnitude and with the significant external costs imposed on San Francisco, it is deserving of such an analysis.

This report provides both a cash flow analysis of the arena development and a comparison with a plausible alternative. It also provides a discussion of some of the assumed revenues associated with the project. In particular, the assumptions regarding hotel/motel tax revenues and parking taxes are optimistic. The reality could be millions of dollars less than expected.

Although the cash flow analysis suggests that the project will turn a surplus of revenue in the fourth year of arena operations, a comparison with an alternative development suggests that from a financial perspective the City could do much better. If a biotech facility were constructed in place of the arena, it is possible that City revenues over the course of 22 years (two years of construction and 20 years of operation) could be more than $39.9 million higher in net present discounted value terms, or $1.8 million per year over 22 years. This comparison is with a conservative investment. With a more aggressive development option, the net present discounted value of revenues could be as much as $150 million higher, or nearly $7 million per year.

It is worth noting that the effective subsidy provided by the City of San Francisco to provide transit infrastructure and traffic mediation amounts to roughly $150 million over the same 22 years, again in present discounted value terms. Were this subsidy not necessary, the Warriors development project would have a revenue impact to the City comparable to that of the more aggressive development option. Unfortunately, the Warriors development project requires the extensive subsidy while a biotechnology center would not. The biotechnology center, whether using conservative or aggressive assumptions, provides greater net revenues to the City of San Francisco than does the development including the Arena, by between $1.8 and $7 million per year.

These figures can be thought of as the amount that San Franciscans are paying to bring the Warriors to town. It is the amount of revenues that the City would forgo with the GSW project, relative to a plausible alternative. This is not to say that the project is a bad idea, but merely to point out what is being given up in order to accommodate the Warriors' move.

Key Findings

1. A cash flow analysis of the arena through the first twenty years of operation suggests net revenues for San Francisco of $96 million. This is net of City expenses of approximately $150 million during this time for transit and traffic mitigation.
2. This $150 million of City spending in support of the Arena represents an implicit subsidy to the project. The City is funding transit infrastructure and the mitigation of traffic and transportation issues related to the functioning of the arena.
3. Although the Arena generates significant revenues for San Francisco, the City's costs will exceed its revenues from the development for at least the first three years of Arena operation, putting the taxpayers on the hook for the difference.
4. There are elements of the estimates of City revenues that are filled with uncertainty. In particular, the hotel/motel and parking revenues are highly speculative. This uncertainty may imply a broader burden for City taxpayers.
5. If hotel/motel revenues are overstated by half, which is possible, that would reduce City revenues by $13.2 million in the first 20 years of Arena operation.
6. If an alternative development, one suited to biotechnology, were pursued, the City's net revenues would be nearly $40 million higher and possibly as much as $150 million higher over 22 years, or $7 million per year.
7. An alternative development would have considerably larger economic impacts for the rest of the San Francisco Economy than would an arena, and would generate significantly more jobs, more than 2,000 on-site. Oracle Arena currently generates just 494 jobs.
8. An alternative development would generate as much as $1 billion in direct economic activity on-site and perhaps as much as an additional $1 billion in ancillary benefits to the broader San Francisco economy.
9. Forgoing the biotechnology development and pursuing the Arena reduces net revenues to the City of San Francisco by $2 to $7 million per year.

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1: Introduction

In 2017, the Golden State Warriors are expected to begin playing in San Francisco. Although this is an exciting development for the City of San Francisco, the economics of the Warriors presence in the City are unclear. There are likely to be significant revenue benefits for the City, but welcoming the Warriors will also involve significant infrastructure investments and ongoing expenses for the City and County of San Francisco. The net effects of these revenues and costs have not been adequately addressed.[1]

It is not clear whether San Francisco is importing a lucrative asset or a financial burden; that is, it is not clear whether the revenues associated with the Warriors play in San Francisco exceed the considerable upfront investments that the City must make. It is also an open question as to what exactly the City might be giving up in order to host the Warriors. The 12-acre parcel on which the arena is to be built is a valuable piece of real estate. In 2010, Salesforce paid $278 million for a 14-acre site that includes the property in question. The property, located as it is across the street from UCSF and near a variety of biotech companies, seems a likely candidate for a biotech friendly building.[2] Were this to happen, it would yield significant benefits for the City. Whether or not these financial benefits exceed those associated with the Warriors is the subject of this report.

The report proceeds to review the costs and benefits associated with the Warriors, as they have been made public. This is followed by an estimate of the likely benefits of a biotech development occupying the same space. The benefits of the GSW plan are then examined from a perspective of robustness, whether or not they are likely to come to pass.

This report provides a cash flow analysis of the GSW project and compares that analysis with an alternative development that includes a biotechnology-oriented commercial structure in place of the arena. The GSW project is cash flow positive, but not until at least the fourth year of operations. Relative to the alternative development, even after 20 years of operating, the GSW project falls short in terms of net government revenues by approximately $39.9 million, or $1.8 million per year over 22 years. Alternative developments, with more aggressive assumptions, though still plausible, suggest that City revenues could increase by as much as $151.6 million after 22 years, or $6.9 million per year, without the need for heavy subsidization on the part of the City in the early years. From a purely financial perspective, the GSW project is a significant drain on City revenues relative to what alternative developments might yield.[3]

[1] Accepting the team also results in a significant revenue hole for the City of Oakland in that most events that currently take place at Oracle Arena are projected to move to the new arena.

[2] Its neighbors would include UCSF, Celgene Corporation, National Multiple Sclerosis Society, venBio, Nurix, Clovis Oncology, FibroGen, and Illumina, among others.

[3] The methodology used in this report is comparable to the methods and assumptions used by EPS in producing its fiscal impact analysis of the GSW arena. The Appendix provides a set of tables that indicate where common assumptions are used.

2: Benefits and Costs of Hosting the Warriors

– Benefits/Revenues

As with any economic activity, there are certainly financial benefits for the City of San Francisco associated with hosting the Warriors. A report has been produced for the City of San Francisco that provides a fiscal analysis of the GSW project.[4] These benefits are derived from one-time revenues from the purchase of the land and arena construction and ongoing benefits associated with the events that the stadium hosts. The ongoing benefits also include revenues from commercial and retail activity built into the project, as well as parking revenues both on-site and off-site and off-site hotel and motel taxes. Table 1 provides a summary of an estimate of those benefits. Annually, stadium, retail, and office operations associated with the development are estimated to provide just over $14.1 million in revenues to the City of San Francisco.

Table 1. Summary of San Francisco Revenues from Ongoing Stadium Operations (Thousands of 2014 dollars)

Annual Project-Generated Revenues	General Fund Revenues	Dedicated and Restricted Accounts	All Accounts
Revenues From on-Site Businesses	$9,626 (84%)	$1,883 (73%)	$11,509 (82%)
Revenues From off-Site Hotels and Parking	$1,887 (16%)	$714 (27%)	$2,601 (18%)
Total Annual Project-Generated Revenues	$11,513 (100%)	$2,597 (100%)	$14,110 (100%)

Source: EPS and Keyser Marston Associates

Of these $14.1 million in revenues, $11.5 million are associated with the arena and on-site businesses. Although the majority of these revenues accrue to the general fund ($9.6 million), nearly $2 million goes directly to dedicated and restricted accounts. At the same time, nearly $2.6 million are estimated to be from off-site sources, $714 thousand of which are destined for dedicated and restricted accounts.

Table 2 provides estimates of detailed categories of revenues associated with ongoing economic activity once the development is completed. The largest categories of revenue include the stadium admission tax ($4.3 million), gross receipts taxes ($2.5 million) property taxes ($2.5 million, including both general fund and MTA revenues), hotel/motel or transient occupancy taxes ($1.7 million), and parking taxes ($2.4 million). These five categories account for the vast majority of revenues associated with the development.

As mentioned, there will also be one-time revenues associated with the construction of the arena and the accompanying office and retail space (Table 3). These benefits amount to just over $27.6 million, the vast majority of which is associated with the TIDF, or Transportation Impact Development

[4]Economic Planning Systems, *San Francisco Multi-Purpose Venue Project - Fiscal Impact Analysis: Revenues*, 9/25/15. (EPS)

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Table 2. Details of San Francisco Revenues from Ongoing Stadium Operations (2014 dollars)

Item	Amount
Annual General Revenue	
Property Tax (General Fund)	$912,000
Property Tax in Lieu of VLF	$868,000
Sales Tax	$521,000
Hotel/Motel Tax (General Fund)	$1,667,000
Parking Tax	$482,000
Stadium Admission Tax	$4,336,000
Gross Receipts Tax	
On-site	$2,431,000
Off-site	$42,000
Utility User Tax	$254,000
Subtotal	$11,513,000
Annual Other Dedicated and Restricted Revenue	
Special Fund Property Taxes (Children's, Library, and Open Space)	$148,000
Public Safety Sales Tax	$260,000
San Francisco County Transportation Authority Sales Tax	$260,000
MTA Parking Tax	$1,929,000
Subtotal	$2,597,000
Total Ongoing Revenues	$14,110,000

Source: EPS, 9/25/15, Table 1

Fee.[5] Another significant source of one-time revenue comes in the form of a Property Transfer Tax, $4.2 million. Sales taxes and gross receipts taxes collected during construction add another $5.4 million.

[5]http://www.sf-planning.org/ftp/files/legislative_changes/new_code_summaries/120523_TIDF_Transportation_Impact_Development_Fee_Update.pdf Medical and Health Services, and Retail/Entertainment economic activity categories was increased to $13.30 per square foot, except that the rate for museums, a subcategory of CIE, are $11.05 per square foot, a reduction from the current amount. The rate for the Management, Information and Professional Services (MIPS) and Visitor Services economic activity categories was increased to $12.64 per square foot, and the rate for the Production/Distribution/Repair (PDR) category was reduced to $6.80 per square foot.

Table 3. Summary of One-Time Revenues from Stadium Construction (2014 dollars)

Item	Difference
City Fees (per gross building sq. ft.)	
Child Care	$662,000
Transit Impact Development Fee	$17,436,000
Other One-Time Revenues	
Sales Taxes During Construction	$2,355,000
Gross Receipts Tax During Construction	$2,953,000
Property Transfer Tax from Initial Land Sale	$4,200,000
Total One-Time Revenues	$27,605,000

Source: EPS, 9/25/15, Table 2. Revised by Marin Economic Consulting to reflect changes in Table A-6 of the EPS report.

– Costs

As with the benefits, there are also one-time and ongoing costs. The one-time costs are primarily those associated with enhancing transportation infrastructure and amount to $55.3 million.[6] These costs include Transit Investments (the purchase of light rail vehicles), the installation of crossovers, the construction of a new center boarding platform, power augments to idling event trains, traffic/signals engineering investments, and a Mariposa Street restriping study.

These expenses are spread out over a four-year period, with the vast majority of expenses occurring in the 2016-17 MTA fiscal year. A major expenditure on light rail vehicles is slated to take place in the 2017-18 FY, when the Event Center begins operating. The costs to MTA are heavily loaded in the early years of the project, before ongoing revenues have begun. Estimated one-time revenues will be available during this time to cover expenses, but they will fall short of the total by approximately $30.2 million.[7] This difference will be covered by contributions from San Francisco's General Fund, whether all at once or through the financing of these expenditures that are net of revenues.

Table 4 provides the details of the City's estimates of ongoing expenses related to the operation of the Event Center. As of early October, estimated annual net ongoing costs associated with operations at the Event Center amount to $6.2 million.[8] The vast majority, $5.1 million, are associated transit costs. It is worth noting that this estimate has decreased by $0.4 million between May and

[6]One-time costs are from SFMTA, **Capital and Operating Cost Estimates for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32**, 10/6/2015. Estimates are in 2014 dollars.

[7]This figure is the difference between $57.8 million, the total estimated capital uses estimate (not just that allocated to the project), and the total one-time revenues from Table 3.

[8]Ibid. The word "net" is included because the City has estimated revenues from fares and parking from riders going to events at the arena. These revenues amount to approximately $1.8 million, split roughly evenly between the two sources.

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October of this year. Other expenses are reported as they were presented in May, including nearly $1 million in additional policing, and $200 thousand in expenses incurred by DPW.

Table 4. Ongoing Costs of the Arena (millions of 2014 dollars)

Agency	May 18 Estimates	October 6 Revisions
SFMTA	$5.5	$5.1
SFPD	$0.9	
DPW	$0.2	
Total	$6.6	$6.2

Source: Golden State Warriors Arena: Event Management OCII Commission Presentation, May 18, 2015, and MTA, October 6, 2015.

– Net Benefits

The project comes with considerable costs and benefits. Both upfront net costs and ongoing net revenues are considerable. It is our view that the original EPS report was incomplete in not considering the implications of the project over time. It failed to provide a comparison of overall costs and benefits associated with the GSW project. The reviewer, Keyser Marston Associates, appeared to agree with the EPS approach, saying that a "cash flow approach is appropriate to evaluate a multi-phase project, which does not apply to this project." We respectfully disagree. There are two stages to this project: first, the one-time infrastructure investments and revenue implications of construction and parcel purchase, and second, the ongoing costs and revenues. The project's benefits to the City come inherently in two stages. If both stages yielded a net benefit, the need for a cash flow approach would not be nearly as acute. As the first stage is significantly negative, the overall net benefits must be evaluated over time in order to properly evaluate the project.

This has not been publicly done. Here, we consider a 20-year period following the construction of the Event Center. Given that many of these revenues accrue many years in the future, it is necessary to discount them to today's dollars. The bottom line is the present discounted value of the net stream of revenues to the City of San Francisco.

Assumptions crucial to the present value discount calculation:

1. Discount Rate: 4.0%
2. Rate of inflation: 2.5% (2% for property taxes, as per Proposition 13)

Table 5 provides an estimate of the present discounted value of net revenues to the City of San Francisco, using estimates from the EPS report of September 25, 2015 and from documents from the City of San Francisco. Once the facility has been operating for 20 years, net revenues are ex-

pected to be on the order of $95.7 million, or approximately $4.3 million per year over a 22-year period including two years of construction and 20 years of operation. This estimate includes the upfront expenses incurred by the City as well as the ongoing expenses associated with event traffic mitigation.

Table 5. Net Benefits of GSW Event Center Project over 22 years (Millions of Present Discounted 2014 dollars)

	Benefits	Costs	Net Benefits
One-Time	$27.6	$55.3	−$27.7
Ongoing	$221.4	$98.0	$123.4
Total	$249.1	$153.3	$95.7

Source: Calculations by Marin Economic Consulting.

The project pencils out as estimated. This calculus, however, begs two important questions:

1. This is a 12-acre plot of land in the middle of a biotechnology hub. Are there better uses for this land from a revenue perspective?
2. Estimating the costs associated with event management is a more certain endeavor than estimating the benefits. How certain is it that the benefits will materialize?

For a project of this magnitude, it is vitally important to evaluate the potential for plausible alternatives to provide more benefits than the project in question. It is also important to consider robustness tests for the revenues in question. Neither of these issues has been publicly addressed. This report will present plausible revenues associated with an alternative development, a space designed with biotech in mind, and will discuss weak points in the revenue estimates presented above.

3: On the Economics of Biotech as an Alternative

When evaluating the benefits of an economic endeavor, an exploration of alternatives is vital to understanding the full implications of an investment. Suppose that instead of building a 750,000-square-foot arena, the amount of commercial space on the property were doubled. In this section, we consider such an investment. In this exercise, we follow as closely as possible the assumptions contained in the EPS estimate of revenues associated with the GSW project.

Important assumptions associated with this analysis include:

1. Instead of a 750,000-square-foot arena, a commercial facility is constructed that provides 522,000 square feet of space. This constitutes an exact doubling of the commercial space in the GSW plan. This alternative development is otherwise comparable to the Warriors plan, including the original commercial, retail, and parking structures.

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2. The space is designed with biotechnology in mind, which brings with it significant laboratory space. As such, it has a relatively high amount of space per worker associated with it: 250 square feet per employee.[9]
3. The transaction price for the land is unchanged at $172.5 million.[10]
4. It is assumed that just two-thirds of the biotech revenues generated onsite are subject to gross receipts taxation in San Francisco.[11]
5. It is also assumed that a commercial facility would have ancillary benefits in terms of indirect and induced economic activity in San Francisco. Consistent with the EPS report, it is assumed that 90% of the ancillary output generated is subject to the Gross Receipts Tax.[12]

With the addition of these assumptions, an exercise analogous to that undertaken by EPS is performed for the new development. The new development includes the same retail revenues and costs, the same parking revenues, and essentially double the revenues associated with commercial development. Doubling the office space and maintaining other assets leads to an assessed value of at least $605.5 million. This is considerably less than the project's assessed value with an arena.

Support for the notion that this construction is feasible comes not only from the 750,000-square-foot arena that the buildings will be replacing, but also from a similar planned development. UCSF was planning to build 500,000 square feet on four acres of blocks 33-34, right next to the site.[13] A new building of the size being considered is clearly feasible on the space currently to be occupied by the arena.

Table 5 presents a comparison of the one-time revenues and expenditures associated with the Event Center versus doubling the commercial space on the 12-acre property. While the Event Center brings with it a need for considerable infrastructure to accommodate the development, it is not clear that a doubling of the commercial space does. Accordingly, the Event Center brings with it a net upfront cost of $37.5 million, relative to a commercial facility in place of the Center.

[9] This is an extremely conservative assumption. Some estimates suggest that a ratio of 150 to 11 is possible. This would considerably increase employment and hence output at the site, increasing the resulting income to both City residents and City coffers.

[10] The actual transaction price has been announced as $150 million. San Francisco Times, **Warriors buy Mission Bay arena site from Salesforce**, 10/13/2015. In this analysis, the transaction price is kept at $172.5 million to maintain comparability with the original EPS study. The change in sales price does have an effect on revenue estimates, but the effect is the same for both the Warriors plan and for the alternative, so it does not affect comparisons between the two.

[11] There are several avenues through which revenues may be exempt from gross receipts taxes in San Francisco. This analysis is extremely conservative in assuming that this is more likely the case for biotechnology firms (perhaps because of significant revenues accruing through pass-through companies) than for firms in other industries.

[12] Estimates of these benefits are derived from the 2013 San Francisco County model of IMPLAN. It should be noted that the EPS report does not provide estimates of the ancillary effects of the commercial aspect of the current project. This report similarly omits those benefits for the existing commercial development, but does include them for the commercial property that could be built in place of the stadium. These ancillary benefits are also reduced by one-half to provide a conservative estimate of the development's contribution to net revenues.

[13] **UCSF, Salesforce in talks for S.F. Mission Bay land deal**, SFGate, March 15, 2014.

Table 5. Summary of One-Time Revenues from Development
(Thousands of 2014 Dollars)

Category	Biotech	GSW Arena	Difference
Property Transfer Tax	4,200	4,200	0
City Fees - TIDF	10,902	17,436	-6,534
- Child Care	1,263	662	601
Construction			
- Sales Taxes	1,617	2,354	-737
- Gross Receipts Taxes	2,028	2,953	-925
Total	20,010	27,605	-7,595
One-Time Expenses Associated with Development			
Infrastructure Improvements	10,901	55,308	-44,407
Net One-Time Revenues Associated with Development			
Immediate Net Revenue Impact	9,108	-28,410	37,518

Source: EPS Report (9/25/15) and calculations by Marin Economic Consulting.

Although capital expenditures related to the Event Center are significantly higher than the revenues brought in through the TIDF, such is not expected to be the case for additional commercial space. The TIDF was put in place with developments such as this alternative in mind. Therefore, the transit costs associated with the development are better approximated using the TIDF taxation formula. The TIDF collected from the hypothetical alternative development (including the commercial, retail and parking in the GSW project) will serve as our estimate of related transit costs, $10,901.

In the analysis above, the sales price for the property on which the event center and accompanying commercial and retail structures will be built is the same as in the EPS report: $172,546,000. Property transfer tax would result regardless of the purchaser and the end use, but conceivably at a higher price. Salesforce originally paid $278 million dollars for 14 acres (including the space in question) in 2010. The current sales price is $172.5 million for 12 acres (actual is $150 million). The plot of land in question represents the majority of the plot originally purchased by Salesforce, and is the largest single contiguous piece. Property values have also increased substantially since the original purchase by Salesforce.[14] It seems likely then that the value of the land would have increased significantly over the last five years as San Francisco is currently starved for commercial real estate. In the end, the price that the Warriors have paid for the land is surprisingly low. It represents the bulk of a property that was valued at $278 million in 2010 and market values have only increased in the intervening years. Therefore, the actual market value of the land may well be higher than the price the Warriors have been offered and have paid, with correspondingly higher transfer taxes resulting from some alternative development.

[14] **Salesforce.com Is Said to Plan Sale of San Francisco Land**, Bloomberg Business, March 11, 2014.

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Table 6 provides an analysis of the annual City revenues and expenses that can be attributed to each of the projects.[15] The first column is for the alternative development which targets the biotechnology industry. The second column reflects estimates regarding the current Golden State Warriors project, and the final column presents the difference in expected revenue between the two.

Table 6. Summary of Annual Revenues and Expenses (in Thousands of 2014 Dollars)

Category	Biotech	GSW Arena	Difference
Annual Direct General Revenue			
Property Tax (General Fund)	$603	$912	-$309
Property Tax in Lieu of VLF	$570	$868	-$298
Sales Tax	$253	$521	-$268
Hotel/Motel Tax (General Fund)	$0	$1,667	-$1,667
Parking Tax	$243	$482	-$239
Stadium Admission Tax	$0	$4,336	-$4,336
Gross Receipts Tax			
On-site	$4,078	$2,431	$1,647
Off-site	$0	$42	-$42
Utility User Tax	$249	$254	-$5
Subtotal	$5,996	$11,513	-$5,517
Annual Other Dedicated and Restricted Direct Revenue			
Special Fund Property Taxes (Children's, Library, and Open Space)	$98	$148	-$50
Public Safety Sales Tax	$127	$260	-$133
San Francisco County Transportation Authority Sales Tax	$127	$260	-$133
MTA Parking Tax	$971	$1,929	-$958
Subtotal	$1,322	$2,597	-$1,275
Total Revenues	$7,318	$14,110	-$6,792
Annual Development-Related Expenses			
SFMTA	$0	$5,100	-$5,100
SFPD	$0	$900	-$900
DPW	$0	$200	-$200
Total Expenses	$0	$6,200	-$6,200
Net Annual Revenues	$7,318	$7,910	−$592
Ancillary Benefits Associated with Each Project			
Gross Receipts Tax	$754	$0	$754
Total Annual Net Revenue Expectation	$8,071	$7,910	$162

Source: EPS Report and calculations by Marin Economic Consulting.

In most categories, the annual revenues are greater for the Event Center than for a development with additional commercial space. The exception is in the Gross Receipts Taxes, where a biotech firm occupies the additional commercial space. Taken as a whole, annual revenues from a purely

[15] This alternative is chosen because it will allow the use of most of the EPS parameters and assumptions in producing annual revenues for the alternative project. See the Appendix for a comparison of calculations between this project and the EPS report.

commercial development are $6.8 million less than for the project under consideration. Once the expenses related to the activities at the Event Center are taken into consideration, annual net revenues are nearly identical. However, expanding the commercial element of the development has considerable ancillary benefits. Most economic functions both make purchases from the broader economy and also compensate workers, who then in turn make purchases from the broader economy. The gross receipts taxes associated with output in the San Francisco economy that is related to activities in the additional commercial space are estimated to be $754,000 per year.[16] Once these benefits have been considered, the commercial development results in $162,000 more in revenues annually than would the arena (last line of Table 6). From a net revenue perspective, a commercial development dominates the Event Center.

As discussed above, merely calculating the one-time costs and an estimate of the ongoing revenue is insufficient. Were it sufficient, a commercial project focused on biotech would clearly dominate the current project. Table 7 provides an evaluation of the 22-year net benefits of an alternative development with space devoted to biotechnology comparable to the evaluation for the current project.

Table 7. Net Benefits of Alternative Developments after 22 Years
(Millions of Present Discounted 2014 Dollars)

	Biotechnology		Net Benefits		
	Benefits	Costs	Biotech	GSW	Difference
One-Time	$20.0	$10.9	$9.1	−$27.7	$36.8
Ongoing	$126.5	$0.0	$126.5	$123.4	$3.1
Total	$146.5	$10.9	$135.6	$95.7	**$39.9**

Source: Calculations by Marin Economic Consulting

According to these calculations, an alternative development would provide an extra $39.9 million in revenues for the City of San Francisco (as in Table 7). Net present discounted revenues for the project with an Event Center are $95.7 million, while a project with commercial space devoted to attracting biotechnology firms has a discounted value of net revenues expected to be $135.6 million, a difference of $39.9 million dollars, or an additional $1.8 million each year on average over the 22 years.

From a cash flow perspective, there is a deep hole early on with the Event Center. The first three columns of Table 8 present annual present discounted flows of revenues into San Francisco City coffers. The final three columns provide a cash flow, or cumulative contribution to City coffers. Several things are immediately apparent from the table:

1. The Event Center puts an enormous hole in the City's budget in the first year (row 1, column 4).

[16]This is half of what is implied by IMPLAN in order to maintain the conservative nature of these estimates.

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2. Substituting a commercial development is cash flow positive in the first year (row 3, column 5).
3. It will take four years of operation of the Event Center to dig the City out of the hole (column 6).
4. Although the gap in annual discounted net revenue closes over time, it remains significant even in year 20 (last row, column 4).
5. In year 20 of Event Center operations, there remains a surplus of revenue in the amount of $39.9 million for the biotechnology development (last row, last column), which continues to grow in subsequent years.

A final issue that differentiates a biotechnology-centric development over an arena is one of economic impact. It is clear from the economics literature that sports stadiums and arenas provide little economic boost to the local economy. At the same time, it is clear that these facilities are responsible for generating some local economic activity. The failure to add to a region's economy is because they tend to displace other entertainment purchases from the broader economy rather than to stimulate new spending. An individual may go to a basketball game instead of to a play, opera, symphony, or rock concert. These facilities are therefore not additive to the economy.

Nonetheless, it has been estimated that economic activity associated with Oracle Arena accounts for $44.9 million in economic Activity and 494 jobs in Alameda County.[17] It seems likely that the impact of the new arena will be of a similar magnitude.

By comparison, a 522,000 square foot biotechnology facility, with a ratio of space to employee of 250 to 1 can accommodate more than 2,000 employees. That represents four times more employment for biotechnology than for the Arena. It is also consistent with an estimate of economic output on the order of $1 billion, an order of magnitude higher than for the Arena. Accordingly, the biotechnology development can serve as a much more significant engine of economic growth for the region than can the new event center. Ancillary (indirect and induced) economic benefits for the City of San Francisco are estimated to similarly be in excess of $1 billion. The gross receipts tax implications for the City of San Francisco are conservatively estimated to be $754,000 per year.[18]

[17]Memo to Patrick Soluri, Attorney at Law, from Philip King, Ph.D., regarding Urban Decay Analysis of Proposed Relocation of Golden State Warriors from Oakland to San Francisco, page 9.

[18]These estimates are from the 2013 San Francisco County model of IMPLAN and have been scaled to 2014 dollars. The actual estimates of ancillary output generated were divided by two in order to keep the estimates conservative. The actual revenues could be significantly greater.

Table 8. Stream of Net Revenues over Time
(Thousands of 2014 Discounted Dollars)

	Annual			Cumulative		
Year	Biotech	GSW	Difference	Biotech	GSW	Difference
One-Time Net Revenues:						
2016	$9,108	-$27,704	$36,812	$9,108	-$27,704	$36,812
Start of Ongoing Revenues:						
2017	$7,600	$7,440	$160	$16,708	-$20,264	$36,972
2018	$7,450	$7,290	$160	$24,158	-$12,974	$37,132
2019	$7,302	$7,142	$160	$31,460	-$5,831	$37,292
2020	$7,157	$6,998	$159	$38,618	$1,167	$37,451
2021	$7,016	$6,857	$159	$45,633	$8,024	$37,609
2022	$6,877	$6,718	$158	$52,510	$14,742	$37,768
2023	$6,740	$6,583	$157	$59,250	$21,325	$37,925
2024	$6,607	$6,450	$157	$65,857	$27,775	$38,082
2025	$6,476	$6,320	$156	$72,333	$34,095	$38,238
2026	$6,348	$6,192	$155	$78,681	$40,288	$38,393
2027	$6,222	$6,068	$154	$84,903	$46,355	$38,547
2028	$6,099	$5,945	$154	$91,001	$52,300	$38,701
2029	$5,978	$5,825	$153	$96,979	$58,126	$38,854
2030	$5,860	$5,708	$152	$102,839	$63,834	$39,006
2031	$5,744	$5,593	$151	$108,583	$69,427	$39,157
2032	$5,630	$5,480	$150	$114,213	$74,907	$39,307
2033	$5,519	$5,370	$149	$119,732	$80,277	$39,456
2034	$5,410	$5,262	$148	$125,142	$85,538	$39,603
2035	$5,303	$5,156	$147	$130,444	$90,694	$39,750
Year 20 of Event Center operation:						
2036	$5,198	$5,052	$146	$135,642	$95,746	$39,896

Source: Marin Economic Consulting

4: Questioning the Benefits and Costs of the GSW Project

There are few guarantees with economic endeavors. Assuming that the conditions that exist today will exist tomorrow, the day after that, or 20 years from now is of dubious merit. Conditions change. The level of success of a basketball team ebbs and flows (though hopefully not for the Warriors), the economy grows and shrinks, modes of transportation change, and the availability of hotel rooms may decline as demand grows but supply does not.

This certainly holds true for the construction of an arena. While it is quite likely that the Warriors will play at the arena for the foreseeable future and experience a high level of success for some time, it is not certain that the estimated revenues will materialize. As a case in point, the EPS study assumes a sales price for the land of $172,546,000. It has just been announced that the sales price was $150,000,000. That represents a reduction in sales price of 13%, with a corresponding reduc-

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tion in revenues that are tied to the sales price: transfer taxes and ongoing property taxes. Although the long-term implications of a decline in ongoing property taxes is likely small, the transfer tax is reduced from $4.2 million to $3.65 million, a reduction in one-time revenues of $549,000. Granted, this is just one percent of the one-time transit costs associated with the project, but it is more than half a million dollars no longer available for other city needs.

Two categories of revenue are particularly suspect: hotels and parking. With regard to hotels, it is not immediately clear that moving the venue from Oakland to San Francisco will necessarily lead to a significant increase in demand for hotel rooms in San Francisco. With regard to parking, the demand for parking ebbs and flows with the economy. It is also likely that demand for parking will decline significantly in the coming years. Estimates included in the EPS report are therefore likely biased upward and those revenues will not fully materialize.

– Hotel/Motel Occupancy Tax

There are primarily two concerns related to forecasts of increased demand for hotel rooms in San Francisco resulting from the construction of the Event Center. First, San Francisco hotel occupancy rates for much of the year are very high, implying little excess capacity to be filled by basketball fans. During times of high demand for hotel rooms in San Francisco, many of those staying overnight for an event at the arena may choose to stay outside of the City. Alternatively, the demand resulting from arena events may well divert others to hotel rooms outside of the City. Second, it is also likely that many overnight visitors for the Warriors games currently stay in San Francisco, despite attending a game played in Oakland. Despite the change of venue to San Francisco, it is not clear that this shift will result in a significant net increase in demand for San Francisco hotel rooms.

The EPS estimates of revenues associated with the GSW project indicate an increase in hotel room occupancy. However, San Francisco is generally regarded as having a significant shortage of hotel rooms and to be operating near full capacity. Indeed, occupancy rates for San Francisco are high by any standard. San Francisco ranks third nationally in occupancy rates; New York is ranked #1.

The EPS report assumes that 10% of Event Center attendees are potential overnight visitors but that only half of them will constitute new demand for hotel rooms in San Francisco. This assumption represents an increase in demand for hotel rooms of approximately 50,000. However, it is likely that many current overnight visitors to Oracle Arena stay in San Francisco. It is entirely possible that a new arena will have a much smaller net impact on the demand for hotel rooms in San Francisco. This puts some $1.7 million in expected additional revenues in question. If half of this demand does not materialize, or is displacement of other demand for hotel rooms in the City, this could reduce overall revenues by half, or by $800,000 to $900,000 in each year of operation, amounting to more than $13 million in present discounted terms over 20 years of arena operation.

– Parking

Going forward, the use of personal vehicles and hence the demand for parking, as well as transit services, is going to be subject to significant disruption. In particular, ride-sharing services continue to grow, especially in San Francisco. With the use of these vehicles, the demand for parking at an event site will likely decline. There is also growing evidence that autonomous vehicles will be available in the near future. Several automobile and tech companies have announced a target date of 2020 for making these cars, or cars with this capacity, available to the general public. The growth of ride-sharing and the development of autonomous vehicles will likely reduce the demand for parking, particularly the demand related to attending events. The advent of autonomous cars being used in car-sharing will significantly increase the rate at which parking demand declines. Current estimates are that the Event Center will result in the demand for parking spaces on the order of 422,000 per year. Some of this demand for parking is likely to evaporate over time.

There could also be a significant decline in the demand for public transportation resulting from increased car-sharing. This has several implications. First, planned investments in infrastructure designed to expand transit availability to serve events may be rendered to some extent obsolete as people move away from transit and toward the use of autonomous vehicles, whether shared or privately owned. This represents a move away from transit toward private vehicles. Despite the projected decline in parking demand, this represents increased need for traffic mitigation of some sort. There will likely be an increase in vehicular traffic to and from the Event Center that could have implications for the arena's neighbors.

With the advent of autonomous vehicles and greater use of ride-sharing services, it is possible that demand for parking could decline significantly over the coming years. If we assume that it declines at a rate of 1% each year, that would reduce revenues associated with parking by $3.8 million over the 20-year time horizon. It will also reduce parking demand for a biotechnology development, but by less, just $1.9 million over 20 years. Should parking demand decline more quickly (5%/year), revenues could decline by as much as $15 million

– Net Benefits

The point of this discussion is that estimated revenues are suspect, while estimated costs are much more likely accurate. Fixed investments, in particular, are known and not subject to market whims. However in this case, there are unknowns lurking in the cost estimates. It is likely that the revenue implications are biased high, resulting in uncertainty over their future stream with more downside risk than upside. It is already the case that actual one-time revenues have turned out to be less than anticipated (such as the transfer tax, which was lower by $549,000) and that the City has revised its

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estimates of one-time costs upward (by nearly $16 million) and its estimates of ongoing expenses upward (by $1.4 million in each year). Clearly, there is great uncertainty in almost all of these estimates.

5: Some Sensitivity Analysis

In each case, the revenue estimates relating to the GSW project and the revenue estimates relating to a biotechnology center are uncertain. It is therefore worthwhile to experiment with basic assumptions to better understand the implications for City revenues. Table 9 offers some evidence for the implications of particular assumptions. We provide four separate alternatives that relax in different ways the assumptions inherent in the baseline analysis. The top line of the table presents the baseline results of the analysis, the estimates of present discounted net revenues accruing to the City (corresponding to the last row in Table 7). In the case of the biotechnology development net present discounted revenues are $135.6 million whereas they are just $95.7 million for the GSW project, a difference of $39.9 million.

Table 9. Summary of Net Present Discounted Value Associated with Alternatives (22 Years, 2015-2036) Comparing the Multi-Purpose Venue with a Biotechnology Center (Millions)

			Difference	
Item	Biotech	GSW	Over 22 Years	Per Year
Baseline	$135.6	$95.7	$39.9	$1.8
Alternative 1	$135.6	$82.6	$53.1	$2.4
- Hotel/Motel Revenues are overstated by 50% in EPS report		$Over Baseline:$	$13.2	
Alternative 2	$147.0	$95.7	$51.2	$2.3
- Area to employee ratio for Biotech of 200/1		$Over Baseline:$	$11.3	
Alternative 3	$154.5	$95.7	$58.7	$2.7
- Add 200,000 sq ft to New Commercial Space (722,000 total)		$Over Baseline:$	$18.0	
Alternative 4 (Extreme)	$234.2	$82.6	$151.6	$6.9
- Area to employee ratio for Biotech of 150/1		$Over Baseline:$	$111.7	
- 100% of Biotech revenues are subject to GRT				
- Hotel/Motel Revenues are overstated by 50%				
- Add 200,000 sq ft to New Commercial Space (722,000 total)				

Source: Marin Economic Consulting

The first alternative scenario assumes that one-half of the demand for hotel rooms in San Francisco fails to materialize with the GSW project. This results in a reduction of approximately $13.2 million

in net present discounted revenues. The revenues associated with the biotechnology development are unchanged because there are no transient occupancy tax revenues assumed to occur.

The second alternative assumes a greater density of employment in the new commercial facility, leaving the existing commercial plans constant. If there are 200 square feet per employee, rather than 250, revenues associated with the new facility increase by more than $11.3 million relative to the baseline. This increase in revenue stems largely from an increase in the output produced by the building's occupants, resulting in increased gross receipts tax revenues. It also increases the occupants interactions with the broader San Francisco economy, having a positive impact on ancillary benefits. Further reducing the space per employee will have correspondingly larger increases in revenues.

A third alternative assumes a larger facility is constructed, with 722,000 square feet of space rather than 522,000 square feet of space. This increases the number of employees working in the space by nearly 40%, holding the assumption that 250 square feet per employee is required. With greater space comes increased employment and increased output and increased demand for the output of the rest of the San Francisco economy. Accordingly, revenues are estimated to increase by nearly $18.0 million with an expanded space. Under this scenario, the net discounted value of City revenues increases by $58.7 million relative to the GSW project. Even larger spaces would have a correspondingly larger impact on City revenues.

Finally, an extreme alternative is offered. Alternative 4 allows for a 150 to 1 ratio of square feet to employees, assumes that all of the revenues accruing to the biotech occupants are subject to the GRT, reduces by one-half assumed hotel/motel TOT revenues associated with the Event Center, and involves a building with 722,000 square feet. Under this alternative, City revenues increase by $111.7 million relative to the baseline, with biotechnology revenues exceeding GSW revenues by nearly $151.6 million over 22 years and $6.9 million per year.

These alternatives are not put forward to suggest that there is $151.6 million being left on the table (though there may be), but rather to illustrate the range of differences that underlying assumptions can make. At the same time, even the extreme alternative is plausible.

6: Re-Evaluating the Net Benefits of Hosting the Warriors

There are two fundamental points made in this report:

1. Estimates of costs and revenues are highly speculative, and the evidence suggests that there is more downside risk to the GSW project than upside.
2. There is significant revenue that is forgone by the City in order to bring the Warriors to town.

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Both of these points raise significant questions about the Warriors arena project from a financial perspective. First, how comfortable are taxpayers in their understanding of the implications of this development? Second, is this the right development?

The respective answers are "not very" and "quite possibly no." There is uncertainty in the information available and replacing the Event Center in the project with additional commercial space has the potential to increase City revenues significantly.

Another way of thinking about the differences in revenues between the GSW project and a biotechnology development is that these differences reflect the price the City is paying in order to bring the Warriors to town. There are certainly other more tangible costs, but these costs are also real.

The above analysis indicates that even with relatively conservative assumptions, in particular those surrounding employment in the new development and the size of the new development, a biotechnology center would increase City revenues significantly relative to the Event Center. Under the baseline scenario, the difference is $39.9 million over 22 years. Under the most extreme, yet plausible, scenario presented, an additional $151.6 million could be raised over the 22-year period. This analysis presents a range of increases of between $1.8 and $6.9 million per year. It should be noted that the extreme alternative does not include the possibility of a larger facility. Were it to do so, the forgone annual revenues would be significantly higher. This suggests that the City of San Francisco is likely paying more than $1.8 million and possibly upwards of $7 million per year in forgone revenues in each of the next 22 years to accommodate the Warriors.

Every economic development represents a choice. That choice is between the proposed development and plausible alternatives. The City has chosen to pursue a basketball team without exploring or disclosing the relative merits of the project compared with plausible alternatives. This report is not designed to condemn the choice, but rather to better inform the debate on the implications of this choice.

APPENDIX: Details of Annual Revenue Calculations for Biotech in Comparison with the Warriors Project

This appendix provides tables illustrating key differences in the assumptions and results between the analysis presented in the EPS report of 9/25/15 and the biotechnology project discussed in the text. The tables very closely mirror those in the EPS report and reproduce assumptions and results from that report. Some tables are not applicable to the biotechnology project and are omitted. In particular, Tables A-9 through A-11 are omitted. It should also be noted that these tables have not been updated to reflect the actual purchase price paid by the Warriors. It does, however, include updates to the City's estimates of one-time and ongoing costs.

Table A-1. San Francisco Revenue Summary (Thousands of 2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	GSW	Biotech	Difference
Annual General Revenue			
Property Tax (General Fund)	$912	$603	-$309
Property Tax in Lieu of VLF	$868	$570	-$298
Sales Tax	$521	$253	-$268
Hotel/Motel Tax (General Fund)	$1,667	$0	-$1,667
Parking Tax	$482	$243	-$239
Stadium Admission Tax	$4,336	$0	-$4,336
Gross Receipts Tax			
On-site	$2,431	$4,078	$1,647
Off-site	$42	$0	-$42
Utility User Tax	$254	$249	-$5
Subtotal	$11,513	$5,996	-$5,517
Annual Other Dedicated and Restricted Revenue			
Special Fund Property Taxes (Children's, Library, and Open Space)	$148	$98	-$50
Public Safety Sales Tax	$260	$127	-$133
San Francisco County Transportation Authority Sales Tax	$260	$127	-$133
MTA Parking Tax	$1,929	$971	-$958
Subtotal	$2,597	$1,322	-$1,275
TOTAL REVENUES	$14,110	$7,318	-$6,792

Source: EPS and Marin Economic Consulting

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Table A-2. San Francisco City One-Time Fee Revenue Summary (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	GSW	Biotech	Difference
New Gross Building Area (sq.ft.)		1,156,500	
City Fees (per gross building sq.ft.)			
Child Care	$661,870	$1,263,240	$601,370
Transit Impact Development Fee	$17,435,765	$10,901,655	−$6,534,110
Total Development Impact Fee	$18,097,635	$12,164,895	−$5,932,740
Other In-Lieu Impact Fees			
Other One-Time Revenues			
Sales Taxes During Construction	$2,354,634	$1,617,159	−$737,475
Gross Receipts Tax During Construction	$2,953,050	$2,027,835	−$925,215
Property Transfer Tax from Initial Land Sale	$4,200,000	$4,200,000	$0

Source: EPS and Marin Economic Consulting

Note: The gross building area for the biotechnology development includes four commercial buildings with 1,044,000 square feet and retail of 112,500 square feet.

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Table A-3. San Francisco Property Tax Estimates (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Biotech	Difference
Secured Assessed Value				
Multi-Purpose Venue		$550,000,000	$0	$550,000,000
Other Development				
Event Management/Team Operations Space		$14,500,000	$0	$14,500,000
Retail		$41,343,750	$41,343,750	$0
Office		$302,760,000	$605,520,000	−$302,760,000
Parking		$33,250,000	$33,250,000	$0
Subtotal		$941,853,750	$680,113,750	$261,740,000
New Taxable Value				
Gross Secured Possessory Interest/Property Tax	1.0% of new AV	$9,418,538	$6,801,138	$2,617,400
Unsecured Tax from the Warriors		$183,333	$0	$183,333
Unsecured Tax from Other Uses		$391,854	$0	$391,854
Subtotal		$9,993,725	$6,801,138	$3,192,587
(less) Existing Taxes		−$1,795,169	−$1,795,169	$0
Total		$8,198,556	$5,005,969	$3,192,587
Property Tax				
Tier 1 Property Tax Pass Through	20.00%	$1,639,711	$1,001,194	$638,517
Tier 2 Property Tax Pass Through	16.8%	$1,377,357	$841,003	$536,355
Tier 1 and 2 Property Tax Pass Throughs	36.80%	$3,017,068	$1,842,196	$1,174,872
Net New General Fund Share (after ERAF)	55.59% property tax tier 1 pass through	$911,515	$556,564	$354,952
Special Funds	9.00% property tax tier 1 pass through	$147,574	$90,107	$57,467
SF Unified School District	7.70% property tax pass through	$232,314	$141,849	$90,465
Affordable Housing Set Aside		$1,639,711	$1,001,194	$638,517

Source: EPS and Marin Economic Consulting

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Table A-4. Property Tax in Lieu of VLF Estimates (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	GSW	Biotech	Difference
Citywide Total Assessed Value (millions $)	$172,489	$172,489	
Total Assessed Value of Project (millions of $)	$941.85	$680.11	$261.74
(less) Existing Value	−$179.52	−$179.52	
Net Increase in Project Assessed Value (millions $)	$762.34	$500.59	$261.75
Growth in Citywide AV due to Project	0.442%	0.290%	
Total Property Tax in Lieu of Vehicle License Fee (VLF) (FY2014-15)	$196,480,000	$196,480,000	
New Propety Tax in Lieu of VLF	$868,372	$570,220	$298,152

Source: EPS and Marin Economic Consulting

Table A-5. Property Transfer Tax (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Biotech
One-Time Transfer Tax			
Estimated Land Sale		$172,546,000	$172,546,000
One-Time Transfer Tax	$24.34 per $1,000 value	$4,199,770	$4,199,770

Source: EPS and Marin Economic Consulting

Note: The actual transaction price for the property is $150 million.

Table A-6. Sales Tax Estimate (thousands of 2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Biotech	Difference
Taxable Sales from Multi-Purpose Venue				
Warriors Game Concessions and Merchandise	$21.60 per attendee	$15,768		
Other Event Concessions	$11.00 per attendee	$12,859		
Total		$28,627		
Sales Tax to General Fund	1.0% of taxable sales	$286		
(less) Existing Sales Shift		−$18		
Net New Sales Tax		$267		
Taxable Sales From Commercial Space				
Retail	$450 per sq ft	$50,625	$50,625	$0
Sales Tax to San Francisco	1.0% of taxable sales	$506	$506	$0
(less) Shift From Existing Sales		−$253	−$253	$0
Net New Sales Tax		$253	$253	$0
Annual Sales Tax after Shift of Existing Sales				
Sales Tax to the City General Fund	1.00%	$521	$253	−$268
Public Safety Sales Tax	0.50% of taxable sales	$260	$126	−$133
San Francisco County Transportation Authority	0.50% of taxable sales	$260	$127	−$134
SF Public Fnancing Authority (Schools)	0.25% of taxable sales	$130	$63	−$67
One-Time Sales Taxes on Construction Materials and Supplies				
New Taxable Value		$941,854	$680,114	−$261,740
Supply/Materials Portion of Development Value	50.00%	$470,927	$340,057	−$130,870
San Francisco Capture of Taxable Sales	50.00%	$235,463	$170,028	−$65,435
Sales Tax to San Francisco	1.0% of taxable sales	$2,355	$1,700	−$654

Source: EPS and Marin Economic Consulting

Table A-7. Transient Occupancy Tax Estimates Estimate (2014 dollars)
The implications of over-estimating hotel and motel occupancy.

Item	Assumptions	GSW	50% of GSW	Difference
Overnight Attendees in San Francisco for Multi-Purpose Venue Events				
Events per Year		205	205	0
Total Turnstile Attendance		1,899,000	1,899,000	0
Potential Overnight Visitors		189,900	189,900	0
Net New Overnight Visitors	50% (25%)	94,950	47,475	−47,475
Hotel Room Demand	1.90 people per room	49,974	24,987	−24,987
Off-Site Hotel/Motel Room Proceeds	$238 per-room night	$11,907,203	$5,946,868	−$5,960,335
Total Hotel/Motel Tax Revenue	14% of room revenue	$1,667,012	$832,562	−$834,450

Source: EPS and Marin Economic Consulting

Table A-8. Parking Tax Estimates (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Assumptions	50% of GSW	Difference
Total Spaces On-Site		950		950	
Parking Revenues On-Site					
Total	$25 per day	$8,668,750	$20 per day	$6,935,000	
(less) Vacancy	30%	−$2,600,625	30%	−$2,080,500	
Total		$6,068,125		$4,854,500	
Spaces Off-Site					
Annual Demand (spaces)		$178,791			$0
Total Parking Revenue	$20 per day	$3,575,821			$0
San Francisco Parking Tax	25% of annual revenue	$2,410,987	25% of annual revenue	$1,213,625	−$1,197,362
Parking Tax Allocation to Gen'l Fund/Special Projects	20% of tax proceeds	$482,197	20% of tax proceeds	$242,725	−$239,472
Parking Tax Allocation to Municipal Transportation Fund	80% of tax proceeds	$1,928,789	80% of tax proceeds	$970,900	−$957,889

Source: EPS and Marin Economic Consulting

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Table A-12. Parking Tax Estimates (2014 dollars)
Comparing the Multi-Purpose Venue with a Biotechnology Center

Item	Assumptions	GSW	Biotech	Difference
Arena Utility Cost		$1,490,000	$0	−$1,490,000
Other Uses				
Retail	$2.87 per sq.ft.	$322,875	$322,875	$0
Office (Including Event Management and Team Operations)	$2.87 per sq.ft.	$1,569,890	$2,996,280	$1,426,390
Total Annual Commercial Utility Cost		$3,382,765	$3,319,155	−$63,610
Utility User Tax	7.5% of commercial utility cost	$253,707	$248,937	−$4,771

Source: EPS and Marin Economic Consulting

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November 5, 2015

President Rodney Fong and Members of the Planning Commission
City and County of San Francisco
1650 Mission Street, Suite 400
San Francisco, CA 94103

Re: Warriors Arena Project: Planning Codes section 321 and 305, General Plan Inconsistency and CEQA Findings.

Dear Commission President Fong and Members of the Commission:
:

This office represents the Mission Bay Alliance ("Alliance"), an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project"). The Mission Bay Alliance objects to approval of this Project and certification of the Project SEIR.

1. The Project is ineligible for any office space allocation under Planning Code section 321 and Motion 17709.

a. This Project does not comply with the Design for Development.

Resolution 14702 and Motion 17709 require that any project in the Alexandria District must comply with the Mission Bay South Design for Development in order to be eligible for any office space allocation. (See Motion 17709, p. 9, Finding 9,[1] Finding 10[2].)

1
[LC-PP-2]

[1]"This schedule of phased authorization will ensure that, in accord with Resolution 14702, adequate office space can be allocated to those projects within the Development District that are determined to be in compliance with the D for D requirements, while also complying with Section 321 of the Planning Code forbidding exceedance of the square footage available for allocation in any given annual cycle."

[2]"Pursuant to Resolution 14702, the Commission is charged with determining whether a project seeking authorization conforms to applicable standards in the D for D Document, which supersedes the criteria set forth in Section 321 and other provisions of the Code except as provided in the MBS Plan. The projects previously approved were determined to have met the MBS Redevelopment Plan and the D for D Document standards and guidelines, and requirements for childcare, public art, and other provisions of the Plan Documents, and retain

This Project does not comply with the Design for Development, as evidenced by the many amendments that the Successor Agency made to the Design for Development to accommodate the Project. Therefore, it is ineligible for allocation of any office space under Planning Code section 321 and Motion 17709.

1 [LC-PP-2] cont.

b. This Project is inconsistent with the Redevelopment Plan.

A basic premise of the Planning Commission decisions in Resolution 14702 and Motion 17709, and a fundamental rationale for "superseding" section 321's guidelines in favor of the Redevelopment Plan and Redevelopment Plan documents, were the Commission's findings that the Redevelopment Plan met standards set in section 321, the San Francisco Master Plan, the priority policies in Planning Code section 101.1, and the requirements of redevelopment law. In short, in order to be eligible for the office space allocation available under motion 17709, the Project must be consistent with the Redevelopment Plan.

2 [LC-PP-1]

This Project is inconsistent with the Redevelopment Plan because, as demonstrated in the November 2, 2015, letter from Susan Brandt-Hawley, my co-counsel for the Alliance (attached as Exhibit 1), this Project is not an allowable secondary use under the Redevelopment Plan. However, in the alternative, as shown in my November 2, 2015, letter (attached as Exhibit 2), if the Project is an allowable secondary use under the Redevelopment Plan, then it requires a variance under section 305 of the Plan before Project approval.

2. The office space allocation requested for this Project exceeds the amount authorized for the Alexandria District.

In 1986, San Francisco voters passed Proposition M, a referendum limiting the amount of office space that can be approved each year. Codified as Section 321 of the San Francisco Planning Code, it provides that "[n]o office development may be approved during any approval period if the additional office space in that office development, when added to the additional office space in all other office developments . . . would exceed 950,000 square feet." (San Francisco Planning Code § 321(a)(1).) Office space is defined to mean "construction . . . of any structure" that has the "effect of creating additional office space."

3 [LC-PP-2]

The current Project plans call for the construction of two office towers on Mission Bay South Parcels 29 and 31, comprising 309,436 square feet and 267,486 square feet of office space, respectively, for a total of 576,922 square feet of office space. (Executive Summary, p. 2.)

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that design approval, along with all previously imposed conditions of approval. Future projects requesting authorization will be brought before the Commission for design review in accord with Resolution 14702, and upon determination by the Commission that such proposals are in conformity with the D for D and other applicable requirements, office space may be allocated for such new structures from the unassigned amount available in the Development District."

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In 2008, the Planning Commission adopted Motion No. 17709. Motion 17709 approved a cumulative total office space allocation for all projects within the Alexandria Development District of 1,350,000 gross square feet. (Motion 17709, p. 9, Finding 9.) Of that amount, 1,222,980 was allocated before the adoption of Motion 17709. (Motion 17709, p. 5, Finding 4, Table 1.) Therefore, at the time Motion 17709 was proposed, 227,020 gsf of unallocated office remained for allocation. (Motion 17709, p. 9, Finding 9, Table 4.)

According to Motion 17709, there were three pending projects at that time, at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street. Motion 17709 states that these projects represented 665,880 square feet of "potential office space." (Motion 17709, p. 5, Finding 5, Table 2.) Motion 17709 also states an intent to authorize only 57% of "potential office space" for actual office space after 10/18/09, 53% of "potential office space" for actual office space after 10/18/10, and 50% of "potential office space" for actual office space after 10/18/11.

Motion 17709 does not state how much actual office space was approved for the three pending projects at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street. The Planning Department's Office Development Annual Limitation Program record (attached as Exhibit 3) shows "0*" in the "size" column for these projects. (Exhibit 3, p. 19.) Assuming the Planning Commission allocated office space to these projects at the 57% ratio, that amount is 379,552 gsf (665,880 x .5). **This amount exceeds the remaining office space available for allocation at that time (i.e., 227,020 gsf).**

3 [LC-PP-2] cont.

According to Motion 17709, there were two additional areas where the applicant indicated an intent to develop "potential office space," namely, MB South Blocks "29 and 31" and "33-34." (Motion 17709, p. 5, Finding 6, Table 3.) Motion 17709 states that these possible future projects represented 915,700 square feet of "potential office space," with Blocks "29 and 31" at 515,700 GSF. (Motion 17709, p. 5, Finding 6, Table 3.)

Assuming, again, that the Planning Commission allocated office space to these areas at the 50% ratio, that amount is 457,850 GSF (915,700 x .5), with 257,850 allocated to Blocks "29 and 31" at 257,850 gsf (515,700 x .5).

The Draft Motion proposed for adoption at today's hearing states that "Blocks 29-32 are included in the Development District and have been allocated a total of 677,020 sf of office space pursuant to Motion No. 17709." (Draft Motion, p. 3.) This is incorrect in at least four ways.

First, it is unclear and unstated how Planning staff derived the 677,020 gsf number.

Second, after approval of the office space allocation for the three pending projects at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street, there was no office space left in the

Alexandria District to allocate - as discussed above.

Third, even if one adds together the "potential office space" numbers for Blocks 29-32 in Motion 17709, the sum is 1,119,999 gsf, and 50% of that is only 560,000 gsf. The two office towers proposed for this Project require 576,922 gsf. (See Executive Summary, pp. 1-2: 309,436 gsf in the South tower and 267,486 gsf in the 16th Street tower). This number exceeds 560,000 gsf.

Fourth, when one adds the 25,000 gsf for office space in the arena building (see SEIR p. 3-17), the office space for this project totals 601,922 gsf (i.e., 576,922 plus 25,000), which also exceeds 560,000 gsf.

Fifth, to the extent there was any office space left for Motion 17709 to allocate after approval of the office space allocation for the three pending projects at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street, Motion 17709 allocated only 257,850 gsf to Blocks 29 and 31 (i.e., 50% of 515,700) pursuant to Finding 6, Table 3. **The 576,922 gsf of office space in the two office towers for this Project are located in Blocks 29 and 31; and the total of 576,922 gsf vastly exceeds the 257,850 gsf that may arguably be available.**

Because the office towers called for in the Project exceed the allowable office space cap, Section 321(a)(1) and Motion 17709 require the Planning Commission to deny approval of the Project and of the requested allocations of office space.

3 [LC-PP-2] cont.

3. General Plan Inconsistency: BAAQMD.

San Francisco Master Plan Policy 4.1 states:

> Support and comply with objectives, policies, and air quality standards of the Bay Area Air Quality Management District.
> Regionwide monitoring of air quality and enforcement of air quality standards constitute the primary means of reducing harmful emissions. The conservation of San Francisco's air resource is dependent upon the continuation and strengthening of regional controls over air polluters. San Francisco should do all that is in its power to support the Bay Area Air Quality Management district in its following operations:
> • Monitoring both stationary and mobile sources of air pollution within the region and enforcing District regulations for achieving air quality standards.
> • Regulating new construction that may significantly impair ambient air quality.
> • Maintaining alert, permit, and violations systems.
> • Developing more effective controls and method of enforcement, as necessary

The attached letter from the Bay Area Air Quality Management District (Exhibit 4) and the City's response (Exhibit 5) show that this Project does not comply with this policy.

4 [LC-PP-3]

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The Alliance previously commented on the Draft SEIR (Comment AQ-7) that the per ton charge for emission offsets is too low to achieve complete offset of the Project's emissions. The City's response to comments on this point is cagey, but it does suggest what now turns out to be fact - that the BAAQMD agreed with the comment - because the response states:

> SF Planning has been in communication with BAAQMD with regard to its suggestion that a higher fee may be warranted to offset project emissions to a less than significant level and found that BAAQMD could not establish that an increased rate beyond that of the Carl Moyer Program plus a five percent administrative fee could meet the "rough proportionality" standard required under CEQA.

(RTC, p. 13.13-67.) The RTC's rationale for contending that a higher offset fee would not meet the "rough proportionality" standard is that offset fees in other areas of the state are not higher than the offset fee proposed in the DSEIR. This is an error of law. The "rough proportionality" requirement requires a comparison of the cost of the mitigation to the degree of severity of the impact. The fees charged in other areas of the state are irrelevant to "rough proportionality."

5 [LC-AQ-1]

4. CEQA Findings: General

The Commission cannot make any CEQA findings required by CEQA section 21081 or CEQA Guidelines 15091, 15093, 15096(f), because the Project SEIR does not comply with CEQA and is not certifiable, for the reasons described in the Alliance's comments on the SEIR.

6 [LC-ERP-3]

5. CEQA Findings: BAAQMD.

The Commission cannot find that "Impact AQ-4: Potential conflicts with BAAQMD's 2010 Clean Air Plan" is less than significant with mitigation because the City and Project Sponsor refuse to agree to BAAQMD's offset fees per Mitigation Measure M-AQ-2b. (See Exhibits 4 and 5.) There is also no evidence that the "Option 2" offset idea within Mitigation Measure M-AQ-2b is feasible. There are too many unanswered questions regarding Option 2, including lack of assured verification of offsets to ensure their effectiveness, and lack of assurance that offset sources are available in the quantity required. BAAQMD's offset program at least answers some, if not all, of these questions.

The Commission cannot find that all feasible mitigation measures that would substantially reduce "Impact AQ-1: Impacts of Criteria Air Pollutants from Construction" have been adopted as required by CEQA section 21081, because there is no evidence that paying the offset fees demanded by BAAQMD is infeasible. Also, as discussed above, there is no evidence that the "Option 2" offset idea within Mitigation Measure M-AQ-2b is feasible; therefore, it is not an adequate substitute for BAAQMD's offset program. This also applies to

• Impact AQ-2: Impacts of Criteria Air Pollutants from Project Operations"; Impact C-AQ-1: Project Contribution to Regional Air Quality Impacts;

7 [LC-ERP-3]

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Planning Commission
City and County of San Francisco
Re: Warriors Arena Project DSEIR
November 5, 2015
Page 6

- Impact C-AQ-1: Project Contribution to Regional Air Quality Impacts.

7 [LC-ERP-3] cont.

6. CEQA Findings: Pier 80 Alternate Site.

The Commission cannot find that feasible alternatives that would substantially reduce the Project's significant impacts have been adopted. The SEIR does not analyze the alternate site proposed by the Alliance near Pier 80, and did not circulate that analysis for public comment. Neither OCII nor this Commission has the basis to make conclusory findings rejecting the alternative. Among the relevant facts not considered in the findings is that the site is three times as large as would be required for the Event Center project and need not utilize any of the City-owned property nor any particular configuration of the privately-owned lots should there be an unwilling seller. There is no evidence provided that the site could not be acquired within a reasonable time period.

8 [LC-ERP-3]

Case law confirms that assuring a site's consistency with city plans and zoning is within the City's power. Similarly, the scheduling of transportation services to the site can be increased, and the findings provide no studies to back up conclusory statements regarding traffic, air quality, hydrology, or water quality impacts. Since only a third of the site is needed to accommodate the event center, all of the impacts (if shown to have concern after sufficient technical review) can be avoided or mitigated. As stated in the Alliance letter to OCII that proposes this site for consideration as an alternative, here incorporated by reference, the SEIR failed to consider a potentially-feasible off-site alternative and must be revised and recirculated to do so before findings of infeasibility may be considered or adopted. The site suggested by the Alliance is potentially feasible and deserving of study.

Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

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O-MBA24L9

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November 2, 2015

Tiffany Bohee, OCII Executive Director
c/o Brett Bollinger, San Francisco Planning Department
via email warriors@sfgov.org

Subject: Warriors Event Center & Mixed Use Development
Inconsistency with Mission Bay South Redevelopment Plan
'Secondary Use' Classification

Dear Director Bohee and Mr. Bollinger:

The Mission Bay Alliance (the Alliance) contends that the Warriors' Event Center is unlawfully inconsistent with every use allowed by the Mission Bay South Redevelopment Plan (the Plan). Although the Alliance raised this issue in comments on the Draft Subsequent EIR (DSEIR), both the Responses to Comments in the Final SEIR and OCII's findings of project consistency remain materially inadequate.

The Plan designates uses allowed at a 'Commercial Industrial/Retail' site. The Alliance notes that while OCII now concedes that a sports arena is not within the scope of allowed 'principal uses' in that zoning, OCII contends that an arena is consistent with 'secondary uses.' As this letter will explain, all such secondary uses are similarly and demonstrably insufficient to permit the Warriors' sports arena.

Nighttime Entertainment. The Initial Study concluded, in error, that the DSEIR did not need to address land use issues — at all. It asserted that the entire Event Center, including the sports arena use, somehow met the secondary 'Nighttime Entertainment' use analyzed in the 1998 Plan EIR. Secondary uses were then generally referenced in the DSEIR (*e.g.*, pp. 3-8, 3-51, 4-5, 5.2-115), but there was no discussion of which category of secondary use would be allocated to the Event Center, inferring acceptance of the Nighttime Entertainment category.

The Plan describes Nighttime Entertainment in terms of small-scale local uses like dance halls, bars, nightclubs, discotheques, nightclubs, private clubs, and

EXHIBIT 1

restaurants. (Plan, p. 50.) At the time of the 1998 EIR, several small neighborhood bars occasionally offered nighttime entertainment, consistent with the secondary use category. Such minor uses were compatible with the 3rd Street Corridor and the waterfront. Clearly, no mammoth regional entertainment venue was anticipated in Mission Bay South and no such use was considered in the 1998 Plan EIR.

And while professional basketball games are held at night, the Event Center also projects 31 annual events "related to conventions, conferences, civic events, corporate events and other gatherings," with an estimated attendance of between 9,000 and 18,500 patrons. "[T]he majority of events are expected to occur during day time hours." Such events are not 'Nighttime Entertainment.'

The Director's currently-proposed findings that the sports arena is 'Nighttime Entertainment' contemplated as a secondary use in the Plan are unsupported. The findings fail to match the scope and impacts of a professional sports venue with the analysis or description of uses in the Plan or in the 1998 EIR. The findings are fatally conclusory; that somehow a professional sports venue would be "similar" to a nightclub or bar use in the 'Nighttime Entertainment' category "because" it will serve alcohol, provide amplified live entertainment, and provide a venue for evening gatherings. The findings fail to address the core inconsistency of a regional sports arena with the intent of the adopted Plan and the Design for Development, which focus on commercial entertainment uses in Mission Bay North to complement the Giants' ballpark.

OCII's reliance on the negative; to wit, that the 'Nighttime Entertainment' secondary use has no specific size limitations, is not enough. The Plan provides for the continued development of Mission Bay South as a walkable urban community intended to facilitate world-class medical and biotechnology development. The Event Center project violates the Plan Area Map carefully designed in classic, walkable Vara Blocks. (Plan, Attachment 2, p. 40.) Neither the Plan nor the Design for Development contemplate any uses comparable in scope or impact to the Event Center as 'Nighttime Entertainment.'

That being said, in fact in the Final SEIR and as reflected in the proposed Plan consistency findings, OCII now implicitly agrees with the Alliance that the 'Nighttime Entertainment' secondary use standing alone does not encompass a sports arena. Now, OCII additionally relies on the Plan's alternate 'secondary uses.' No such uses are consistent with the Plan, as explained below.

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Recreation Building. One of the Plan's secondary use categories is for an undefined 'Recreation building.' (Plan, p. 15.) The Plan describes 'Outdoor Recreation' as "an area, not within a building, which is provided *for the recreational uses of patrons* of a commercial establishment." (Plan, p. 50, italics added.)

OCII's proposed findings as to the 'Recreation building' category stretch the regional sports arena use not only beyond what was contemplated by the Plan or studied in the 1998 EIR, but beyond logic. To state the obvious: there is a difference between 'recreation' and 'entertainment.' Both involve enjoyment and leisure, and may involve ancillary eating and drinking, and the Alliance has no quarrel with the Director's reference to recreation as "something people do to relax or have fun; activities done for enjoyment." (OCII Proposed Secondary Use Determination, p. 6.) But myriad dictionary definitions confirm and it cannot readily be denied that 'recreation' is commonly understood to involve one's personal physical activities while 'entertainment' refers to events or performances designed to entertain others.

None of the Plan's various references to 'entertainment' include athletic activities normally considered 'recreation:' Adult Entertainment [bookstore or theater], Amusement Enterprise [video games], Bar [drinking and theater], Theater [movies and performance]. (Plan, Attachment 5, pp. 44-51.) Consistently, the 1998 EIR's discussion of 'recreational' land uses focused in turn on open space, bicycles, parks, and water-based activities. (Mission Bay EIR, Volume IIB, pp. V.M. 15-28.).

In context, the Plan's reference to 'Recreation building' as a secondary use contemplates participatory recreational uses like the 'recreation facilities' referenced in the 1998 Plan EIR for the existing golf driving range and in-line hockey rink, with the expressed expectation that the size of recreational 'facilities' would decrease as redevelopment of the Plan area progressed. (OCII Proposed Secondary Use Determination, p. 6.)

Reliance on the secondary use of 'Recreation building' is unsupported.

Public Structure or Use of a Nonindustrial Character. As presented in the Plan, the category of "other secondary uses" labeled 'Public structure or use of a nonindustrial character' references *one* secondary use, not *two*. (Plan, p. 13.) The use is required to be public, and either a structure *or* a use.

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The interpretation urged by the Director is, again, strained beyond the plain words of the Plan. 'Public' is not defined in the Plan and so its common meaning is assumed. But as proposed in the consistency findings, OCII interprets a 'public' use as simply requiring that the public be somehow 'served.' That would encompass every kind of principal and secondary use listed in the Plan, from child care to animal care to hotel, *etc*., and renders the category meaningless: *i.e*., "Any use is ok."

Instead, a public structure or use is commonly understood to be under the control and management of a public agency for the benefit of its constituency — such as the University of California[1] or the City of San Francisco. The Plan provides a description of a range of anticipated public improvements in Attachment 4. This list includes both public buildings and public uses. None of the public improvements listed in Attachment 4 include anything like a private professional sports arena.

The Event Center is a private project and is not within the scope of the secondary use category for a public structure or use of a nonindustrial character.

Director's Findings. As explained, the sports arena uses that are the impetus for the Event Center project are not allowed by the Plan's allowed principal or secondary uses. An allowed use is prerequisite for a finding of Plan consistency. The Alliance will not belabor the myriad other inconsistencies with the Plan's objectives, design, incompatibility with UCSF, and creation of significant environmental impacts, as those have been described in the DSEIR comments and throughout the administrative record, but hereby objects to their insufficiencies and lack of supporting substantial evidence for the Plan consistency finding.

Consideration of the Event Center project must be preceded by amendment of the Plan to be consistent with the delineated principal and secondary uses and the adopted Plan Area Map of the Mission Bay South Redevelopment Plan.

Thank you.

Sincerely yours,

Susan Brandt-Hawley
Attorney for Mission Bay Alliance

[1] See attached 2005 Resolution and Secondary Use finding regarding the "UCSF hospital" as a "public structure or use of a non-industrial character" for "a public body specifically created by the California Constitution."

O-MBA24L9

RESOLUTION NO. 176-2005

Adopted November 1, 2005

APPROVING A MEMORANDUM OF UNDERSTANDING WITH THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, A CALIFORNIA PUBLIC CORPORATION, AND ACKNOWLEDGING THE EXECUTIVE DIRECTOR'S FINDINGS OF CONSISTENCY WITH THE MISSION BAY SOUTH REDEVELOPMENT PLAN, FOR THE EXPANSION OF UCSF FACILITIES IN THE MISSION BAY SOUTH REDEVELOPMENT PROJECT AREA; MISSION BAY SOUTH REDEVELOPMENT PROJECT AREA

BASIS FOR RESOLUTION

1. On September 17, 1998, by Resolution No. 193-98, the Redevelopment Agency of the City and County of San Francisco's (the "Agency") Commission (the "Agency Commission") conditionally approved the Mission Bay South Owner Participation Agreement (the "South OPA") and related documents between Catellus Development Corporation (the "Owner") and the Agency for development in the Mission Bay South Redevelopment Project Area (the "Project Area").

2. On November 2, 1998, the Board of Supervisors of the City and County of San Francisco (the "Board") by Ordinance No. 335-98 approved and adopted the Redevelopment Plan for the Mission Bay South Redevelopment Project Area (the "Plan"). The Board's adoption of the Plan satisfied the conditions to the effectiveness of Agency Resolution No. 193-98.

3. On November 16, 1998, the Agency entered into the South OPA with the Owner. The South OPA sets forth phasing principles that govern the development of property in the Project Area. Those principles include the Owner's obligations to deliver to the Agency affordable housing sites as market rate housing is built in the Project Area. They also include the Owner's commitments to construct public open space and other public infrastructure adjacent to – or otherwise triggered by – development on any of the private parcels governed by the South OPA.

4. Under the South OPA and the related Mission Bay South Tax Increment Allocation Pledge Agreement (the "Pledge Agreement"), dated as of November 16, 1998, between the Agency and the City and County of San Francisco (the "City"), approximately 20% of the total property tax increment (plus certain excess tax increment) generated by development in the Project Area is contractually dedicated to develop affordable housing units on parcels that the Owner will contribute to the Agency, to achieve the affordable housing program contemplated by the Plan.

5. The South OPA requires the Owner to construct the public infrastructure directly related to each of the major phases in accordance with the incremental build-out of each project. Under the South OPA and the Pledge Agreement, the Agency is obligated to fund, repay or reimburse the Owner, subject to certain conditions, for the direct and indirect costs of constructing the infrastructure. The Agency has established a Community Facilities District ("CFD") for infrastructure in the Project Area. The Agency has also established a separate CFD to pay the costs of maintaining the public open space in the Project Area.

6. The South OPA provides that as a condition to any transfer of property in the Project Area, the Owner must obtain the agreement of the transferee to assume all of Owner's obligations under the South OPA with respect to the transferred parcels.

7. The Project Area includes an approximately 43-acre biomedical research and educational campus site (the "Campus Site") for the University of California, San Francisco ("UCSF"). UCSF has already invested about $675 million on projects completed or underway on the Campus Site within the Plan Area and has plans to invest another $225 million on projects in design.

8. The Regents of the University of California, a California public corporation ("The Regents") wishes to lease or acquire, and the Owner wishes to transfer Parcels 36, 37, 38 and 39 in the Project Area, comprising approximately 9.65 acres of land for the possible expansion of UCSF in Mission Bay (the "Expansion Parcels"). These parcels are not part of the 43 acres that the Plan originally designated as the Campus Site.

9. On November 30, 2004, The Regents released proposed amendments in draft form to its long range development plan, as LRDP Amendment #2. Those amendments contemplate an expansion of UCSF facilities onto the Expansion Parcels, including the possibility of developing by 2012 new integrated specialty Children's, Women's and Cancer hospitals containing about 210 beds, together with ambulatory and research facilities. In March 2005, The Regents approved LRDP Amendment #2 (the "Project") and certified a related final environmental impact report (the "LRDP #2 FEIR") which analyzed the environmental effects of the proposed UCSF development on the Expansion Parcels. Copies of the LRDP #2 FEIR are on file with the Agency Secretary.

10. The Owner and The Regents have entered into an Option Agreement and Grant of Option to Lease, dated as of January 1, 2005 (the "Option to Lease"), which provides that upon the satisfaction of certain conditions and the exercise by The Regents of its option (i) Catellus, as landlord, and The Regents, as tenant, will enter into a long-term ground lease of the Expansion Parcels (the "Lease") and (ii) the Owner and The Regents will at the same time enter into an Option Agreement and Grant of Option to Purchase (the "Option to Purchase") under which The Regents will have an option to purchase the Expansion Parcels.

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11. If The Regents exercises the Option to Lease within the option term, the Lease would allow for The Regents to develop up to 1,020,000 leasable square feet on the Expansion Parcels, provided that (a) any development of those parcels is the subject of further environmental review under the California Environmental Quality Act ("CEQA"), and (b) the Owner does not lose any of its entitled development potential for the balance of its land nor lose any of its other rights and privileges under the South OPA.

12. Pursuant to Section 302 of the Plan, the development of the contemplated UCSF facilities on the Expansion Parcels is permitted as a subset of "Other Uses" as a secondary use. Such secondary uses are permitted provided that such use generally conforms with redevelopment objectives and planning and design controls established pursuant to the Plan and based on certain findings of consistency by the Agency's Executive Director (the "Consistency Findings"). The Executive Director has made the Consistency Findings, and such findings are hereby incorporated herein by this reference as if fully set forth.

13. The City must make substantial improvements to San Francisco General Hospital ("SFGH") by 2013 and is evaluating a number of alternatives, including rebuilding on site and co-locating a new SFGH with new UCSF medical facilities in Mission Bay.

14. As a State agency, The Regents is exempt under the State Constitution from local land use regulation and property taxes to the extent it uses property exclusively in furtherance of its educational mission.

15. The Agency, City and The Regents negotiated a non-binding term sheet to guide the preparation of final transactional and related documents, such as a Disposition and Development Agreement ("DDA") for The Regents to acquire property for, and to construct and subsidize, affordable housing for low-income workers of UCSF, which DDA is being considered by the Agency Commission concurrently with this Resolution, pursuant to Resolution No. 160-2005, and provided terms for a Memorandum of Understanding regarding design standards and cooperation on the development of the Expansion Parcels (the "MOU"). The Agency Commission approved the non-binding term sheet on May 17, 2005 by Resolution No. 81-2005.

16. The proposed MOU addresses, among other things: the potential loss of tax increment from the transfer of the Expansion Parcels to a tax-exempt entity; the obligations to build infrastructure associated with development on the Expansion Parcels; the potential assistance of UCSF in the planning of the co-location, if any, of SFGH with the new UCSF facilities; the standards for design review for construction on the Expansion Parcels; local hiring and

equal opportunity for jobs associated with the development on the Expansion Parcels; and other matters designed to provide the Agency and City with significant public benefits.

17. Agency staff is recommending that the Agency Commission approve the MOU, and the associated Consistency Findings.

18. The Agency Commission has reviewed and considered the information contained in the LRDP #2 FEIR.

19. The Agency Commission hereby finds that the MOU is an action in furtherance of the implementation of the Project for purposes of compliance with CEQA.

20. By Resolution 175-2005, the Agency Commission adopted environmental findings related to the LRDP #2 FEIR, pursuant to CEQA and the CEQA Guidelines (the "Findings"). Such Findings are made pursuant to the Agency's role as the responsible agency under CEQA for the Project. The Findings are hereby incorporated herein by this reference as if fully set forth.

RESOLUTION

ACCORDINGLY, IT IS RESOLVED by the Redevelopment Agency of the City and County of San Francisco that the findings of consistency with the Mission Bay South Redevelopment Plan are approved and the Executive Director is authorized to execute the "Expansion of UCSF Facilities in Mission Bay South Redevelopment Project Area (Blocks 36-39) Memorandum of Understanding", substantially in the form lodged with the Agency General Counsel; Mission Bay South Redevelopment Project Area.

APPROVED AS TO FORM:

James B. Morales
Agency General Counsel

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MEMORANDUM

126-03405-001
October 12, 2005

To: Marcia Rosen
Executive Director

From: Amy Neches
Senior Project Manager

Re: Secondary Use Finding Recommendation for UCSF Hospital in Mission Bay South Redevelopment Area

Pursuant to a Term Sheet dated as of August 1, 2005 between the City, the Agency and The Regents of the University of California, which was endorsed by the Commission on May 17, 2005 (Resolution No. 81-2005), the Agency is considering agreements, including a Memorandum of Understanding ("MOU"), under which the University of California at San Francisco ("UCSF") may develop a hospital in the Mission Bay South Redevelopment Area ("Redevelopment Area").

The UCSF hospital would be located on Blocks 36-39 within the Commercial Industrial land use district of the Redevelopment Area, as described in the Mission Bay South Redevelopment Plan (the "Plan"). The UCSF hospital development may also include all or portions of Block X3 within the Commercial Industrial/Retail land use district. In both of these land use districts "public structure or use of a non-industrial character" is permitted as a subset of "Other Uses" as a secondary use.

The University of California, of which UCSF is a component, is a public body specifically created by the California Constitution. A hospital or medical center is described in §790.44 of the San Francisco Planning Code as a "public or private institutional use which provides medical facilities for inpatient care, medical offices, clinics, and laboratories." The proposed UCSF hospital development will include these components. The hospital will not including manufacturing, warehousing, or distribution of goods, and can reasonably be considered a "non-industrial use." This interpretation is supported by the San Francisco Planning Code, under which hospitals are permitted as a conditional use in all C districts and NC-3 districts.

Section 302 of the Plan provides as follows:

> "Secondary uses shall be permitted in a particular land use district…provided that such use generally conforms with redevelopment objectives and planning and design controls established pursuant to this Plan and is determined by the Executive Director to make a positive contribution to the character of the Plan Area, based on

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a finding of consistency with the following criteria: the secondary use, at the size and intensity contemplated and at the proposed location, will provide a development that is necessary or desirable for, and compatible with, the neighborhood or the community."

Staff believes that the UCSF hospital is appropriate as a secondary use, based on the following:

1) The proposed hospital will be located on approximately 10 to 14 acres of land adjacent to the Mission Bay UCSF research campus that have been determined to be blighted and are affected by environmental contamination. UCSF plans close integration of its basic academic research activities with the teaching, research and patient care activities within the planned hospital. The plan for development of the UCSF hospital generally conforms to the Redevelopment Project Objectives as described in §103 of the Plan, particularly with objective A of eliminating blight and correcting environmental deficiencies, and objective B of retaining and promoting UCSF's research and academic activities within the City and County of San Francisco.

2) Under the MOU, the UCSF hospital development will generally conform to the planning and design controls established pursuant to the Plan, including the street layout, setbacks, and streetscape plan. To accommodate the needs of the hospital, the MOU will include specific adjustments to the existing height and bulk standards of the Commercial Industrial and Commercial Industrial/Retail land use zones of the Mission Bay South Design for Development. These changes will lower the maximum height of a hospital to 105 feet, compared to the existing 160 foot limit, but would allow for somewhat greater bulk in the mid-rise area. These changes have been studied and presented to the public at two well-noticed public meetings. In staff's opinion, the proposed adjustments represent reasonable variation from the existing standards, which will have little if any negative effect on the surrounding community in the context of overall Mission Bay development.

3) The hospital will contain no more development, as calculated under the Plan in leasable square feet, than would have been permitted under the principal uses permitted in these land use districts, and there will be no net increase in the overall size of development within the Redevelopment Area. The hospital will be developed on parcels that would otherwise likely have been developed with commercial office or life science/biotechnology uses. These uses would have been constructed in buildings of reasonably similar size and appearance as the proposed hospital use.

4) The proposed hospital will allow UCSF to continue to provide needed tertiary health care to the residents of San Francisco in a modern seismically safe hospital, and will assist UCSF in furthering its research and academic mission.

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Based on these factors, staff believes that it is appropriate to make the finding of consistency cited above, and recommends that the Executive Director permit the development of the UCSF hospital as a secondary use in Mission Bay, subject to the approval of the MOU by the Commission.

Approved on October 12, 2005:

Marcia Rosen
Executive Director

O-MBA24L9

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November 2, 2015 [2 of 2]

By personal delivery at Nov. 3, 2015, hearing to: Commission on Community Investment and Infrastructure Attn: Claudia Guerra, Commission Secretary Office of Community Investment and Infrastructure 1 South Van Ness Avenue, 5th Floor San Francisco, CA 94103 and email to: claudia.guerra@sfgov.org	By email to: *warriors@sfgov.org*: Ms Tiffany Bohee OCII Executive Director c/o Mr. Brett Bollinger San Francisco Planning Department 1650 Mission Street, Suite 400 San Francisco, CA 94103

Re: Warriors Arena Project: Violation of Variance Requirement.

Dear Ms Bohee and Mr. Bollinger:

This office represents the Mission Bay Alliance ("Alliance"), an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project"). The Mission Bay Alliance objects to approval of this Project and certification of the Project SEIR.

I write today regarding the OCII's failure to require a variance or "variation" for this Project under section 305 of the Mission Bay South Redevelopment Plan ("Plan"). The November 2, 2015, letter from Susan Brandt-Hawley, my co-counsel for the Alliance, demonstrates this Project is not an allowable secondary use under the Plan. Thus, a variance is not available because, as shown by Brandt-Hawley, the Project "will change the land uses on this Plan." (Plan, § 305.) However, in the alternative, if the Project is an allowable secondary use under the Plan, then the OCII must process this Project application as a variance and make the findings required by Plan section 305 before Project approval.

Both California and San Francisco planning law provide a process for landowners to obtain a "variance" from the "uniformity" of zoning limits that, while appropriate for the zone district in general, would impose undue hardship due to unique characteristics of a specific parcel. Government Code section 65906 governs the grant of zoning variances by municipalities and prohibits local agencies from granting "special privileges" to individual landowners. Similarly, San

EXHIBIT 2

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Francisco Planning Code, section 305, subdivision (a), provides that a variance permit must be approved for any exception to the requirements of the Planning Code. Subdivision (c) thereof mirrors the requirements of state law, and requires a finding that "owing to such exceptional or extraordinary circumstances the literal enforcement of specified provisions of this Code would result in practical difficulty or unnecessary hardship ...."

Similarly, the Plan includes a variance provision that reflects the same substantive requirements as Government Code section 65906 and Planning Code section 305:

> The Agency may modify the land use controls in this Plan where, owing to unusual and special conditions, enforcement would result in undue hardships or would constitute an unreasonable limitation beyond the intent and purposes of these provisions. Upon written request for variation from the Plan's land use provisions from the owner of the property, which states fully the grounds of the application and the facts pertaining thereto, and upon its own further investigation, the Agency may, in its sole discretion, grant such variation from the requirements and limitations of this Plan. The Agency shall find and determine that the variation results in substantial compliance with the intent and purpose of this Plan, provided that in no instance will any variation be granted that will change the land uses on this Plan.

(Plan, § 305.)

Because the Plan's variance provision imposes virtually identical requirements as Planning Code section 305, both apply. (Plan, §'s 101 ["Regardless of any future action by the City or the Agency, whether by ordinance, resolution, initiative or otherwise, the rules, regulations, and official policies applicable to and governing the overall design, construction, fees, use or other aspect of development of the Plan Area shall be (i) this Plan and the other applicable Plan Documents, (ii) to the extent not inconsistent therewith or not superseded by this Plan, the Existing City Regulations and (iii) any new or changed City Regulations permitted under this Plan"]; 304.9.C.(iv)).

Here, the Project creates at least sixteen inconsistencies with the Design for Development (D4D). The OCII now proposes to amend the D4D, the Owner's Participation Agreement (OPA), and other Plan documents to resolve these inconsistencies by, including but not limited to, raising maximum height limits from 90 to 135 feet, allowing a second 160+ foot tower, increasing bulk limits to accomodate the arena, and changing arena setbacks, street wall heights, view corridors, public rights of way, and parking standards. (See e.g., Draft SEIR, pp. 4-7 - 4-9, § 4.2.4; Proposed Resolution 2015, exhibit A; Memorandum to the OCII from Executive Director Tiffany Bohee for Items 5(a), 5(b), 5(c), 5(d) & 5(e) the November 3, 2015, CCII meeting agenda, pp. 4, 22.)

Even if the Project's land uses are allowable secondary uses, these amendments "modify the land use controls in this Plan" as provided in Plan section 305. But the Project Sponsor has made

no showing that due to "unusual and special conditions, enforcement would result in undue hardships or would constitute an unreasonable limitation beyond the intent and purposes of these provisions." (Plan, § 305.)

"Variances are, in effect, constitutional safety valves to permit administrative adjustments when application of a general regulation would be confiscatory or produce unique injury." (Curtin's California Land Use and Planning Law, p. 55.) Variance requirements also implement the State Planning and Zoning Law's requirement of "uniformity" of zoning rules within zoning districts. (See Gov. Code, § 65852 ["All such [zoning] regulations shall be uniform for each class or kind of building or use of land throughout each zone, but the regulation in one type of zone may differ from those in other types of zones;" *Neighbors in Support of Appropriate Land Use v. Cnty. of Tuolumne* (2007) 157 Cal.App.4th 997, 1008 (*Neighbors*).) The State Planning and Zoning Law also requires vertical consistency between local agencies general plans, zoning ordinances, and land use permits. (Gov. Code, § 65860, subd. (c) ["County or city zoning ordinances shall be consistent with the general plan of the county or city... ."]; see *DeVita v. Cnty. of Napa* (1995) 9 Cal.4th 763, 772 ["A general plan is a 'constitution' for future development [citation omitted] located at the top of 'the hierarchy of local government law regulating land use'"].)

California courts have vigorously enforced the requirements for granting a variance, and have developed extensive jurisprudence to corral the many stratagems local agencies have used to avoid its requirements. (See e.g., *Topanga Association v. County of Los Angeles* (1974) 11 Cal.3d 506, 511-12 (*Topanga*); *Orinda Assn. v. Board of Supervisors* (1986) 182 Cal.App.3d 1145, 1166 (*Orinda Assn*) ["A zoning scheme, after all, is similar in some respects to a contract ... If the interest of these parties in preventing unjustified variance awards for neighboring land is not sufficiently protected, the consequence will be subversion of the critical reciprocity upon which zoning regulation rests..."].)

Variance findings must focus on a comparison of the subject property to other properties in the zone district with which the variance is intended to bring it into parity, and the benefits to the community or "public interest" associated with a zoning exception are irrelevant. (*Orinda Assn, supra*, at p. 1166.) By amending the Plan documents to accommodate this Project, the OCII would cast these requirements aside and grant a "special privilege" to this Project Sponsor.

In *Neighbors*, rather than adopt a rezone or grant a variance, the County created a special exception to the zoning ordinance for one landowner by including it in a development agreement adopted under the development agreement law. (*Neighbors, supra*, 157 Cal.App.4th at p. 1003.) In rejecting this stratagem, the Court in *Neighbors* noted that there are limits on the power to rezone: "'The foundations of zoning would be undermined, however, if local governments could grant favored treatment to some owners on a purely ad hoc basis ... [R]ezoning, even of the smallest parcels, still necessarily respects the principle of uniformity." (*Id*. at pp. 1009-10.)

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A similar result occurred in *Trancas Prop. Owners Assn. v. City of Malibu* (2006) 138 Cal.App.4th 172 (*Trancas*). In *Trancas*, the court held an exemption from a city's zoning requirements accomplished by contract functionally resembled a variance, and held that "such departures from standard zoning by law require administrative proceedings, including public hearings ... followed by findings for which the instant [density] exemption might not qualify... Both the substantive qualifications and the procedural means for a variance discharge public interests. Circumvention of them by contract is impermissible." (Id. at p. 182.)

In sum, the OCII's proposed grant of zoning exceptions to this Project by way of amending the Plan documents rather than by variance violates the Plan, the variance requirements of the San Francisco Planning Code and state law, and the uniformity requirement of state law.

Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

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Office Development Annual Limitation ("Annual Limit") Program

The Office Development Annual Limit (Annual Limit) Program became effective in 1985 with the adoption of the Downtown Plan Amendments to the Planning Code (Sections 320–325) and was subsequently amended by Propositions M (1986) and C (1987). The Program defines and regulates the allocation of any office development project that exceeds 25,000 gross square feet (gsf) in area.

A total of 950,000 gsf of office development potential becomes available for allocation in each approval period, which begins on October 17th every year. Of the total new available space, 75,000 gsf is reserved for Small Allocation projects (projects with between 25,000 and 49,999 gsf of office space), and the remaining 875,000 gsf is available for Large Allocation projects (projects with at least 50,000 gsf of office space). Any available office space not allocated in a given year is carried over to subsequent years.

This document reflects the status of the Annual Limit Program, including current availability and summaries of previously approved and pending projects.

Information in this document was last updated on **September 1, 2015.** Inquiries should be directed to Corey Teague at (415) 575-9081 or corey.teague@sfgov.org.

Summary of Key Figures

Small Allocation Projects (<50,000 gsf of office space)	**Current Availability 1,188,805 gsf** *Current total square footage available for allocation.*	**Pending Availability 903,255 gsf** *Currently available square footage less 285,550 gsf of pending* projects.*	**Pipeline Availability 776,280 gsf** *Currently available square footage less 285,550 gsf of pending* projects and 126,975 gsf of pre-application** projects.*
Large Allocation Projects (>50,000 gsf of office space)	**Current Availability 1,429,763 gsf** *Current total square footage available for allocation.*	**Pending Availability -1,678,791 gsf** *Currently available square footage less 3,108,554 gsf of pending* projects.*	**Pipeline Availability -8,529,408 gsf** *Currently available square footage less 3,108,554 gsf of pending* projects and 6,850,617 gsf of pre-application** projects.*

* A 'pending project' is one for which an office allocation application has been submitted but not yet acted upon.
** A 'pre-application' project is one for which an environmental review application, preliminary project assessment application, or other similar application has been submitted but for which no office allocation application has yet been submitted.

EXHIBIT 3

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PENDING OFFICE PROJECTS*

*Projects that have submitted an application (B or OFA) pursuant to Planning Code Section 321 (Office Development Annual Limit) but on which no Commission action has yet ocurred.

Small Office Cap

Case No.	Address	Sq. Ft.	Status	Staff	Comments
2009.0065	3433 Third Street	49,229	B filed 1/27/09	Julian Banales	New 5-story office building for Carpenter's Union on vacant lot. May be cancelled due to inactivity (2/18/14).
2014.0567	2101 Mission Street	48,660	B filed on 4/17/14	Brittany Bendix	Legalize change of use from retail and warehouse to office. Planning Commission hearing scheduled for 9/3/15.
2012.1410	77-85 Federal Street	49,730	B filed on 6/5/14	Scott MacPherson	Demo two existing office buildings and construct a 5-story building with ground floor retail and office above.
2015-000509	1125 Mission Street	37,944	B filed on 1/15/15	Julian Banales	Change of use from auto repair.
2014.1315	135 Townsend Street	49,995	B filed on 3/11/15	Rich Sucre	Conversion of existing self storage building.
2013.1511	360 Spear Street (aka 100 Harrison St)	49,992	B filed on 4/3/15	Rich Sucre	Partial conversion of existing ISE.
Subtotal		***285,550***			

Large Office

Case No.	Address	Sq. Ft.	Status	Staff	Comments
2012.0640	598 Brannan Street	700,456	B filed on 10/24/12	Elizabeth Purl	Demo of 2 industrial buildings; 2 new office buildings (Central SoMa Project).
2013.1545	645 Harrison Street	99,698	B filed on 7/18/13	Kimberly Durandet	LoD confirmed 14,520gsf as existing legal office space. Revised proposal to convert additional 99,698gsf, plus retain 33,758gsf of PDR on first and second floors.
2013.1593	2 Henry Adams	245,697	B filed on 2/6/14	Rich Sucre	Owner-initiated Article 10 Landmark designation and an Office Allocation. Eligible area limited by recent legislation.
2011.0409	925 Mission Street	803,300	B filed on 8/19/14	Kevin Guy	"5M" Project. Planning Commission informational hearing scheduled for 9/3/15.
2006.1523	50 First Street	1,050,000	B filed on 6/4/14	Kevin Guy	Demo and construction of a mixed-use building with two towers.
2014-002701	GSW Development	0	B filed on 12/12/14	David Winslow	Design approval only. Allocation already approved in Alexandria District.
2014.1063	633 Folsom Street	89,804	B filed on 12/23/14	Mark Luellen	Four story office addition to existing seven story building.
2014.0154	1800 Mission Street	119,599	OFA filed on 1/27/15	Rich Sucre	Conversion in the Armory.
Subtotal		***3,108,554***			

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PRE-APPLICATION OFFICE PROJECTS*

*Projects that have submitted for initial Department review (e.g. environmental review (EE) or Preliminary Project Assessment [PPA]), but have not submitted an application pursuant to Planning Code Section 321 (Office Development Annual Limit).

Small Office Cap

Case No.	Address	Sq. Ft.	Status	Staff	Comments
2014.1616	1200 Van Ness Ave	27,000	PPA issued 1/14/15.	Mary Woods	Exact office square footage TBD.
2015-010219	462 Bryant Street	49,995	PPA filed on 8/12/15.		An existing single story office building and basement will remain, and five stories of new office space will be added (approximately 49,995 gsf of new office space).
2015-010374	598 Bryant Street	49,980	PPA filed on 8/12/15.	Kansai Uchida	Demo existing gas station and construct a 9-story mixed-use office building with underground parking.
Subtotal		***126,975***			

Large Office Cap

Case No.	Address	Sq. Ft.	Status	Staff	Comments
2005.0759	725-735 Harrison	730,940	PPA letter issued 5/16/2013. Revised EE pending.	Debra Dwyer	"Harrison Gardens" (Central SoMa Project). Original proposal changed to office per 2/21/13 application amendment.
2014.0416	610-620 Brannan Street	561,065	EE filed 6/19/14	Elizabeth Purl	Demo and new 11-story mixed use bldg (Central SoMa Project).
2013.0478	559 6th Street	123,972	PPA issued on 6/17/13. PPA expired on 12/17/14.	Kimia Haddadan	Demolish 3 bldgs and construct a mixed-use project (Central SoMa Project)
2013.0970	Pier 70 (Forest City Only)	1,810,000	EE filed on 11/10/14	Andrea Contreras	SF Port project
n/a	2525 16th Street	60,980	Legitimization request filed 11/30/12	Corey Teague	EN Legitimization
2014.0858	565-585 Bryant Street	188,280	PPA issued on 7/25/14	Jeremy Shaw	Demo four existing bldgs and construct an 11-story mixed-use bldg. 2nd PPA proposes only 46,990sf of office (Central SoMa Project).
2014.0405	330 Townsend Street	394,300	PPA issued on 5/15/14	Steve Wertheim	Demo existing bldg and construct a 21-story office bldg. 2nd PPA proposes only 212,300sf of office (Central SoMa Project).
2013.0208	SWL 337 ("Mission Rock")	1,300,000	EE filed on 6/4/13	Josh Switzky	Large mixed-use project on Port property.
2015-004256	630-698 Brannan St	1,512,260	PPA issued on 7/24/15. EE filed 7/24/15.	Lisa Chen	Flower Mart replacement project (Central SoMa Project). Two Previous PPAs. 2015-001903 analysed proposed 1,492,450gsf. 2013.0370 was under different ownership, only included Lot 5, and analysed 655,150gsf.

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2014.1208	1500 Mission Street	0	EE filed on 10/23/14	Chelsea Fordham	Demo and new construction of mixed use bldg with 462,800gsf of **City** office space.
2015-009704	505 Brannan Street	168,820	PPA filed on 7/27/15	Steve Wertheim	"Phase II" addition (165', 11 stories) of office space onto an approved 85' "Phase I" office building approved by the Planning Commission on 12/11/14. With this newly planned addition, total building height would now be 250' and contain a total of 306,266 sf.
Subtotal		***6,850,617***			

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ANNUAL LIMIT FOR "SMALL" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,188,805

Approval Period[1]	Unallocated Sq. Ft.[2]	"Small" Office Annual Limit	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
1985-1986	0	75,000	**75,000**	No Projects	N/A	0	**0**	
1986-1987	75,000	75,000	**150,000**	1199 Bush	1985.244	46,645	**46,645**	
1987-1988	103,355	75,000	**178,355**	3235-18th Street	1988.349	45,350	**45,350**	aka 2180 Harrison Street
1988-1989	133,005	75,000	**208,005**	2601 Mariposa	1988.568	49,850	**49,850**	
1989-1990	158,155	75,000	**233,155**	No Projects	N/A	0	**0**	
1990-1991	233,155	75,000	**308,155**	No Projects	N/A	0	**0**	
1991-1992	308,155	75,000	**383,155**	1075 Front	1990.568	32,000	**32,000**	
1992-1993	351,155	75,000	**426,155**	No Projects	N/A	0	**0**	
1993-1994	426,155	75,000	**501,155**	No Projects	N/A	0	**0**	
1994-1995	501,155	75,000	**576,155**	No Projects	N/A	0	**0**	
1995-1996	576,155	75,000	**651,155**	No Projects	N/A	0	**0**	
1996-1997	651,155	75,000	**726,155**	No Projects	N/A	0	**0**	
1997-1998	726,155	75,000	**801,155**	No Projects	N/A	0	**0**	
1998-1999	801,155	75,000	**876,155**	1301 Sansome	1998.362	31,606	**31,606**	
1999-2000	844,549	75,000	**919,549**	435 Pacific	1998.369	32,500		
				2801 Leavenworth	200.459	40,000		
				215 Fremont	1998.497	47,950		
				845 Market	1998.090	49,100	**169,550**	
2000-2001	749,999	75,000	**824,999**	530 Folsom	2000.987	45,944		
				35 Stanford	2000.1162	48,000		
				2800 Leavenworth	2000.774	34,945		
				500 Pine	2000.539	44,450	**173,339**	See also 350 Bush Street - Large
2001-2002	651,660	75,000	**726,660**	No Projects	N/A	0	**0**	
2002-2003	726,660	75,000	**801,660**	501 Folsom	2002.0223	32,000	**32,000**	
2003-2004	769,660	75,000	**844,660**	No Projects	N/A	0	**0**	
2004-2005	844,660	75,000	**919,660**	185 Berry Street	2005.0106	49,000	**49,000**	
2005-2006	870,660	75,000	**945,660**	No Projects	N/A	0	**0**	
2006-2007	945,660	75,000	**1,020,660**	No Projects	N/A	0	**0**	
2007-2008	1,020,660	75,000	**1,095,660**	654 Minnesota	no case number	43,939	**0**	UCSF
2008-2009	1,095,660	75,000	**1,170,660**	No Projects	N/A	0	**0**	
2009-2010	1,170,660	75,000	**1,245,660**	660 Alabama Street	2009.0847	39,691	**39,691**	
2010-2011	1,205,969	75,000	**1,280,969**	No Projects	N/A	0	**0**	
2011-2012	1,280,969	75,000	**1,355,969**	208 Utah / 201 Potrero	2011.0468	48,732		EN Legitimization

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ANNUAL LIMIT FOR "SMALL" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available: 1,188,805

Approval Period[1]	Unallocated Sq. Ft.[2]	"Small" Office Annual Limit	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
				808 Brannan Street	2012.0014	43,881		EN Legitimization
				275 Brannan Street	2011.1410	48,500		
				385 7th/1098 Harrison	2011.1049	42,039		EN Legitimization
				375 Alabama Street	2012.0128	48,189	**231,341**	EN Legitimization
2012-2013	1,124,628	75,000	**1,199,628**	No Projects	N/A	0	**0**	
2013-2014	1,199,628	75,000	**1,274,628**	3130 20th Street	2013.0992	32,081		
				660 3rd Street	2013.0627	40,000	**72,081**	
2014-2015	1,202,547	75,000	**1,277,547**	340 Bryant Street	2013.1600	47,536		
				101 Townsend Street	2014-002385	41,206	**88,742**	
					Total	**1,105,134**		

[1] Each approval period begins on October 17

[2] Carried over from previous year

ANNUAL LIMIT FOR "LARGE" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,429,763

Approval Period[1]	Unallocated Sq. Ft.[2]	"Large" Office Annual Limit[3]	Reduction per Section 321.1	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
1985-1986	0	875,000	(475,000)	**400,000**	No Projects	N/A	0	**0**	
1986-1987	400,000	875,000	(475,000)	**800,000**	600 California	1986.085	318,030		
					235 Pine	1984.432	147,500		
					343 Sansome	1985.079	160,449	**625,979**	
1987-1988	174,021	875,000	(475,000)	**574,021**	No Projects	N/A	0	**0**	
1988-1989	574,021	875,000	(475,000)	**974,021**	No Projects	N/A	0	**0**	
1989-1990	974,021	875,000	(475,000)	**1,374,021**	150 California	1987.613	195,503	**195,503**	
1990-1991	1,178,518	875,000	(475,000)	**1,578,518**	No Projects	N/A	0	**0**	
1991-1992	1,578,518	875,000	(475,000)	**1,978,518**	300 Howard	1989.589	382,582	**382,582**	**aka 199 Fremont Street**
1992-1993	1,595,936	875,000	(475,000)	**1,995,936**	No Projects	N/A	0	**0**	
1993-1994	1,995,936	875,000	(475,000)	**2,395,936**	No Projects	N/A	0	**0**	
1994-1995	2,395,936	875,000	(475,000)	**2,795,936**	No Projects	N/A	0	**0**	
1995-1996	2,795,936	875,000	(475,000)	**3,195,936**	No Projects	N/A	0	**0**	
1996-1997	3,195,936	875,000	(475,000)	**3,595,936**	101 Second	1997.484	368,800	**368,800**	
1997-1998	3,227,136	875,000	(37,582)	**4,064,554**	55 Second Street	1997.215	283,301		**aka One Second Street**
					244-256 Front	1996.643	58,650		**aka 275 Saramento Street**
					650 Townsend	1997.787	269,680		**aka 699-08th Street**
					455 Golden Gate	1997.478	420,000		**State office building - see also Case No. 1993.707**
					945 Battery	1997.674	52,715		
					475 Brannan	1997.470	61,000		
					250 Steuart	1998.144	540,000	**1,685,346**	**aka 2 Folsom/250 Embarcadero**
1998-1999	2,379,208	875,000	0	**3,254,208**	One Market	1998.135	51,822		
					Pier One	1998.646	88,350		**Port office building**
					554 Mission	1998.321	645,000		**aka 560/584 Mission Street**
					700 Seventh	1999.167	273,650		**aka 625 Townsend Street**
					475 Brannan	1999.566	2,500	**1,061,322**	**addition to previous approval - 1997.470**
1999-2000	2,192,886	875,000	0	**3,067,886**	670 Second	1999.106	60,000		
					160 King	1999.027	176,000		
					350 Rhode Island	1998.714	250,000		
					First & Howard	1998.902	854,000		**First & Howard bldg #2 (405 Howard), #3 (505-525 Howard) & #4 (500 Howard)**
					235 Second	1999.176	180,000		
					500 Terry Francois	2000.127	280,000		**Mission Bay 26a**
					550 Terry Francois	2000.329	225,004		**Mission Bay 28**
					899 Howard	1999.583	153,500	**2,178,504**	
2000-2001	889,382	875,000	0	**1,764,382**	First & Howard	1998.902	295,000		**First & Howard bldg #1 (400 Howard)**
					550 Terry Francois	2000.1293	60,150	**355,150**	**Additional allocation (see also 2000.329)**
2001-2002	1,409,232	875,000	0	**2,284,232**	350 Bush	2000.541	344,500		**See also 500 Pine Street - Small**
					38-44 Tehama	2001.0444	75,000		

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ANNUAL LIMIT FOR "LARGE" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,429,763

Approval Period[1]	Unallocated Sq. Ft.[2]	"Large" Office Annual Limit[3]	Reduction per Section 321.1	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
					235 Second	2000.319	64,000		**modify 1999.176**
					250 Brannan	2001.0689	113,540		
					555 Mission	2001.0798	549,000		
					1700 Owens	2002.0300	0*	**1,146,040**	**Alexandria District - West Campus (160,100)**
2002-2003	1,138,192	875,000	0	**2,013,192**	7th & Mission GSA	No Case	514,727	**514,727**	**Federal Building**
2003-2004	1,498,465	875,000	0	**2,373,465**	Presidio Dig Arts	No Case	839,301	**839,301**	**Presidio Trust**
2004-2005	1,534,164	875,000	0	**2,409,164**	No Projects	N/A	0	**0**	
2005-2006	2,409,164	875,000	0	**3,284,164**	201 16th Street	2006.0384	430,000	**430,000**	**aka 1409/1499 Illinois**
2006-2007	2,854,164	875,000	0	**3,729,164**	1500 Owens	2006.1212	0*		**Alexandria District - West Campus (158,500)**
					1600 Owens	2006.1216	0*		**Alexandria District - West Campus (228,000)**
					1455 Third Street/455 Mission Bay South Blvd/450 South Street	2006.1509	0*		**Alexandria District - North Campus (373,487)**
					1515 Third Street	2006.1536	0*		**Alexandria District - North Campus (202,893)**
					650 Townsend	2005.1062	375,151		
					120 Howard	2006.0616	67,931		
					535 Mission	2006.1273	293,750	**736,832**	
2007-2008	2,992,332	875,000	0	**3,867,332**	100 California	2006.0660	76,500		
					505-525 Howard	2008.0001	74,500		**Additional allocation for First & Howard Building #3**
					680 Folsom Street	No Case	117,000		**Redevelopment - Yerba Buena**
					Alexandria District	2008.0850	1,122,980		**Establishes Alexandria Mission Bay Life Sciences and Technology Development District ("Alexandria District") for which previously allocated office space and future allocations would be limited to 1,350,000 gsf to be distributed among designated buildings within district.**
					600 Terry Francois	2008.0484	0*		**Alexandria District - East Campus (312,932)**

ANNUAL LIMIT FOR "LARGE" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,429,763

Approval Period[1]	Unallocated Sq. Ft.[2]	"Large" Office Annual Limit[3]	Reduction per Section 321.1	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
					650 Terry Francois	2008.0483	0*		Alexandria District - East Campus (291,367)
					1450 Owens	2008.0690	0*	1,390,980	Alexandria District - West Campus (61,581)
2008-2009	2,476,352	875,000	0	3,351,352	No Projects	N/A	0	0	
2009-2010	3,351,352	875,000	0	4,226,352	850-870 Brannan Street	2009.1026	138,580		aka 888 Brannan Street
					222 Second Street	2006.1106	430,650	569,230	LEED
2010-2011	3,657,122	875,000	0	4,532,122	350 Mission Street	2006.1524	340,320		
					Alexandria District	n/a	200,000		under terms of Motion 17709
					Treasure Island	2007.0903	0	540,320	Priority Resolution Only
2011-2012	3,991,802	875,000	0	4,866,802	Alexandria District	n/a	27,020		under terms of Motion 17709
					850-870 Brannan St	2011.0583	113,753		aka 888 Brannan Street
					444 DeHaro St	2012.0041	90,500		
					460-462 Bryant St	2011.0895	59,475		
					185 Berry St	2012.0409	101,982		aka China Basin Landing
					100 Potrero Ave.	2012.0371	70,070		EN Legitimization
					601 Townsend Street	2011.1147	72,600	535,400	EN Legitimization
2012-2013	4,331,402	875,000	0	5,206,402	101 1st Street	2012.0257	1,370,577		Transbay Tower; aka 425 Mission
					181 Fremont Street	2007.0456	404,000		new office/residential building
					1550 Bryant Street	2012.1046	108,399		EN Legitimization
					1100 Van Ness Ave	2009.0885	242,987		CPMC Cathedral Hill MOB
					3615 Cesar Chavez	2009.0886	94,799		CPMC St. Luke's MOB
					345 Brannan Street	2007.0385	102,285		
					270 Brannan Street	2012.0799	189,000		
					333 Brannan Street	2012.0906	175,450		
					350 Mission Street	2013.0276	79,680		Salesforce (No. 2)
					999 Brannan Street	2013.0585	143,292		EN Legitimization - Dolby
					1800 Owens Street	2012.1482	700,000	3,610,469	Mission Bay Block 40
2013-2014	1,595,933	875,000	0	2,470,933	300 California Street	2012.0605	56,459		
					665 3rd Street	2013.0226	123,700		
					410 Townsend Street	2013.0544	76,000		
					888 Brannan Street	2013.0493	10,000		AirBnB - See Also 2011.0583B
					81-85 Bluxome Street	2013.0007	55,000	321,159	
2014-2015	2,149,774	875,000	0	3,024,774	501-505 Brannan Stree	2012.1187	137,446		
					100 Hooper Street	2012.0203	284,471		
					390 Main Street	n/a	137,286		MTC Project - Verified on 4/14/15
					250 Howard Street	2014-002085	766,745		aka Transbay Block 5 (195 Beale St)
					510 Townsend Street	2014.0679	269,063	1,595,011	
						Total	19,082,655		

[1] Each approval period begins on October 17

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ANNUAL LIMIT FOR "LARGE" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,429,763

Approval Period[1]	Unallocated Sq. Ft.[2]	"Large" Office Annual Limit[3]	Reduction per Section 321.1	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments

[2] Carried over from previous year

[3] Excludes 75,000 gsf dedicated to "small" projects per Section 321(b)(4)

SMALL OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
1986-1987	1985.244	1199 Bush	0280-031	46,645	11026	complete	1991	St. Francis Hospital
1987-1988	1988.349	3235-18th Street	001/030	45,350	11451	complete		PG&E, aka 2180 Harrison Street
1988-1989	1988.568	2601 Mariposa	4016-001	49,850	11598	complete	1991	KQED
	1988.287	1501 Sloat	7255-002	39,000	11567	doesn't count	n/a	revoked 12/00
1989-1990								
1990-1991	1990.238	350 Pacific	0165-006	45,718	13114	doesn't count	n/a	revoked 12/00
1991-1992	1990.568	1075 Front	0111-001	32,000	13381	complete	1993	
	1987.847	601 Duboce	3539-001	36,000	13254	doesn't count	n/a	revoked 12/00
1992-1993								No Projects Approved During Allocation Period
1993-1994								No Projects Approved During Allocation Period
1994-1995								No Projects Approved During Allocation Period
1995-1996								No Projects Approved During Allocation Period
1996-1997								No Projects Approved During Allocation Period
1997-1998								No Projects Approved During Allocation Period
1998-1999	1998.362	1301 Sansome	0085-005	31,606	14784	complete	1999	
1999-2000	1998.369	435 Pacific	0175-028	32,500	14971	complete	2003	
	2000.459	2801 Leavenworth	0010-001	40,000	15922	complete	2001	The Cannery
	1998.497	215 Fremont	3738-012	47,950	15939	complete	2002	
	1999.668	38-44 Tehama	3736-111	49,950	15967	doesn't count	n/a	reapproved as large project
	1998.090	845 Market	3705-09-18 into 3705-049	49,100	15949	complete	2006	Bloomingdale's
2000-2001	1999.821	178 Townsend	3788-012	49,002	16025	doesn't count	n/a	18mos exp 5/2/02; 2005.0470 new e. & k. appl for residential, building permit application no.2006829851 for residential submitted on 8/29/07; 9/4/08 CPC approves conversion to Residential (M17688) - Revoked on 1/23/09
	2000.987	530 Folsom	3736-017	45,944	16023	complete	2006	
	1999.300	272 Main	3739-006	46,500	16049	doesn't count	n/a	18mos exp 6/7/02; permit 2005021858l0 filed 2/05. 12/15/08 - Building Permit Application No. 200811136470 issued for demolition of two buildings on property. To be used for temp Transbay facility. REVOCATION LETTER ISSUED 3/16/09
	2000.1162	35 Stanford	3788-038	48,000	16070	complete	2007	
	2000.774	2800 Leavenworth	007/008	34,945	16071	complete	2001	The Anchorage
	2000.552	199 New Montgomery	3722-021	49,345	16104	doesn't count	n/a	revoked 1/6/05
	2000.1269	3433 Third	5203-23	42,000	16107	doesn't count	n/a	building permit application no. 200011014657 withdrawn on 11/9/06. REVOCATION LETTER ISSUED 9/25/07

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SMALL OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	1999.795	177 Townsend	3794-4,7	46,775	16122	doesn't count	n/a	revoked 1/6/05
	2000.539	500 Pine	258-4 to 9/033	44,450	16113	approved	n/a	**18mos exp 9/15/02 - CPC received project status update on 10/11/07 (project is associated with 350 Bush Street - Large Office Approval). Building permit application no. 200011024683 approved by CPB on 9/4/08. Building permit application no. 200806275535 submitted for shoring work (9/4/08 - under review by DPW-BSM)**
	2000.986	150 Powell	327-22	39,174	16118/16423	doesn't count	n/a	time limit for construction extended (see Case No. 2002.03638). Project converted to residential use (see Case No. 2006.1299)
	1998.281	185 Berry	3803-005	49,500	16143	doesn't count	n/a	new approval 2005
	2000.190	201 Second	3736-097	44,500	16148	doesn't count	n/a	converted to residential use
	2000.660	35 Hawthorne	3735-047	40,350	16174	doesn't count	n/a	converted to residential use - see 2004.0852 and building permit application no. 200509082369
	2000.122	48 Tehama	3736-084/085	49,300	16235	doesn't count	n/a	revoked at Planning Commission hearing on 6/9/11
	2000.723	639 Second	3789-005/857-971	49,500	16241	doesn't count	n/a	revoked 1/6/05
	1999.423	699 Second	3789-004/857-971	49,500	16240	doesn't count	n/a	revoked 1/10/05
2001-2002	2001.0050	3251 18th Street	3591-018	49,500	16451	doesn't count	n/a	6/28/07 - building permit application no. 200706285450 submitted to revise project and reduce office space to approx. 10,000 gsf. - REVOCATION LETTER ISSUED 8/16/07
2002-2003	2002.0223	501 Folsom Street	3749-001	32,000	16516	complete	2006	
2003-2004								No Projects Approved During Allocation Period
2004-2005	2005.0106	185 Berry Street	3803-005	49,000	17070	complete	2008	
2005-2006								No Projects Approved During Allocation Period
2006-2007	No Case	654 Minnesota	4042-003 & 004	43,939	none	complete	2009	Confirmed by UCSF via 7/13/2007 letter from UCSF and associated LoO
2007-2008								No Projects Approved During Allocation Period
2008-2009	2006.1294	110 The Embarcadero	3715-002	41,940	17804	doesn't count	n/a	18mos exp 7/14/10 - E appealed to BoS and overturned on 3/17/09. Application withdrawn and case closed on 12/30/09.
2009-2010	2009.0847	660 Alabama Street	4020-002	39,691	17973	complete	2011	CFC for building permit application no. 201001144798 issued on 3/23/11
2010-2011								No Projects Approved During Allocation Period
2011-2012	2011.0468	208 Utah / 201 Potrero	3932-017	48,732	18608	complete	2012	BPA No. 201205090093
	2012.0014	808 Brannan Street	3780-004O	43,881	18559	complete	2013	BPA No. 201201031584
	2012.0128	375 Alabama Street	3966-002	48,189	18574	complete	2013	BPA No. 201209210308
	2011.1049	385 7th / 1098 Harrison	3754-017	42,039	18700	complete	2013	BPA No. 201212115895
	2011.1410	275 Brannan Street	3789-009	48,500	18672	complete	2013	BPA No. 201207164925
2012-2013								No Projects Approved During Allocation Period
2013-1014	2013.0992	3130 20th Street	4083-002	32,081	19188			BPA No. 201409297604 for change of use approved by Planning on 1/6/15 and now awaiting changes from architect as requested by DBI as of 2/3/15.
	2013.0627	660 3rd Street	3788-008	40000	19234	complete	2015	BPA No. 201411252480 issued on 2/24/15.

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SMALL OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
2014-2015	2013.1600	340 Bryant Street	3764-061	47536	19311	under construction		BPA 201305177189 issued 7/15/15.

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LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
1986-1987	1986.085	600 California	0241-003 into 0241-027	318,030	11077	complete	1992	
	1984.432	235 Pine	0267-015	147,500	11075	complete	1991	
	1984.274	33 Columbus	0195-004	81,300	11070	doesn't count	n/a	revoked 12/00
	1985.079	343 Sansome	0239-002	160,449	11076	complete	1991	
1987-1988								No Projects Approved During Allocation Period
1988-1989	1984.199	524 Howard	3721-013	199,965	11683	doesn't count	n/a	reapproved in 1998 under Case No. 1998.843.
1989-1990	1987.613	150 California	0236-003 into 0236-019	195,503	11828	complete	2001	
1990-1991	1989.589	300 Howard	3719-005 into 3719-018	382,582	13218	complete	2001	aka 199 Fremont Street
1991-1992								No Projects Approved During Allocation Period
1992-1993								No Projects Approved During Allocation Period
1993-1994								No Projects Approved During Allocation Period
1994-1995	1994.105	101 Second Street	3721-072	386,655	13886	doesn't count	n/a	Reapproved in 1997 under Case No. 1997.484.
1995-1996								No Projects Approved During Allocation Period
1996-1997	1997.484	101 Second Street	3721-72:75 into 3721-089	368,800	14454	complete	2000	
1997-1998	1997.215	55 Second Street	3708-019A/033/034 into 3708-096	283,301	14542	complete	2002	aka One Second Street
	1996.643	244-256 Front	0236-018	58,650	14601	complete	2001	aka 275 Sacramento Street
	1997.787	650 Townsend	3783-009	269,680	14520	complete	2001	aka 699-08th Street
	No Case	455 Golden Gate	0765-002/003	420,000	none	complete	1998	State office building. See also case no. 1993.707.
	1997.674	945 Battery	0135-001	52,715	14672	complete	1998	
	1997.470	475 Brannan	3787-031	61,000	14685	complete	2001	
	1998.144	250 Steuart	3741-028 into 3741-035	540,000	14604	complete	2002	aka 2 Folsom/250 Embarcadero
1998-1999	1998.135	One Market	3713-006	51,822	14756	complete	2000	
	1998.843	524 Howard	3721-013	201,989	14801	doesn't count	n/a	revoked 6/11 under Case No. 2011.0503
	1998.646	Pier One	9900-001	88,350	none	complete	2003	Port office building

LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	1998.321	554 Mission	3708-015/017/018 into 3708-095	645,000	14893	complete	2003	aka 560/584 Mission
	1999.167	700 Seventh	3799-001 into 3799-008	273,650	14895	complete	2006	aka 625 Townsend
	1999.566	475 Brannan	3787-031	2,500	14884	complete	2001	addition to previous approval - 1997.470
	1998.268	631 Folsom	3750-090	170,000	14750	doesn't count	n/a	project converted to residential - allocation revoked 12/00.
1999-2000	1999.106	670 Second	3788-043/044	60,000	14907	complete	2001	
	1999.027	160 King	3794-025	176,000	14956	complete	2002	
	1998.714	350 Rhode Island	3957-001	250,000	14988	complete	2004	
	1998.902	First & Howard	3721; 3736; 3737	854,000	15006	complete/approved	405 Howard - 2005; 505-525 Howard - under review; 500 Howard - 2003	18 mos exp 9/2/01. Includes 3 of 4 buildings at First & Howard (see bldg #1 - 400 Howard - below): bldg #2 - 405 Howard (3737-030) - 460,000 gsf office - 2000021721 33 - complete); bldg #3 - 505-525 Howard (3736-121/114) - 178,000 gsf office - 200610316514 currently (8/4/08) under review by Planning (see also 2008.0001 for additional allocation); bldg #4 -500 Howard (3721-119) - 216,000 gsf office - 200006172952 - complete).
	1999.176	235 Second	3736-061 into 3736-123	180,000	15004	complete	2002	

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LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	2000.127	500 Terry Francois	3838; 3839 into 8721-001/010	280,000	15010	complete	2008	MB 26a
	1998.766	535 Mission	3721-068	252,000	15027	doesn't count	n/a	revoked and reapproved as residential
	1998.635	2101 Bryant	4080-007	148,000	15044	doesn't count	n/a	project converted to residential - allocation revoked 1/10/05
	2000.329	550 Terry Francois	3839; 3840 into 8721-001/011	225,004	15055	complete	2002	MB 28
	1999.583	899 Howard	3733-079	153,500	15062	complete	2005	
2000-2001	1998.902	First & Howard	3720-008	295,000	16069	complete	2008	First & Howard - Building #1 (400 Howard)
	2000.1293	550 Terry Francois	3839: 3840 into 8721-001/011	60,150	16110	complete	2002	addition to 2000.329.
	2000.1295	Mission Bay 26/2	3840; 3841 into 8721-001-012	145,750	16111	doesn't count	n/a	AKA MB 26 East. returned to cap for approval of 2002.0301
	1999.603	555 Mission	3721-69,70,78...	499,000	16130	doesn't count	n/a	project revised - allocation revoked and reapproved under Case No. 2007.0798.
	2000.277	901 Market	3705-48	112,750	16140	doesn't count	n/a	project abandoned per letter from sponsor
2001-2002	2000.541	350 Bush	269-2,2a,3,22...	344,500	16273	approved	n/a	18mos exp 5/8/03 - CPC received project status update on 10/11/07 (associated with 500 Pine Street - Small Office Approval). Sponsor email reports that 18-month period expired May 22, 2005 due to appeals. Building permit application no. 200708078938 currently under review by DBI/FD/DPW.
	2001.0444	38-44 Tehama	3736-111	75,000	16280	complete	2003	
	2000.319	235 Second	3736-61,62,64-67	64,000	16279	complete	2002	modify 1999.176 - convert warehouse from PDR to office.
	2001.0689	250 Brannan	3774-25	113,540	16285	complete	2002	
	2001.0798	555 Mission	3721-69,70,78-81, 120	549,000	16302	complete	2008	
	2002.0301	Mission Bay 42/4	8709-10	80,922	16397	doesn't count	n/a	revoked and reapproved as 2002.1216 (1600 Owens)
	2002.0300	1700 Owens	8709-007	0*	16398	complete	2007	Alexandria District (160,100). West Campus. 164,828
2002-2003	No Case	7th/Mission GSA	3702-15 ...	514,727	none	complete	2007	Federal Building
	2002.0691	499 Illinois/201-16th Street	3940-001	429,542	16483	doesn't count	n/a	revoked and reapproved as 2006.0384 (201 16th Street) MB Block X4

LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
2003-2004	2001.1039	55 9th Street	3701-063	268,000	16760	doesn't count	n/a	200408111247 issued 5/19/05 - Authorization REVOKED by Planning Commission Motion Nos. 17521 and 17522 for proposal to convert project to residential use.
	2000.1229	Pier 30-32	3770-001	370,000	none	doesn't count	n/a	E, K & I Cases created, no B case created. BCDC permit approved in 2003 and allocation made for accounting purposes, but permit never acted upon. 2/09 - 370,000 added back to cap because project does not appear to be moving forward.
	No Case	Presidio - Letterman Digital Arts		839,301	none	complete	2006	
2004-2005								No Projects Approved During Allocation Period
2005-2006	2006.0384	201-16th Street	3940-001	430,000	17223	complete	2008	aka 1409-1499 Illinois/MB Block X-4. 18 mos exp 10/6/07. Project (200607186938) complete 11/19/08
2006-2007	2006.1212	1500 Owens	8709-006	0*	17333	complete	2009	Alexandria District - West Campus (158,500); 200611298694 issued 5/24/07 (aka MBS Blk 41-43, Parcel 5). Under construction. Estimated completion in March 2009.
	2006.1216	1600 Owens	8709-004/010	0*	17332	approved	n/a	Blk 41-43, Parcel 4. 200711097802 issued 6/3/08. Piles driven, no further work performed. Not currently active 5/18/2011
	2006.1509	Alexandria District - North Campus (MB 26/1-3; 1455 Third Street/455 Mission Bay South Blvd/450 South Street)	8721-012/8720-011/016/017	0*	17401	complete/approved	n/a	MBS Blk 26, Parcels 1-3, project proposes 3 buildings - building permit application no. 200704279921 (455 Mission Bay South Blvd.) COMPLETE on 11/17/09 for 5 story office/lab; 200705090778 (450 South Street) COMPLETE on 10/23/09 for "parking garage with 7 stories new building." 200806104062 filed on 6/10/08 for new 10-story office building - Issued 4/23/10, but not under construction.
	2006.1536	1515 Third Street	8721-012	0*	17400	approved	n/a	MBS Blk 27, Parcel 1 see also 2006.1509. 200806265407 filed 6/26/08 for 6-story office building - currently (9/29/08) being reviewed by SFFD. Sold to salesforce.com with 202,983 sf allocation as of April 2011.
	2005.1062	650 Townsend	3783-009	375,151	17440	complete	2009	18 mos exp 12/7/08. 200705151356 issued 2/20/08 - Conversion of existing structure into office - no major construction required. Final Inspection (3/16/09)

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LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	2006.0616	120 Howard	3717-019	67931	17466	complete	n/a	Construction completed in 2012
	2006.1273	535 Mission	3721-068, 083	293,750	17470	approved	n/a	18 mos exp 2/2/09; 2/12/08 - 200508049463 issued by CPB on 8/21/08. Appealed to Board of Permit Appeals on 8/29/08 (Appeal No. 08-137) - appeal withdrawn and permit reinstated on 8/29/08. Separate permits issued for pile indicators, site cleanup and fencing. 10/24/08 - Construction started in early 2013.
2007-2008	2006.0660	100 California	0236-017	76,500	17544	approved	n/a	18 mos exp 7/31/09. No building permit on file as of 5/18/11. Beacon Capital started the process and then allegedly sold to Broadway Partners, who are reputed to be current owners- no current status 6/16/14 update - Broadway Partners website lists the property as theirs. No building permits relating to project on file. Site visit on 6/17/14 shows no signs of upcoming construction activity.

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LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	2008.0001	505-525 Howard	3736-001:004/114/121	74,500	17641	approved	n/a	18 mos exp 12/26/09. 200610316514 for new construction COMPLETED on 3/11/14. "First & Howard" bldg 3 - see 1998.902. 2005.0733 on file to legalize existing surface parking lot.
	No Case	680 Folsom Street	3735-013	117,000	none	approved	n/a	Redevelopment (Yerba Buena)
	2008.0850	Alexandria District	various	1122980	17709	approved	n/a	Establishes Alexandria Mission Bay Life Sciences and Technology Development District ("Alexandria District") to consolidate previous and future allocations.
	2008.0484	600 Terry Francois	8722-001	0*	17710	approved	n/a	Alexandria District - East Campus (312,932) - schematic design.
	2008.0483	650 Terry Francois	8722-001	0*	17711	approved	n/a	Alexandria District - East Campus (291,367) - schematic design.
	2008.0690	1450 Owens	8709-006	0*	17712	approved	n/a	Alexandria District - West Campus (61,581) - schematic design as of 4/2011
2008-2009								No Projects Approved During Allocation Period
2009-2010	2009.1026	850-870 Brannan Street	3780-006/007/007A/072	138,580	18095	complete	2013	aka 888 Brannan Street
	2007.0946	Candlestick Point - Hunter's Point	Candlestick Point and Hunter's Point Shipyard	800000	18102	approved	n/a	NO ALLOCATION GRANTED YET. First 800,000 gsf of office development within the Candlestick Point - Hunter's Point Project Area to receive priority office allocation over all projects except the Transbay Transit Tower or those within Mission Bay South.
	2006.1106	222 Second Street	3735-063	430,650	18170	approved	n/a	BPA No. 200711309386
2010-2011	No Case	Alexandria District	various	200000	17709	approved	n/a	additional allocation per terms of Motion 17709 by Letter of Determination
	2006.1524	350 Mission Street	3710-017	335,000	18268	approved	n/a	
	2007.0903	Treasure Island	1939-001/002	0	18332	approved	n/a	Priority Resolution Only for 100,000gsf.
2011-2012	No Case	Alexandria District	various	27020	17709	approved	n/a	additional allocation per terms of Motion 17709 by Letter of Determination
	2011.0583	850-870 Brannan Street	3780-006, 007, 007A, and 072	113,753	18527	approved	2013	aka 888 Brannan Street
	2011.1147	601 Townsend Street	3799-001	72,600	18619	approved	n/a	BPA No. 201408063120 approved by Planning on 8/8/14, but not yet issued by DBI.
	2009.0885	1100 Van Ness Ave	0694-010	242,987	18599	doesn't count	n/a	CPMC - Cat Hill MOB; rescinded & reallocated in 2013 cycle
	2011.0895	460-462 Bryant St	3763-015A	59,475	18685	under construction	n/a	BPA No. 201312194664 issued on 5/22/14.
	2012.0041	444 DeHaro St	3979-001	90500	18653	under construction	2013	BPA No. 201312194626 issued on 12/31/13.
	2012.0409	185 Berry St	3803-005	101,982	18690	under construction	n/a	aka China Basin Landing.

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LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	2012.0371	100 Potrero Ave.	3920-001	70070	18704	complete	2013	EN Legitimization. BPA No. 201212286973 issued 5/6/13.
	2009.0886	3615 Cesar Chavez	6576-021	99,848	18595	doesn't count	n/a	CPMC - St. Luke's MOB; rescinded & reallocated in 2013 cycle
2012-2013	2012.0257	101 1st Street	3720-001	1,370,577	18725	under construction	n/a	Transbay Tower; aka 425 Mission St. BPA No. 201303132080.
	2007.0456	181 Fremont Street	0308-001	361038	18764	under construction	n/a	BPA No. 201305015894 issued 12/26/13.
	2012.1046	1550 Bryant Street	3923-006	108,399	18732	complete	2013	EN Legitimization. BPA No. 201302069627
	2012.1482	1800 Owens	8727-005	700000	18807	approved	n/a	currently under review at OCII, DBI and SFFD. Approved 2/14/13
	2009.0885	1100 Van Ness Ave	0694-010	242987	18890	under construction	n/a	CPMC - Cat Hill MOB
	2009.0886	3615 Cesar Chavez	6576-021	94,799	18886	approved	n/a	CPMC - St. Luke's MOB
	2007.0385	345 Brannan Street	3788-039	102285	19000	under construction	n/a	Construction started in early 2014.
	2012.0799	270 Brannan Street	3774-026	189000	18988	under construction	n/a	BPA No. 201312174402 issued on 4/25/14. Foundation and Superstructure Addendum approved. Architectural Addendum under review by DBI/DPW/PUC. "Groundbreaking" in August 2014.
	2012.0906	333 Brannan Street	3788-042	175,450	18952	under construction	n/a	BPA No. 201306280744 issued 1/5/14. Planning approved Arch addendum on 2/20/14.
	2013.0276	350 Mission Street	3710-017	79,680	18956	under construction	n/a	Salesforce (No. 2). BPA No. 201108011461 issued 9/5/12. Planning approved Arch addendum on 9/11/14.
	2013.0585	999 Brannan Street	3782-003	143292	18950	complete	2014	EN Legitimization. BPA No. 201306280728 issued 4/28/14.
2013-2014	2012.0605	300 California Street	0238-002	56459	19034	approved	n/a	Approved 12/5/13. No BPA filed.
	2013.0226	665 3rd Street	3788-041	123,700	19012	complete	2013	BPA No. 201311222636 issued on 12/31/13 to legalize office space.
	2013.0544	410 Townsend Street	3785-002A	76000	19062	approved	n/a	BPA No. 201306280587 approved by Planning on 7/30/14, but now "in hold" at DBI as of 12/3/14.
	2013.0493	888 Brannan Street	3780-006, 007, 007A, and 072	10000	19049	complete	2014	AirBnB (No. 2) to convert GF parking to office.
	2013.0007	81-85 Bluxome Street	3786-018	55,000	19088	under construction	n/a	BPA No. 201404072588 issued 12/17/14. Arch addendum approved by all agencies except Planning.
2014-2015	2012.1187	501-505 Brannan Street	3786-038	137446	19295	approved	n/a	No BPA filed. The approved ancillary office building project recently submitted a PPA to Planning proposing a "Phase II" for an additional 11 stories and 168,820 sf of office space.
	2012.0203	100 Hooper Street	3808-003	284471	19315	approved	n/a	BPA Nos. 201410023785 and 201410269377 approved by Planning on 4/13/15, approved by DBI 6/24/15. Currently under review by SFFD and SFPUC.

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BAY AREA AIR QUALITY MANAGEMENT DISTRICT

November 2, 2015

Tiffany Bohee
Executive Director
Office of Community Investment and Infrastructure
One S. Van Ness Ave., 5th Floor
San Francisco, CA 94103

ALAMEDA COUNTY
Tom Bates
Margaret Fujioka
Scott Haggerty
Nate Miley

CONTRA COSTA COUNTY
John Gioia
David Hudson
Karen Mitchoff
Mark Ross

MARIN COUNTY
Katie Rice

NAPA COUNTY
Brad Wagenknecht

SAN FRANCISCO COUNTY
John Avalos
Edwin M. Lee
Eric Mar
(Vice-Chair)

SAN MATEO COUNTY
David J. Canepa
Carole Groom
(Chair)

SANTA CLARA COUNTY
Cindy Chavez
Liz Kniss
(Secretary)
Jan Pepper
Rod G. Sinks

SOLANO COUNTY
James Spering

SONOMA COUNTY
Teresa Barrett
Shirlee Zane

Jack P. Broadbent
EXECUTIVE OFFICER/APCO

Subject: Response to Comments on the DSEIR for the Event Center & Mixed-Use Development at Mission Bay Blocks 29-32 (Project).

Dear Ms. Bohee:

The Bay Area Air Quality Management District (Air District) is willing to assist the City and County of San Francisco (City) by administering an off-site mitigation program to reduce this Project's significant air quality impacts to the extent feasible. As we have discussed extensively with City staff, the $321,646 identified in M-AQ-2b is not sufficient to achieve the 17 tons per year of ozone precursor emission reductions needed for this Project. Due to the nature of air quality impacts that need to be mitigated, comparison of the Air District off-site mitigation program identified for this Project to other air district programs is inappropriate and incorrect.

The amount of funds required to reduce 4.4 tons of reactive organic gases (ROG) and 12.6 tons of oxides of nitrogen (NOx), including a 5 percent administration fee, is $620,922. This amount is based on a study of the Air District's Vehicle Buy Back (VBB) program funds spent over the last 3 years and represents the average cost of reducing ROG and NOx during that three year period. Only through the VBB program can the Air District achieve the contemporaneous emission reductions and other conditions set forth in M-AQ-2b.

Air District staff continues to be willing to assist the City in implementing an off-site mitigation program. However, the Final Environmental Impact Report Response to Comments includes the following statement: "Acceptance of this fee by the BAAQMD shall serve as an acknowledgement and commitment by the BAAQMD to: (1) implement an emissions reduction project(s) within one year of receipt of the mitigation fee to achieve the emission reduction objectives specified above [i.e. 17 tons of ozone precursors per year]". Given this language, unless the City amends M-AQ-2b to fund this feasible mitigation measure at the $620,922 level previously discussed with City staff, the Air District will be unable to participate in offsetting this Project's air quality impacts.

EXHIBIT 4

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If you have any questions, please contact Alison Kirk, Senior Environmental Planner, at (415) 749-5169 or akirk@baaqmd.gov.

Sincerely,

Jean Roggenkamp
Deputy Executive Officer

cc: BAAQMD Vice Chair Eric Mar
BAAQMD Director John Avalos
BAAQMD Director Edwin M. Lee

O-MBA24L9

OCII
office of
COMMUNITY INVESTMENT
and INFRASTRUCTURE

DATE: November 2, 2015

TO: Tiffany Bohee, OCII Executive Director

FROM: Chris Kern, City Planning Department
Sally Oerth, OCII Staff

SUBJECT: BAAQMD November 2, 2015 letter re Ozone Precursors Offset Mitigation Fee

The City Planning Department and the staff of the Office of Community Investment and Infrastructure (OCII) have reviewed the November 2, 2015 letter from the Bay Area Air Quality Management District regarding the Warriors Event Center and Mixed Use Development Subsequent Environmental Impact Report (SEIR). The letter states that the $18,030 per weighted ton per year plus a 5% administrative fee mitigation fee identified in Mitigation Measure M-AQ-2b of the SEIR is insufficient to achieve the required reduction of 17.0 tons per year of ozone precursors. The letter proposes that the mitigation fee should be based on the BAAQMD's Vehicle Buy Back Program, at a cost of $620,922 (or approximately $36,525 per weighted ton per year) to achieve the required emissions reduction.

As discussed in the Draft SEIR (pages 5.4-41 through 5.4-42) and the Responses to Comments document (pages 13.13-65 through 13.13-69), the offset fee identified in Mitigation Measure M-AQ-2b is based on the California Air Resources Board (CARB) Carl Moyer program cost-effectiveness criteria. These criteria were developed by CARB to establish the upper limit for emissions offset projects eligible to receive funding through the Carl Moyer program.

Planning staff has been in communication with BAAQMD with regard to its suggestion that a higher fee may be warranted to offset project emissions to a less than significant level and found that BAAQMD could not establish that an increased rate beyond that of the Carl Moyer Program plus a five percent administrative fee could meet the "rough proportionality" standard required under CEQA. The Carl Moyer fee structure was reviewed and updated by CARB in March of 2015 and became fully implemented on July 1, 2015. The offset costs cited in Mitigation Measure M-AQ-2b Emission Offsets are consistent with those of the CARB and other operating California air districts. For example, in the Sacramento Metropolitan Air Quality Management District, the off-site construction mitigation fee rate is $18,030 per ton of excess NOx emissions as of July 1, 2015 (plus an administrative fee of 5 percent) and is based on the cost effectiveness formula established in California's Carl Moyer Incentive Program. In the San Joaquin Valley Air Pollution Control District, the Indirect Source Review (ISR) program requires that an offsite reduction fee of $9,350/ton plus a 4 percent administration fee be applied

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MAYOR

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EXHIBIT 5

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for NOx emission reductions that cannot be achieved through onsite emission reduction measures. Furthermore, the offset costs in Mitigation Measure M-AQ-2b is consistent or even higher than comparable offset programs in the SFBAAB.[1]

The BAAQMD's November 2, 2015, letter does not establish that the CARB cost-effectiveness criteria are inappropriate for determining the offset costs under Mitigation Measure M-AQ-2b. Based on the information and analysis presented in the Draft SEIR, the Responses to Comments and supporting technical analyses, Planning Department and OCII staffs continue to believe that the offset fee established in Mitigation Measure M-AQ-2b is sufficient to achieve the required emissions offsets. In addition, as discussed in the Responses to Comments document, Mitigation Measure M-AQ-2b has been revised since publication of the Draft SEIR to allow the project sponsor to directly implement an emissions offset project as an alternative to entering into an agreement with the BAAQMD.

Therefore, for the reasons summarized above and discussed in greater detail in the SEIR and Responses to Comments, the November 2, 2015, letter from the BAAQMD does not alter the analysis or conclusions reached in the SEIR.

[1] Keinath, Michael, Rambol Environ, 2015. Analysis of the Proposed Offset Program for the Golden State Warriors. October 19, 2015.

O-MBA25L10

Law Offices of
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November 6, 2015

San Francisco Public Works
Bureau of Street-Use and Mapping
1155 Market Street, 3rd Floor
San Francisco, CA 94103

Re: Warriors Arena Project Subdivision Map Application, Block 8722/001, 008
(Project ID # 8593)

Dear Bureau of Street-Use and Mapping:

This office represents the Mission Bay Alliance ("Alliance"), an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project").

The Mission Bay Alliance requests notice of any public hearing, to be provided to my office, on this application.

The Mission Bay Alliance objects to approval of the Project's subdivision map application for the following reasons.

1. The Project SEIR does not comply with CEQA, as described in the Alliance's many comments on the SEIR submitted to the Successor Agency. 1 [LC-ERP-1]

2. The Project does not comply with the Mission Bay South Redevelopment Plan as discussed in my November 5, 2015, letter to the Planning Commission attached as Exhibit 1. 2 [LC-PP-1]

3. The Project does not comply with the San Francisco General Plan as discussed in my November 5, 2015, letter to the Planning Commission attached as Exhibit 1. 3 [LC-PP-3]

4. The Project does not comply with Proposition M, as codified at Planning Code Section 320 et seq and Planning Commission Motion 17709 , and is it is ineligible for allocation of any office space under Planning Code section 321 and Motion 17709, as discussed in my November 5, 2015, letter to the Planning Commission attached as Exhibit 1. 4 [LC-PP-2]

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Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

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November 5, 2015

President Rodney Fong and Members of the Planning Commission
City and County of San Francisco
1650 Mission Street, Suite 400
San Francisco, CA 94103

Re: Warriors Arena Project: Planning Codes section 321 and 305, General Plan Inconsistency and CEQA Findings.

Dear Commission President Fong and Members of the Commission:
:

This office represents the Mission Bay Alliance ("Alliance"), an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project"). The Mission Bay Alliance objects to approval of this Project and certification of the Project SEIR.

1. The Project is ineligible for any office space allocation under Planning Code section 321 and Motion 17709.

a. This Project does not comply with the Design for Development.

Resolution 14702 and Motion 17709 require that any project in the Alexandria District must comply with the Mission Bay South Design for Development in order to be eligible for any office space allocation. (See Motion 17709, p. 9, Finding 9,[1] Finding 10[2].)

[1]"This schedule of phased authorization will ensure that, in accord with Resolution 14702, adequate office space can be allocated to those projects within the Development District that are determined to be in compliance with the D for D requirements, while also complying with Section 321 of the Planning Code forbidding exceedance of the square footage available for allocation in any given annual cycle."

[2]"Pursuant to Resolution 14702, the Commission is charged with determining whether a project seeking authorization conforms to applicable standards in the D for D Document, which supersedes the criteria set forth in Section 321 and other provisions of the Code except as provided in the MBS Plan. The projects previously approved were determined to have met the MBS Redevelopment Plan and the D for D Document standards and guidelines, and requirements for childcare, public art, and other provisions of the Plan Documents, and retain

EXHIBIT 1

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This Project does not comply with the Design for Development, as evidenced by the many amendments that the Successor Agency made to the Design for Development to accommodate the Project. Therefore, it is ineligible for allocation of any office space under Planning Code section 321 and Motion 17709.

b. This Project is inconsistent with the Redevelopment Plan.

A basic premise of the Planning Commission decisions in Resolution 14702 and Motion 17709, and a fundamental rationale for "superseding" section 321's guidelines in favor of the Redevelopment Plan and Redevelopment Plan documents, were the Commission's findings that the Redevelopment Plan met standards set in section 321, the San Francisco Master Plan, the priority policies in Planning Code section 101.1, and the requirements of redevelopment law. In short, in order to be eligible for the office space allocation available under motion 17709, the Project must be consistent with the Redevelopment Plan.

This Project is inconsistent with the Redevelopment Plan because, as demonstrated in the November 2, 2015, letter from Susan Brandt-Hawley, my co-counsel for the Alliance (attached as Exhibit 1), this Project is not an allowable secondary use under the Redevelopment Plan. However, in the alternative, as shown in my November 2, 2015, letter (attached as Exhibit 2), if the Project is an allowable secondary use under the Redevelopment Plan, then it requires a variance under section 305 of the Plan before Project approval.

2. The office space allocation requested for this Project exceeds the amount authorized for the Alexandria District.

In 1986, San Francisco voters passed Proposition M, a referendum limiting the amount of office space that can be approved each year. Codified as Section 321 of the San Francisco Planning Code, it provides that "[n]o office development may be approved during any approval period if the additional office space in that office development, when added to the additional office space in all other office developments . . . would exceed 950,000 square feet." (San Francisco Planning Code § 321(a)(1).) Office space is defined to mean "construction . . . of any structure" that has the "effect of creating additional office space."

The current Project plans call for the construction of two office towers on Mission Bay South Parcels 29 and 31, comprising 309,436 square feet and 267,486 square feet of office space, respectively, for

that design approval, along with all previously imposed conditions of approval. Future projects requesting authorization will be brought before the Commission for design review in accord with Resolution 14702, and upon determination by the Commission that such proposals are in conformity with the D for D and other applicable requirements, office space may be allocated for such new structures from the unassigned amount available in the Development District."

a total of 576,922 square feet of office space. (Executive Summary, p. 2.)

In 2008, the Planning Commission adopted Motion No. 17709. Motion 17709 approved a cumulative total office space allocation for all projects within the Alexandria Development District of 1,350,000 gross square feet. (Motion 17709, p. 9, Finding 9.) Of that amount, 1,222,980 was allocated before the adoption of Motion 17709. (Motion 17709, p. 5, Finding 4, Table 1.) Therefore, at the time Motion 17709 was proposed, 227,020 gsf of unallocated office remained for allocation. (Motion 17709, p. 9, Finding 9, Table 4.)

According to Motion 17709, there were three pending projects at that time, at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street. Motion 17709 states that these projects represented 665,880 square feet of "potential office space." (Motion 17709, p. 5, Finding 5, Table 2.) Motion 17709 also states an intent to authorize only 57% of "potential office space" for actual office space after 10/18/09, 53% of "potential office space" for actual office space after 10/18/10, and 50% of "potential office space" for actual office space after 10/18/11.

Motion 17709 does not state how much actual office space was approved for the three pending projects at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street. The Planning Department's Office Development Annual Limitation Program record (attached as Exhibit 3) shows "0*" in the "size" column for these projects. (Exhibit 3, p. 19.) Assuming the Planning Commission allocated office space to these projects at the 57% ratio, that amount is 379,552 gsf (665,880 x .5). **This amount exceeds the remaining office space available for allocation at that time (i.e., 227,020 gsf).**

According to Motion 17709, there were two additional areas where the applicant indicated an intent to develop "potential office space," namely, MB South Blocks "29 and 31" and "33-34." (Motion 17709, p. 5, Finding 6, Table 3.) Motion 17709 states that these possible future projects represented 915,700 square feet of "potential office space," with Blocks "29 and 31" at 515,700 GSF. (Motion 17709, p. 5, Finding 6, Table 3.)

Assuming, again, that the Planning Commission allocated office space to these areas at the 50% ratio, that amount is 457,850 GSF (915,700 x .5), with 257,850 allocated to Blocks "29 and 31" at 257,850 gsf (515,700 x .5).

The Draft Motion proposed for adoption at today's hearing states that "Blocks 29-32 are included in the Development District and have been allocated a total of 677,020 sf of office space pursuant to Motion No. 17709." (Draft Motion, p. 3.) This is incorrect in at least four ways.

First, it is unclear and unstated how Planning staff derived the 677,020 gsf number.

Second, after approval of the office space allocation for the three pending projects at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street, there was no office space left in the

Alexandria District to allocate - as discussed above.

Third, even if one adds together the "potential office space" numbers for Blocks 29-32 in Motion 17709, the sum is 1,119,999 gsf, and 50% of that is only 560,000 gsf. The two office towers proposed for this Project require 576,922 gsf. (See Executive Summary, pp. 1-2: 309,436 gsf in the South tower and 267,486 gsf in the 16th Street tower). This number exceeds 560,000 gsf.

Fourth, when one adds the 25,000 gsf for office space in the arena building (see SEIR p. 3-17), the office space for this project totals 601,922 gsf (i.e., 576,922 plus 25,000), which also exceeds 560,000 gsf.

Fifth, to the extent there was any office space left for Motion 17709 to allocate after approval of the office space allocation for the three pending projects at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street, Motion 17709 allocated only 257,850 gsf to Blocks 29 and 31 (i.e., 50% of 515,700) pursuant to Finding 6, Table 3. **The 576,922 gsf of office space in the two office towers for this Project are located in Blocks 29 and 31; and the total of 576,922 gsf vastly exceeds the 257,850 gsf that may arguably be available.**

Because the office towers called for in the Project exceed the allowable office space cap, Section 321(a)(1) and Motion 17709 require the Planning Commission to deny approval of the Project and of the requested allocations of office space.

3. General Plan Inconsistency: BAAQMD.

San Francisco Master Plan Policy 4.1 states:

> Support and comply with objectives, policies, and air quality standards of the Bay Area Air Quality Management District.
> Regionwide monitoring of air quality and enforcement of air quality standards constitute the primary means of reducing harmful emissions. The conservation of San Francisco's air resource is dependent upon the continuation and strengthening of regional controls over air polluters. San Francisco should do all that is in its power to support the Bay Area Air Quality Management district in its following operations:
> - Monitoring both stationary and mobile sources of air pollution within the region and enforcing District regulations for achieving air quality standards.
> - Regulating new construction that may significantly impair ambient air quality.
> - Maintaining alert, permit, and violations systems.
> - Developing more effective controls and method of enforcement, as necessary

The attached letter from the Bay Area Air Quality Management District (Exhibit 4) and the City's response (Exhibit 5) show that this Project does not comply with this policy.

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The Alliance previously commented on the Draft SEIR (Comment AQ-7) that the per ton charge for emission offsets is too low to achieve complete offset of the Project's emissions. The City's response to comments on this point is cagey, but it does suggest what now turns out to be fact - that the BAAQMD agreed with the comment - because the response states:

> SF Planning has been in communication with BAAQMD with regard to its suggestion that a higher fee may be warranted to offset project emissions to a less than significant level and found that BAAQMD could not establish that an increased rate beyond that of the Carl Moyer Program plus a five percent administrative fee could meet the "rough proportionality" standard required under CEQA.

(RTC, p. 13.13-67.) The RTC's rationale for contending that a higher offset fee would not meet the "rough proportionality" standard is that offset fees in other areas of the state are not higher than the offset fee proposed in the DSEIR. This is an error of law. The "rough proportionality" requirement requires a comparison of the cost of the mitigation to the degree of severity of the impact. The fees charged in other areas of the state are irrelevant to "rough proportionality."

4. CEQA Findings: General

The Commission cannot make any CEQA findings required by CEQA section 21081 or CEQA Guidelines 15091, 15093, 15096(f), because the Project SEIR does not comply with CEQA and is not certifiable, for the reasons described in the Alliance's comments on the SEIR.

5. CEQA Findings: BAAQMD.

The Commission cannot find that "Impact AQ-4: Potential conflicts with BAAQMD's 2010 Clean Air Plan" is less than significant with mitigation because the City and Project Sponsor refuse to agree to BAAQMD's offset fees per Mitigation Measure M-AQ-2b. (See Exhibits 4 and 5.) There is also no evidence that the "Option 2" offset idea within Mitigation Measure M-AQ-2b is feasible. There are too many unanswered questions regarding Option 2, including lack of assured verification of offsets to ensure their effectiveness, and lack of assurance that offset sources are available in the quantity required. BAAQMD's offset program at least answers some, if not all, of these questions.

The Commission cannot find that all feasible mitigation measures that would substantially reduce "Impact AQ-1: Impacts of Criteria Air Pollutants from Construction" have been adopted as required by CEQA section 21081, because there is no evidence that paying the offset fees demanded by BAAQMD is infeasible. Also, as discussed above, there is no evidence that the "Option 2" offset idea within Mitigation Measure M-AQ-2b is feasible; therefore, it is not an adequate substitute for BAAQMD's offset program. This also applies to

- Impact AQ-2: Impacts of Criteria Air Pollutants from Project Operations"; Impact C-AQ-1: Project Contribution to Regional Air Quality Impacts;

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- Impact C-AQ-1: Project Contribution to Regional Air Quality Impacts.

6. CEQA Findings: Pier 80 Alternate Site.

The Commission cannot find that feasible alternatives that would substantially reduce the Project's significant impacts have been adopted. The SEIR does not analyze the alternate site proposed by the Alliance near Pier 80, and did not circulate that analysis for public comment. Neither OCII nor this Commission has the basis to make conclusory findings rejecting the alternative. Among the relevant facts not considered in the findings is that the site is three times as large as would be required for the Event Center project and need not utilize any of the City-owned property nor any particular configuration of the privately-owned lots should there be an unwilling seller. There is no evidence provided that the site could not be acquired within a reasonable time period.

Case law confirms that assuring a site's consistency with city plans and zoning is within the City's power. Similarly, the scheduling of transportation services to the site can be increased, and the findings provide no studies to back up conclusory statements regarding traffic, air quality, hydrology, or water quality impacts. Since only a third of the site is needed to accommodate the event center, all of the impacts (if shown to have concern after sufficient technical review) can be avoided or mitigated. As stated in the Alliance letter to OCII that proposes this site for consideration as an alternative, here incorporated by reference, the SEIR failed to consider a potentially-feasible off-site alternative and must be revised and recirculated to do so before findings of infeasibility may be considered or adopted. The site suggested by the Alliance is potentially feasible and deserving of study.

Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

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November 2, 2015

Tiffany Bohee, OCII Executive Director
c/o Brett Bollinger, San Francisco Planning Department
via email warriors@sfgov.org

Subject: Warriors Event Center & Mixed Use Development
Inconsistency with Mission Bay South Redevelopment Plan
'Secondary Use' Classification

Dear Director Bohee and Mr. Bollinger:

The Mission Bay Alliance (the Alliance) contends that the Warriors' Event Center is unlawfully inconsistent with every use allowed by the Mission Bay South Redevelopment Plan (the Plan). Although the Alliance raised this issue in comments on the Draft Subsequent EIR (DSEIR), both the Responses to Comments in the Final SEIR and OCII's findings of project consistency remain materially inadequate.

The Plan designates uses allowed at a 'Commercial Industrial/Retail' site. The Alliance notes that while OCII now concedes that a sports arena is not within the scope of allowed 'principal uses' in that zoning, OCII contends that an arena is consistent with 'secondary uses.' As this letter will explain, all such secondary uses are similarly and demonstrably insufficient to permit the Warriors' sports arena.

Nighttime Entertainment. The Initial Study concluded, in error, that the DSEIR did not need to address land use issues — at all. It asserted that the entire Event Center, including the sports arena use, somehow met the secondary 'Nighttime Entertainment' use analyzed in the 1998 Plan EIR. Secondary uses were then generally referenced in the DSEIR (*e.g.*, pp. 3-8, 3-51, 4-5, 5.2-115), but there was no discussion of which category of secondary use would be allocated to the Event Center, inferring acceptance of the Nighttime Entertainment category.

The Plan describes Nighttime Entertainment in terms of small-scale local uses like dance halls, bars, nightclubs, discotheques, nightclubs, private clubs, and

EXHIBIT 1

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restaurants. (Plan, p. 50.) At the time of the 1998 EIR, several small neighborhood bars occasionally offered nighttime entertainment, consistent with the secondary use category. Such minor uses were compatible with the 3rd Street Corridor and the waterfront. Clearly, no mammoth regional entertainment venue was anticipated in Mission Bay South and no such use was considered in the 1998 Plan EIR.

And while professional basketball games are held at night, the Event Center also projects 31 annual events "related to conventions, conferences, civic events, corporate events and other gatherings," with an estimated attendance of between 9,000 and 18,500 patrons. "[T]he majority of events are expected to occur during day time hours." Such events are not 'Nighttime Entertainment.'

The Director's currently-proposed findings that the sports arena is 'Nighttime Entertainment' contemplated as a secondary use in the Plan are unsupported. The findings fail to match the scope and impacts of a professional sports venue with the analysis or description of uses in the Plan or in the 1998 EIR. The findings are fatally conclusory; that somehow a professional sports venue would be "similar" to a nightclub or bar use in the 'Nighttime Entertainment' category "because" it will serve alcohol, provide amplified live entertainment, and provide a venue for evening gatherings. The findings fail to address the core inconsistency of a regional sports arena with the intent of the adopted Plan and the Design for Development, which focus on commercial entertainment uses in Mission Bay North to complement the Giants' ballpark.

OCII's reliance on the negative; to wit, that the 'Nighttime Entertainment' secondary use has no specific size limitations, is not enough. The Plan provides for the continued development of Mission Bay South as a walkable urban community intended to facilitate world-class medical and biotechnology development. The Event Center project violates the Plan Area Map carefully designed in classic, walkable Vara Blocks. (Plan, Attachment 2, p. 40.) Neither the Plan nor the Design for Development contemplate any uses comparable in scope or impact to the Event Center as 'Nighttime Entertainment.'

That being said, in fact in the Final SEIR and as reflected in the proposed Plan consistency findings, OCII now implicitly agrees with the Alliance that the 'Nighttime Entertainment' secondary use standing alone does not encompass a sports arena. Now, OCII additionally relies on the Plan's alternate 'secondary uses.' No such uses are consistent with the Plan, as explained below.

Recreation Building. One of the Plan's secondary use categories is for an undefined 'Recreation building.' (Plan, p. 15.) The Plan describes 'Outdoor Recreation' as "an area, not within a building, which is provided *for the recreational uses of patrons* of a commercial establishment." (Plan, p. 50, italics added.)

OCII's proposed findings as to the 'Recreation building' category stretch the regional sports arena use not only beyond what was contemplated by the Plan or studied in the 1998 EIR, but beyond logic. To state the obvious: there is a difference between 'recreation' and 'entertainment.' Both involve enjoyment and leisure, and may involve ancillary eating and drinking, and the Alliance has no quarrel with the Director's reference to recreation as "something people do to relax or have fun; activities done for enjoyment." (OCII Proposed Secondary Use Determination, p. 6.) But myriad dictionary definitions confirm and it cannot readily be denied that 'recreation' is commonly understood to involve one's personal physical activities while 'entertainment' refers to events or performances designed to entertain others.

None of the Plan's various references to 'entertainment' include athletic activities normally considered 'recreation:' Adult Entertainment [bookstore or theater], Amusement Enterprise [video games], Bar [drinking and theater], Theater [movies and performance]. (Plan, Attachment 5, pp. 44-51.) Consistently, the 1998 EIR's discussion of 'recreational' land uses focused in turn on open space, bicycles, parks, and water-based activities. (Mission Bay EIR, Volume IIB, pp. V.M. 15-28.).

In context, the Plan's reference to 'Recreation building' as a secondary use contemplates participatory recreational uses like the 'recreation facilities' referenced in the 1998 Plan EIR for the existing golf driving range and in-line hockey rink, with the expressed expectation that the size of recreational 'facilities' would decrease as redevelopment of the Plan area progressed. (OCII Proposed Secondary Use Determination, p. 6.)

Reliance on the secondary use of 'Recreation building' is unsupported.

Public Structure or Use of a Nonindustrial Character. As presented in the Plan, the category of "other secondary uses" labeled 'Public structure or use of a nonindustrial character' references *one* secondary use, not *two*. (Plan, p. 13.) The use is required to be public, and either a structure *or* a use.

The interpretation urged by the Director is, again, strained beyond the plain words of the Plan. 'Public' is not defined in the Plan and so its common meaning is assumed. But as proposed in the consistency findings, OCII interprets a 'public' use as simply requiring that the public be somehow 'served.' That would encompass every kind of principal and secondary use listed in the Plan, from child care to animal care to hotel, *etc.*, and renders the category meaningless: *i.e.*, "Any use is ok."

Instead, a public structure or use is commonly understood to be under the control and management of a public agency for the benefit of its constituency — such as the University of California[1] or the City of San Francisco. The Plan provides a description of a range of anticipated public improvements in Attachment 4. This list includes both public buildings and public uses. None of the public improvements listed in Attachment 4 include anything like a private professional sports arena.

The Event Center is a private project and is not within the scope of the secondary use category for a public structure or use of a nonindustrial character.

Director's Findings. As explained, the sports arena uses that are the impetus for the Event Center project are not allowed by the Plan's allowed principal or secondary uses. An allowed use is prerequisite for a finding of Plan consistency. The Alliance will not belabor the myriad other inconsistencies with the Plan's objectives, design, incompatibility with UCSF, and creation of significant environmental impacts, as those have been described in the DSEIR comments and throughout the administrative record, but hereby objects to their insufficiencies and lack of supporting substantial evidence for the Plan consistency finding.

Consideration of the Event Center project must be preceded by amendment of the Plan to be consistent with the delineated principal and secondary uses and the adopted Plan Area Map of the Mission Bay South Redevelopment Plan.

Thank you.

Sincerely yours,

Susan Brandt-Hawley
Attorney for Mission Bay Alliance

[1] See attached 2005 Resolution and Secondary Use finding regarding the "UCSF hospital" as a "public structure or use of a non-industrial character" for "a public body specifically created by the California Constitution."

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RESOLUTION NO. 176-2005

Adopted November 1, 2005

APPROVING A MEMORANDUM OF UNDERSTANDING WITH THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, A CALIFORNIA PUBLIC CORPORATION, AND ACKNOWLEDGING THE EXECUTIVE DIRECTOR'S FINDINGS OF CONSISTENCY WITH THE MISSION BAY SOUTH REDEVELOPMENT PLAN, FOR THE EXPANSION OF UCSF FACILITIES IN THE MISSION BAY SOUTH REDEVELOPMENT PROJECT AREA; MISSION BAY SOUTH REDEVELOPMENT PROJECT AREA

BASIS FOR RESOLUTION

1. On September 17, 1998, by Resolution No. 193-98, the Redevelopment Agency of the City and County of San Francisco's (the "Agency") Commission (the "Agency Commission") conditionally approved the Mission Bay South Owner Participation Agreement (the "South OPA") and related documents between Catellus Development Corporation (the "Owner") and the Agency for development in the Mission Bay South Redevelopment Project Area (the "Project Area").

2. On November 2, 1998, the Board of Supervisors of the City and County of San Francisco (the "Board") by Ordinance No. 335-98 approved and adopted the Redevelopment Plan for the Mission Bay South Redevelopment Project Area (the "Plan"). The Board's adoption of the Plan satisfied the conditions to the effectiveness of Agency Resolution No. 193-98.

3. On November 16, 1998, the Agency entered into the South OPA with the Owner. The South OPA sets forth phasing principles that govern the development of property in the Project Area. Those principles include the Owner's obligations to deliver to the Agency affordable housing sites as market rate housing is built in the Project Area. They also include the Owner's commitments to construct public open space and other public infrastructure adjacent to – or otherwise triggered by – development on any of the private parcels governed by the South OPA.

4. Under the South OPA and the related Mission Bay South Tax Increment Allocation Pledge Agreement (the "Pledge Agreement"), dated as of November 16, 1998, between the Agency and the City and County of San Francisco (the "City"), approximately 20% of the total property tax increment (plus certain excess tax increment) generated by development in the Project Area is contractually dedicated to develop affordable housing units on parcels that the Owner will contribute to the Agency, to achieve the affordable housing program contemplated by the Plan.

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5. The South OPA requires the Owner to construct the public infrastructure directly related to each of the major phases in accordance with the incremental build-out of each project. Under the South OPA and the Pledge Agreement, the Agency is obligated to fund, repay or reimburse the Owner, subject to certain conditions, for the direct and indirect costs of constructing the infrastructure. The Agency has established a Community Facilities District ("CFD") for infrastructure in the Project Area. The Agency has also established a separate CFD to pay the costs of maintaining the public open space in the Project Area.

6. The South OPA provides that as a condition to any transfer of property in the Project Area, the Owner must obtain the agreement of the transferee to assume all of Owner's obligations under the South OPA with respect to the transferred parcels.

7. The Project Area includes an approximately 43-acre biomedical research and educational campus site (the "Campus Site") for the University of California, San Francisco ("UCSF"). UCSF has already invested about $675 million on projects completed or underway on the Campus Site within the Plan Area and has plans to invest another $225 million on projects in design.

8. The Regents of the University of California, a California public corporation ("The Regents") wishes to lease or acquire, and the Owner wishes to transfer Parcels 36, 37, 38 and 39 in the Project Area, comprising approximately 9.65 acres of land for the possible expansion of UCSF in Mission Bay (the "Expansion Parcels"). These parcels are not part of the 43 acres that the Plan originally designated as the Campus Site.

9. On November 30, 2004, The Regents released proposed amendments in draft form to its long range development plan, as LRDP Amendment #2. Those amendments contemplate an expansion of UCSF facilities onto the Expansion Parcels, including the possibility of developing by 2012 new integrated specialty Children's, Women's and Cancer hospitals containing about 210 beds, together with ambulatory and research facilities. In March 2005, The Regents approved LRDP Amendment #2 (the "Project") and certified a related final environmental impact report (the "LRDP #2 FEIR") which analyzed the environmental effects of the proposed UCSF development on the Expansion Parcels. Copies of the LRDP #2 FEIR are on file with the Agency Secretary.

10. The Owner and The Regents have entered into an Option Agreement and Grant of Option to Lease, dated as of January 1, 2005 (the "Option to Lease"), which provides that upon the satisfaction of certain conditions and the exercise by The Regents of its option (i) Catellus, as landlord, and The Regents, as tenant, will enter into a long-term ground lease of the Expansion Parcels (the "Lease") and (ii) the Owner and The Regents will at the same time enter into an Option Agreement and Grant of Option to Purchase (the

"Option to Purchase") under which The Regents will have an option to purchase the Expansion Parcels.

11. If The Regents exercises the Option to Lease within the option term, the Lease would allow for The Regents to develop up to 1,020,000 leasable square feet on the Expansion Parcels, provided that (a) any development of those parcels is the subject of further environmental review under the California Environmental Quality Act ("CEQA"), and (b) the Owner does not lose any of its entitled development potential for the balance of its land nor lose any of its other rights and privileges under the South OPA.

12. Pursuant to Section 302 of the Plan, the development of the contemplated UCSF facilities on the Expansion Parcels is permitted as a subset of "Other Uses" as a secondary use. Such secondary uses are permitted provided that such use generally conforms with redevelopment objectives and planning and design controls established pursuant to the Plan and based on certain findings of consistency by the Agency's Executive Director (the "Consistency Findings"). The Executive Director has made the Consistency Findings, and such findings are hereby incorporated herein by this reference as if fully set forth.

13. The City must make substantial improvements to San Francisco General Hospital ("SFGH") by 2013 and is evaluating a number of alternatives, including rebuilding on site and co-locating a new SFGH with new UCSF medical facilities in Mission Bay.

14. As a State agency, The Regents is exempt under the State Constitution from local land use regulation and property taxes to the extent it uses property exclusively in furtherance of its educational mission.

15. The Agency, City and The Regents negotiated a non-binding term sheet to guide the preparation of final transactional and related documents, such as a Disposition and Development Agreement ("DDA") for The Regents to acquire property for, and to construct and subsidize, affordable housing for low-income workers of UCSF, which DDA is being considered by the Agency Commission concurrently with this Resolution, pursuant to Resolution No. 160-2005, and provided terms for a Memorandum of Understanding regarding design standards and cooperation on the development of the Expansion Parcels (the "MOU"). The Agency Commission approved the non-binding term sheet on May 17, 2005 by Resolution No. 81-2005.

16. The proposed MOU addresses, among other things: the potential loss of tax increment from the transfer of the Expansion Parcels to a tax-exempt entity; the obligations to build infrastructure associated with development on the Expansion Parcels; the potential assistance of UCSF in the planning of the co-location, if any, of SFGH with the new UCSF facilities; the standards for design review for construction on the Expansion Parcels; local hiring and

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equal opportunity for jobs associated with the development on the Expansion Parcels; and other matters designed to provide the Agency and City with significant public benefits.

17. Agency staff is recommending that the Agency Commission approve the MOU, and the associated Consistency Findings.

18. The Agency Commission has reviewed and considered the information contained in the LRDP #2 FEIR.

19. The Agency Commission hereby finds that the MOU is an action in furtherance of the implementation of the Project for purposes of compliance with CEQA.

20. By Resolution 175-2005, the Agency Commission adopted environmental findings related to the LRDP #2 FEIR, pursuant to CEQA and the CEQA Guidelines (the "Findings"). Such Findings are made pursuant to the Agency's role as the responsible agency under CEQA for the Project. The Findings are hereby incorporated herein by this reference as if fully set forth.

RESOLUTION

ACCORDINGLY, IT IS RESOLVED by the Redevelopment Agency of the City and County of San Francisco that the findings of consistency with the Mission Bay South Redevelopment Plan are approved and the Executive Director is authorized to execute the "Expansion of UCSF Facilities in Mission Bay South Redevelopment Project Area (Blocks 36-39) Memorandum of Understanding", substantially in the form lodged with the Agency General Counsel; Mission Bay South Redevelopment Project Area.

APPROVED AS TO FORM:

James B. Morales
Agency General Counsel

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MEMORANDUM

126-03405-001
October 12, 2005

To: Marcia Rosen
Executive Director

From: Amy Neches
Senior Project Manager

Re: Secondary Use Finding Recommendation for UCSF Hospital in Mission Bay South Redevelopment Area

Pursuant to a Term Sheet dated as of August 1, 2005 between the City, the Agency and The Regents of the University of California, which was endorsed by the Commission on May 17, 2005 (Resolution No. 81-2005), the Agency is considering agreements, including a Memorandum of Understanding ("MOU"), under which the University of California at San Francisco ("UCSF") may develop a hospital in the Mission Bay South Redevelopment Area ("Redevelopment Area").

The UCSF hospital would be located on Blocks 36-39 within the Commercial Industrial land use district of the Redevelopment Area, as described in the Mission Bay South Redevelopment Plan (the "Plan"). The UCSF hospital development may also include all or portions of Block X3 within the Commercial Industrial/Retail land use district. In both of these land use districts "public structure or use of a non-industrial character" is permitted as a subset of "Other Uses" as a secondary use.

The University of California, of which UCSF is a component, is a public body specifically created by the California Constitution. A hospital or medical center is described in §790.44 of the San Francisco Planning Code as a "public or private institutional use which provides medical facilities for inpatient care, medical offices, clinics, and laboratories." The proposed UCSF hospital development will include these components. The hospital will not including manufacturing, warehousing, or distribution of goods, and can reasonably be considered a "non-industrial use." This interpretation is supported by the San Francisco Planning Code, under which hospitals are permitted as a conditional use in all C districts and NC-3 districts.

Section 302 of the Plan provides as follows:

> "Secondary uses shall be permitted in a particular land use district…provided that such use generally conforms with redevelopment objectives and planning and design controls established pursuant to this Plan and is determined by the Executive Director to make a positive contribution to the character of the Plan Area, based on

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> a finding of consistency with the following criteria: the secondary use, at the size and intensity contemplated and at the proposed location, will provide a development that is necessary or desirable for, and compatible with, the neighborhood or the community."

Staff believes that the UCSF hospital is appropriate as a secondary use, based on the following:

1) The proposed hospital will be located on approximately 10 to 14 acres of land adjacent to the Mission Bay UCSF research campus that have been determined to be blighted and are affected by environmental contamination. UCSF plans close integration of its basic academic research activities with the teaching, research and patient care activities within the planned hospital. The plan for development of the UCSF hospital generally conforms to the Redevelopment Project Objectives as described in §103 of the Plan, particularly with objective A of eliminating blight and correcting environmental deficiencies, and objective B of retaining and promoting UCSF's research and academic activities within the City and County of San Francisco.

2) Under the MOU, the UCSF hospital development will generally conform to the planning and design controls established pursuant to the Plan, including the street layout, setbacks, and streetscape plan. To accommodate the needs of the hospital, the MOU will include specific adjustments to the existing height and bulk standards of the Commercial Industrial and Commercial Industrial/Retail land use zones of the Mission Bay South Design for Development. These changes will lower the maximum height of a hospital to 105 feet, compared to the existing 160 foot limit, but would allow for somewhat greater bulk in the mid-rise area. These changes have been studied and presented to the public at two well-noticed public meetings. In staff's opinion, the proposed adjustments represent reasonable variation from the existing standards, which will have little if any negative effect on the surrounding community in the context of overall Mission Bay development.

3) The hospital will contain no more development, as calculated under the Plan in leasable square feet, than would have been permitted under the principal uses permitted in these land use districts, and there will be no net increase in the overall size of development within the Redevelopment Area. The hospital will be developed on parcels that would otherwise likely have been developed with commercial office or life science/biotechnology uses. These uses would have been constructed in buildings of reasonably similar size and appearance as the proposed hospital use.

4) The proposed hospital will allow UCSF to continue to provide needed tertiary health care to the residents of San Francisco in a modern seismically safe hospital, and will assist UCSF in furthering its research and academic mission.

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Based on these factors, staff believes that it is appropriate to make the finding of consistency cited above, and recommends that the Executive Director permit the development of the UCSF hospital as a secondary use in Mission Bay, subject to the approval of the MOU by the Commission.

Approved on October 12, 2005:

Marcia Rosen

Marcia Rosen
Executive Director

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THOMAS N. LIPPE, APC

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November 2, 2015 [2 of 2]

By personal delivery at Nov. 3, 2015, hearing to: Commission on Community Investment and Infrastructure Attn: Claudia Guerra, Commission Secretary Office of Community Investment and Infrastructure 1 South Van Ness Avenue, 5th Floor San Francisco, CA 94103 and email to: claudia.guerra@sfgov.org	By email to: *warriors@sfgov.org*: Ms Tiffany Bohee OCII Executive Director c/o Mr. Brett Bollinger San Francisco Planning Department 1650 Mission Street, Suite 400 San Francisco, CA 94103

Re: Warriors Arena Project: Violation of Variance Requirement.

Dear Ms Bohee and Mr. Bollinger:

This office represents the Mission Bay Alliance ("Alliance"), an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project"). The Mission Bay Alliance objects to approval of this Project and certification of the Project SEIR.

I write today regarding the OCII's failure to require a variance or "variation" for this Project under section 305 of the Mission Bay South Redevelopment Plan ("Plan"). The November 2, 2015, letter from Susan Brandt-Hawley, my co-counsel for the Alliance, demonstrates this Project is not an allowable secondary use under the Plan. Thus, a variance is not available because, as shown by Brandt-Hawley, the Project "will change the land uses on this Plan." (Plan, § 305.) However, in the alternative, if the Project is an allowable secondary use under the Plan, then the OCII must process this Project application as a variance and make the findings required by Plan section 305 before Project approval.

Both California and San Francisco planning law provide a process for landowners to obtain a "variance" from the "uniformity" of zoning limits that, while appropriate for the zone district in general, would impose undue hardship due to unique characteristics of a specific parcel. Government Code section 65906 governs the grant of zoning variances by municipalities and prohibits local agencies from granting "special privileges" to individual landowners. Similarly, San

EXHIBIT 2

Francisco Planning Code, section 305, subdivision (a), provides that a variance permit must be approved for any exception to the requirements of the Planning Code. Subdivision (c) thereof mirrors the requirements of state law, and requires a finding that "owing to such exceptional or extraordinary circumstances the literal enforcement of specified provisions of this Code would result in practical difficulty or unnecessary hardship ...."

Similarly, the Plan includes a variance provision that reflects the same substantive requirements as Government Code section 65906 and Planning Code section 305:

> The Agency may modify the land use controls in this Plan where, owing to unusual and special conditions, enforcement would result in undue hardships or would constitute an unreasonable limitation beyond the intent and purposes of these provisions. Upon written request for variation from the Plan's land use provisions from the owner of the property, which states fully the grounds of the application and the facts pertaining thereto, and upon its own further investigation, the Agency may, in its sole discretion, grant such variation from the requirements and limitations of this Plan. The Agency shall find and determine that the variation results in substantial compliance with the intent and purpose of this Plan, provided that in no instance will any variation be granted that will change the land uses on this Plan.

(Plan, § 305.)

Because the Plan's variance provision imposes virtually identical requirements as Planning Code section 305, both apply. (Plan, §'s 101 ["Regardless of any future action by the City or the Agency, whether by ordinance, resolution, initiative or otherwise, the rules, regulations, and official policies applicable to and governing the overall design, construction, fees, use or other aspect of development of the Plan Area shall be (i) this Plan and the other applicable Plan Documents, (ii) to the extent not inconsistent therewith or not superseded by this Plan, the Existing City Regulations and (iii) any new or changed City Regulations permitted under this Plan"]; 304.9.C.(iv)).

Here, the Project creates at least sixteen inconsistencies with the Design for Development (D4D). The OCII now proposes to amend the D4D, the Owner's Participation Agreement (OPA), and other Plan documents to resolve these inconsistencies by, including but not limited to, raising maximum height limits from 90 to 135 feet, allowing a second 160+ foot tower, increasing bulk limits to accomodate the arena, and changing arena setbacks, street wall heights, view corridors, public rights of way, and parking standards. (See e.g., Draft SEIR, pp. 4-7 - 4-9, § 4.2.4; Proposed Resolution 2015, exhibit A; Memorandum to the OCII from Executive Director Tiffany Bohee for Items 5(a), 5(b), 5(c), 5(d) & 5(e) the November 3, 2015, CCII meeting agenda, pp. 4, 22.)

Even if the Project's land uses are allowable secondary uses, these amendments "modify the land use controls in this Plan" as provided in Plan section 305. But the Project Sponsor has made

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no showing that due to "unusual and special conditions, enforcement would result in undue hardships or would constitute an unreasonable limitation beyond the intent and purposes of these provisions." (Plan, § 305.)

"Variances are, in effect, constitutional safety valves to permit administrative adjustments when application of a general regulation would be confiscatory or produce unique injury." (Curtin's California Land Use and Planning Law, p. 55.) Variance requirements also implement the State Planning and Zoning Law's requirement of "uniformity" of zoning rules within zoning districts. (See Gov. Code, § 65852 ["All such [zoning] regulations shall be uniform for each class or kind of building or use of land throughout each zone, but the regulation in one type of zone may differ from those in other types of zones;" *Neighbors in Support of Appropriate Land Use v. Cnty. of Tuolumne* (2007) 157 Cal.App.4th 997, 1008 (*Neighbors*).) The State Planning and Zoning Law also requires vertical consistency between local agencies general plans, zoning ordinances, and land use permits. (Gov. Code, § 65860, subd. (c) ["County or city zoning ordinances shall be consistent with the general plan of the county or city... ."]; see *DeVita v. Cnty. of Napa* (1995) 9 Cal.4th 763, 772 ["A general plan is a 'constitution' for future development [citation omitted] located at the top of 'the hierarchy of local government law regulating land use'"].)

California courts have vigorously enforced the requirements for granting a variance, and have developed extensive jurisprudence to corral the many stratagems local agencies have used to avoid its requirements. (See e.g., *Topanga Association v. County of Los Angeles* (1974) 11 Cal.3d 506, 511-12 (*Topanga*); *Orinda Assn. v. Board of Supervisors* (1986) 182 Cal.App.3d 1145, 1166 (*Orinda Assn*) ["A zoning scheme, after all, is similar in some respects to a contract ... If the interest of these parties in preventing unjustified variance awards for neighboring land is not sufficiently protected, the consequence will be subversion of the critical reciprocity upon which zoning regulation rests..."].)

Variance findings must focus on a comparison of the subject property to other properties in the zone district with which the variance is intended to bring it into parity, and the benefits to the community or "public interest" associated with a zoning exception are irrelevant. (*Orinda Assn, supra*, at p. 1166.) By amending the Plan documents to accommodate this Project, the OCII would cast these requirements aside and grant a "special privilege" to this Project Sponsor.

In *Neighbors*, rather than adopt a rezone or grant a variance, the County created a special exception to the zoning ordinance for one landowner by including it in a development agreement adopted under the development agreement law. (*Neighbors, supra*, 157 Cal.App.4th at p. 1003.) In rejecting this stratagem, the Court in *Neighbors* noted that there are limits on the power to rezone: "'The foundations of zoning would be undermined, however, if local governments could grant favored treatment to some owners on a purely ad hoc basis ... [R]ezoning, even of the smallest parcels, still necessarily respects the principle of uniformity." (*Id*. at pp. 1009-10.)

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Commission on Community Investment and Infrastructure
Ms Tiffany Bohee
Mr. Brett Bollinger
Re: Warriors Arena Project DSEIR: Violation of Variance Requirement
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A similar result occurred in *Trancas Prop. Owners Assn. v. City of Malibu* (2006) 138 Cal.App.4th 172 (*Trancas*). In *Trancas*, the court held an exemption from a city's zoning requirements accomplished by contract functionally resembled a variance, and held that "such departures from standard zoning by law require administrative proceedings, including public hearings ... followed by findings for which the instant [density] exemption might not qualify... Both the substantive qualifications and the procedural means for a variance discharge public interests. Circumvention of them by contract is impermissible." (Id. at p. 182.)

In sum, the OCII's proposed grant of zoning exceptions to this Project by way of amending the Plan documents rather than by variance violates the Plan, the variance requirements of the San Francisco Planning Code and state law, and the uniformity requirement of state law.

Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

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O-MBA25L10

Office Development Annual Limitation ("Annual Limit") Program

The Office Development Annual Limit (Annual Limit) Program became effective in 1985 with the adoption of the Downtown Plan Amendments to the Planning Code (Sections 320–325) and was subsequently amended by Propositions M (1986) and C (1987). The Program defines and regulates the allocation of any office development project that exceeds 25,000 gross square feet (gsf) in area.

A total of 950,000 gsf of office development potential becomes available for allocation in each approval period, which begins on October 17th every year. Of the total new available space, 75,000 gsf is reserved for Small Allocation projects (projects with between 25,000 and 49,999 gsf of office space), and the remaining 875,000 gsf is available for Large Allocation projects (projects with at least 50,000 gsf of office space). Any available office space not allocated in a given year is carried over to subsequent years.

This document reflects the status of the Annual Limit Program, including current availability and summaries of previously approved and pending projects.

Information in this document was last updated on **September 1, 2015.** Inquiries should be directed to Corey Teague at (415) 575-9081 or corey.teague@sfgov.org.

Summary of Key Figures

Small Allocation Projects (<50,000 gsf of office space)	**Current Availability 1,188,805 gsf** *Current total square footage available for allocation.*	**Pending Availability 903,255 gsf** *Currently available square footage less 285,550 gsf of pending* projects.*	**Pipeline Availability 776,280 gsf** *Currently available square footage less 285,550 gsf of pending* projects and 126,975 gsf of pre-application** projects.*
Large Allocation Projects (>50,000 gsf of office space)	**Current Availability 1,429,763 gsf** *Current total square footage available for allocation.*	**Pending Availability -1,678,791 gsf** *Currently available square footage less 3,108,554 gsf of pending* projects.*	**Pipeline Availability -8,529,408 gsf** *Currently available square footage less 3,108,554 gsf of pending* projects and 6,850,617 gsf of pre-application** projects.*

* A 'pending project' is one for which an office allocation application has been submitted but not yet acted upon.
** A 'pre-application' project is one for which an environmental review application, preliminary project assessment application, or other similar application has been submitted but for which no office allocation application has yet been submitted.

EXHIBIT 3

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PENDING OFFICE PROJECTS*

*Projects that have submitted an application (B or OFA) pursuant to Planning Code Section 321 (Office Development Annual Limit) but on which no Commission action has yet ocurred.

Small Office Cap					
Case No.	**Address**	**Sq. Ft.**	**Status**	**Staff**	**Comments**
2009.0065	3433 Third Street	49,229	B filed 1/27/09	Julian Banales	New 5-story office building for Carpenter's Union on vacant lot. May be cancelled due to inactivity (2/18/14).
2014.0567	2101 Mission Street	48,660	B filed on 4/17/14	Brittany Bendix	Legalize change of use from retail and warehouse to office. Planning Commission hearing scheduled for 9/3/15.
2012.1410	77-85 Federal Street	49,730	B filed on 6/5/14	Scott MacPherson	Demo two existing office buildings and construct a 5-story building with ground floor retail and office above.
2015-000509	1125 Mission Street	37,944	B filed on 1/15/15	Julian Banales	Change of use from auto repair.
2014.1315	135 Townsend Street	49,995	B filed on 3/11/15	Rich Sucre	Conversion of existing self storage building.
2013.1511	360 Spear Street (aka 100 Harrison St)	49,992	B filed on 4/3/15	Rich Sucre	Partial conversion of existing ISE.
Subtotal		***285,550***			

Large Office					
Case No.	**Address**	**Sq. Ft.**	**Status**	**Staff**	**Comments**
2012.0640	598 Brannan Street	700,456	B filed on 10/24/12	Elizabeth Purl	Demo of 2 industrial buildings; 2 new office buildings (Central SoMa Project).
2013.1545	645 Harrison Street	99,698	B filed on 7/18/13	Kimberly Durandet	LoD confirmed 14,520gsf as existing legal office space. Revised proposal to convert additional 99,698gsf, plus retain 33,758gsf of PDR on first and second floors.
2013.1593	2 Henry Adams	245,697	B filed on 2/6/14	Rich Sucre	Owner-initiated Article 10 Landmark designation and an Office Allocation. Eligible area limited by recent legislation.
2011.0409	925 Mission Street	803,300	B filed on 8/19/14	Kevin Guy	"5M" Project. Planning Commission informational hearing scheduled for 9/3/15.
2006.1523	50 First Street	1,050,000	B filed on 6/4/14	Kevin Guy	Demo and construction of a mixed-use building with two towers.
2014-002701	GSW Development	0	B filed on 12/12/14	David Winslow	Design approval only. Allocation already approved in Alexandria District.
2014.1063	633 Folsom Street	89,804	B filed on 12/23/14	Mark Luellen	Four story office addition to existing seven story building.
2014.0154	1800 Mission Street	119,599	OFA filed on 1/27/15	Rich Sucre	Conversion in the Armory.
Subtotal		***3,108,554***			

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PRE-APPLICATION OFFICE PROJECTS*

*Projects that have submitted for initial Department review (e.g. environmental review (EE) or Preliminary Project Assessment [PPA]), but have not submitted an application pursuant to Planning Code Section 321 (Office Development Annual Limit).

Small Office Cap					
Case No.	**Address**	**Sq. Ft.**	**Status**	**Staff**	**Comments**
2014.1616	1200 Van Ness Ave	27,000	PPA issued 1/14/15.	Mary Woods	Exact office square footage TBD.
2015-010219	462 Bryant Street	49,995	PPA filed on 8/12/15.		An existing single story office building and basement will remain, and five stories of new office space will be added (approximately 49,995 gsf of new office space).
2015-010374	598 Bryant Street	49,980	PPA filed on 8/12/15.	Kansai Uchida	Demo existing gas station and construct a 9-story mixed-use office building with underground parking.
Subtotal		***126,975***			

Large Office Cap					
Case No.	**Address**	**Sq. Ft.**	**Status**	**Staff**	**Comments**
2005.0759	725-735 Harrison	730,940	PPA letter issued 5/16/2013. Revised EE pending.	Debra Dwyer	"Harrison Gardens" (Central SoMa Project). Original proposal changed to office per 2/21/13 application amendment.
2014.0416	610-620 Brannan Street	561,065	EE filed 6/19/14	Elizabeth Purl	Demo and new 11-story mixed use bldg (Central SoMa Project).
2013.0478	559 6th Street	123,972	PPA issued on 6/17/13. PPA expired on 12/17/14.	Kimia Haddadan	Demolish 3 bldgs and construct a mixed-use project (Central SoMa Project)
2013.0970	Pier 70 (Forest City Only)	1,810,000	EE filed on 11/10/14	Andrea Contreras	SF Port project
n/a	2525 16th Street	60,980	Legitimization request filed 11/30/12	Corey Teague	EN Legitimization
2014.0858	565-585 Bryant Street	188,280	PPA issued on 7/25/14	Jeremy Shaw	Demo four existing bldgs and construct an 11-story mixed-use bldg. 2nd PPA proposes only 46,990sf of office (Central SoMa Project).
2014.0405	330 Townsend Street	394,300	PPA issued on 5/15/14	Steve Wertheim	Demo existing bldg and construct a 21-story office bldg. 2nd PPA proposes only 212,300sf of office (Central SoMa Project).
2013.0208	SWL 337 ("Mission Rock")	1,300,000	EE filed on 6/4/13	Josh Switzky	Large mixed-use project on Port property.
2015-004256	630-698 Brannan St	1,512,260	PPA issued on 7/24/15. EE filed 7/24/15.	Lisa Chen	Flower Mart replacement project (Central SoMa Project). Two Previous PPAs. 2015-001903 analysed proposed 1,492,450gsf. 2013.0370 was under different ownership, only included Lot 5, and analysed 655,150gsf.

2014.1208	1500 Mission Street	0	EE filed on 10/23/14	Chelsea Fordham	Demo and new construction of 64' bldg with 462,800gsf of **City** office space.
2015-009704	505 Brannan Street	168,820	PPA filed on 7/27/15	Steve Wertheim	"Phase II" addition (165', 11 stories) of office space onto an approved 85' "Phase I" office building approved by the Planning Commission on 12/11/14. With this newly planned addition, total building height would now be 250' and contain a total of 306,266 sf.
Subtotal		***6,850,617***			

O-MBA25L10

ANNUAL LIMIT FOR "SMALL" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	**1,188,805**

Approval Period[1]	Unallocated Sq. Ft.[2]	"Small" Office Annual Limit	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
1985-1986	0	75,000	**75,000**	No Projects	N/A	0	**0**	
1986-1987	75,000	75,000	**150,000**	1199 Bush	1985.244	46,645	**46,645**	
1987-1988	103,355	75,000	**178,355**	3235-18th Street	1988.349	45,350	**45,350**	**aka 2180 Harrison Street**
1988-1989	133,005	75,000	**208,005**	2601 Mariposa	1988.568	49,850	**49,850**	
1989-1990	158,155	75,000	**233,155**	No Projects	N/A	0	**0**	
1990-1991	233,155	75,000	**308,155**	No Projects	N/A	0	**0**	
1991-1992	308,155	75,000	**383,155**	1075 Front	1990.568	32,000	**32,000**	
1992-1993	351,155	75,000	**426,155**	No Projects	N/A	0	**0**	
1993-1994	426,155	75,000	**501,155**	No Projects	N/A	0	**0**	
1994-1995	501,155	75,000	**576,155**	No Projects	N/A	0	**0**	
1995-1996	576,155	75,000	**651,155**	No Projects	N/A	0	**0**	
1996-1997	651,155	75,000	**726,155**	No Projects	N/A	0	**0**	
1997-1998	726,155	75,000	**801,155**	No Projects	N/A	0	**0**	
1998-1999	801,155	75,000	**876,155**	1301 Sansome	1998.362	31,606	**31,606**	
1999-2000	844,549	75,000	**919,549**	435 Pacific	1998.369	32,500		
				2801 Leavenworth	200.459	40,000		
				215 Fremont	1998.497	47,950		
				845 Market	1998.090	49,100	**169,550**	
2000-2001	749,999	75,000	**824,999**	530 Folsom	2000.987	45,944		
				35 Stanford	2000.1162	48,000		
				2800 Leavenworth	2000.774	34,945		
				500 Pine	2000.539	44,450	**173,339**	**See also 350 Bush Street - Large**
2001-2002	651,660	75,000	**726,660**	No Projects	N/A	0	**0**	
2002-2003	726,660	75,000	**801,660**	501 Folsom	2002.0223	32,000	**32,000**	
2003-2004	769,660	75,000	**844,660**	No Projects	N/A	0	**0**	
2004-2005	844,660	75,000	**919,660**	185 Berry Street	2005.0106	49,000	**49,000**	
2005-2006	870,660	75,000	**945,660**	No Projects	N/A	0	**0**	
2006-2007	945,660	75,000	**1,020,660**	No Projects	N/A	0	**0**	
2007-2008	1,020,660	75,000	**1,095,660**	654 Minnesota	no case number	43,939	**0**	**UCSF**
2008-2009	1,095,660	75,000	**1,170,660**	No Projects	N/A	0	**0**	
2009-2010	1,170,660	75,000	**1,245,660**	660 Alabama Street	2009.0847	39,691	**39,691**	
2010-2011	1,205,969	75,000	**1,280,969**	No Projects	N/A	0	**0**	
2011-2012	1,280,969	75,000	**1,355,969**	208 Utah / 201 Potrero	2011.0468	48,732		**EN Legitimization**

ANNUAL LIMIT FOR "SMALL" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,188,805

Approval Period[1]	Unallocated Sq. Ft.[2]	"Small" Office Annual Limit	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
				808 Brannan Street	2012.0014	43,881		EN Legitimization
				275 Brannan Street	2011.1410	48,500		
				385 7th/1098 Harrison	2011.1049	42,039		EN Legitimization
				375 Alabama Street	2012.0128	48,189	231,341	EN Legitimization
2012-2013	1,124,628	75,000	1,199,628	No Projects	N/A	0	0	
2013-2014	1,199,628	75,000	1,274,628	3130 20th Street	2013.0992	32,081		
				660 3rd Street	2013.0627	40,000	72,081	
2014-2015	1,202,547	75,000	1,277,547	340 Bryant Street	2013.1600	47,536		
				101 Townsend Street	2014-002385	41,206	88,742	
					Total	1,105,134		

[1] Each approval period begins on October 17

[2] Carried over from previous year

ANNUAL LIMIT FOR "LARGE" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,429,763

Approval Period[1]	Unallocated Sq. Ft.[2]	"Large" Office Annual Limit[3]	Reduction per Section 321.1	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
1985-1986	0	875,000	(475,000)	400,000	No Projects	N/A	0	0	
1986-1987	400,000	875,000	(475,000)	800,000	600 California	1986.085	318,030		
					235 Pine	1984.432	147,500		
					343 Sansome	1985.079	160,449	625,979	
1987-1988	174,021	875,000	(475,000)	574,021	No Projects	N/A	0	0	
1988-1989	574,021	875,000	(475,000)	974,021	No Projects	N/A	0	0	
1989-1990	974,021	875,000	(475,000)	1,374,021	150 California	1987.613	195,503	195,503	
1990-1991	1,178,518	875,000	(475,000)	1,578,518	No Projects	N/A	0	0	
1991-1992	1,578,518	875,000	(475,000)	1,978,518	300 Howard	1989.589	382,582	382,582	aka 199 Fremont Street
1992-1993	1,595,936	875,000	(475,000)	1,995,936	No Projects	N/A	0	0	
1993-1994	1,995,936	875,000	(475,000)	2,395,936	No Projects	N/A	0	0	
1994-1995	2,395,936	875,000	(475,000)	2,795,936	No Projects	N/A	0	0	
1995-1996	2,795,936	875,000	(475,000)	3,195,936	No Projects	N/A	0	0	
1996-1997	3,195,936	875,000	(475,000)	3,595,936	101 Second	1997.484	368,800	368,800	
1997-1998	3,227,136	875,000	(37,582)	4,064,554	55 Second Street	1997.215	283,301		aka One Second Street
					244-256 Front	1996.643	58,650		aka 275 Saramento Street
					650 Townsend	1997.787	269,680		aka 699-08th Street
					455 Golden Gate	1997.478	420,000		State office building - see also Case No. 1993.707
					945 Battery	1997.674	52,715		
					475 Brannan	1997.470	61,000		
					250 Steuart	1998.144	540,000	1,685,346	aka 2 Folsom/250 Embarcadero
1998-1999	2,379,208	875,000	0	3,254,208	One Market	1998.135	51,822		
					Pier One	1998.646	88,350		Port office building
					554 Mission	1998.321	645,000		aka 560/584 Mission Street
					700 Seventh	1999.167	273,650		aka 625 Townsend Street
					475 Brannan	1999.566	2,500	1,061,322	addition to previous approval - 1997.470
1999-2000	2,192,886	875,000	0	3,067,886	670 Second	1999.106	60,000		
					160 King	1999.027	176,000		
					350 Rhode Island	1998.714	250,000		
					First & Howard	1998.902	854,000		First & Howard bldg #2 (405 Howard), #3 (505-525 Howard) & #4 (500 Howard)
					235 Second	1999.176	180,000		
					500 Terry Francois	2000.127	280,000		Mission Bay 26a
					550 Terry Francois	2000.329	225,004		Mission Bay 28
					899 Howard	1999.583	153,500	2,178,504	
2000-2001	889,382	875,000	0	1,764,382	First & Howard	1998.902	295,000		First & Howard bldg #1 (400 Howard)
					550 Terry Francois	2000.1293	60,150	355,150	Additional allocation (see also 2000.329)
2001-2002	1,409,232	875,000	0	2,284,232	350 Bush	2000.541	344,500		See also 500 Pine Street - Small
					38-44 Tehama	2001.0444	75,000		

ANNUAL LIMIT FOR "LARGE" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,429,763

Approval Period[1]	Unallocated Sq. Ft.[2]	"Large" Office Annual Limit[3]	Reduction per Section 321.1	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
					235 Second	2000.319	64,000		modify 1999.176
					250 Brannan	2001.0689	113,540		
					555 Mission	2001.0798	549,000		
					1700 Owens	2002.0300	0*	1,146,040	Alexandria District - West Campus (160,100)
2002-2003	1,138,192	875,000	0	2,013,192	7th & Mission GSA	No Case	514,727	514,727	Federal Building
2003-2004	1,498,465	875,000	0	2,373,465	Presidio Dig Arts	No Case	839,301	839,301	Presidio Trust
2004-2005	1,534,164	875,000	0	2,409,164	No Projects	N/A	0	0	
2005-2006	2,409,164	875,000	0	3,284,164	201 16th Street	2006.0384	430,000	430,000	aka 1409/1499 Illinois
2006-2007	2,854,164	875,000	0	3,729,164	1500 Owens	2006.1212	0*		Alexandria District - West Campus (158,500)
					1600 Owens	2006.1216	0*		Alexandria District - West Campus (228,000)
					1455 Third Street/455 Mission Bay South Blvd/450 South Street	2006.1509	0*		Alexandria District - North Campus (373,487)
					1515 Third Street	2006.1536	0*		Alexandria District - North Campus (202,893)
					650 Townsend	2005.1062	375,151		
					120 Howard	2006.0616	67,931		
					535 Mission	2006.1273	293,750	736,832	
2007-2008	2,992,332	875,000	0	3,867,332	100 California	2006.0660	76,500		
					505-525 Howard	2008.0001	74,500		Additional allocation for First & Howard Building #3
					680 Folsom Street	No Case	117,000		Redevelopment - Yerba Buena
					Alexandria District	2008.0850	1,122,980		Establishes Alexandria Mission Bay Life Sciences and Technology Development District ("Alexandria District") for which previously allocated office space and future allocations would be limited to 1,350,000 gsf to be distributed among designated buildings within district.
					600 Terry Francois	2008.0484	0*		Alexandria District - East Campus (312,932)

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ANNUAL LIMIT FOR "LARGE" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,429,763

Approval Period[1]	Unallocated Sq. Ft.[2]	"Large" Office Annual Limit[3]	Reduction per Section 321.1	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
					650 Terry Francois	2008.0483	0*		Alexandria District - East Campus (291,367)
					1450 Owens	2008.0690	0*	1,390,980	Alexandria District - West Campus (61,581)
2008-2009	2,476,352	875,000	0	3,351,352	No Projects	N/A	0	0	
2009-2010	3,351,352	875,000	0	4,226,352	850-870 Brannan Street	2009.1026	138,580		aka 888 Brannan Street
					222 Second Street	2006.1106	430,650	569,230	LEED
2010-2011	3,657,122	875,000	0	4,532,122	350 Mission Street	2006.1524	340,320		
					Alexandria District	n/a	200,000		under terms of Motion 17709
					Treasure Island	2007.0903	0	540,320	Priority Resolution Only
2011-2012	3,991,802	875,000	0	4,866,802	Alexandria District	n/a	27,020		under terms of Motion 17709
					850-870 Brannan St	2011.0583	113,753		aka 888 Brannan Street
					444 DeHaro St	2012.0041	90,500		
					460-462 Bryant St	2011.0895	59,475		
					185 Berry St	2012.0409	101,982		aka China Basin Landing
					100 Potrero Ave.	2012.0371	70,070		EN Legitimization
					601 Townsend Street	2011.1147	72,600	535,400	EN Legitimization
2012-2013	4,331,402	875,000	0	5,206,402	101 1st Street	2012.0257	1,370,577		Transbay Tower; aka 425 Mission
					181 Fremont Street	2007.0456	404,000		new office/residential building
					1550 Bryant Street	2012.1046	108,399		EN Legitimization
					1100 Van Ness Ave	2009.0885	242,987		CPMC Cathedral Hill MOB
					3615 Cesar Chavez	2009.0886	94,799		CPMC St. Luke's MOB
					345 Brannan Street	2007.0385	102,285		
					270 Brannan Street	2012.0799	189,000		
					333 Brannan Street	2012.0906	175,450		
					350 Mission Street	2013.0276	79,680		Salesforce (No. 2)
					999 Brannan Street	2013.0585	143,292		EN Legitimization - Dolby
					1800 Owens Street	2012.1482	700,000	3,610,469	Mission Bay Block 40
2013-2014	1,595,933	875,000	0	2,470,933	300 California Street	2012.0605	56,459		
					665 3rd Street	2013.0226	123,700		
					410 Townsend Street	2013.0544	76,000		
					888 Brannan Street	2013.0493	10,000		AirBnB - See Also 2011.0583B
					81-85 Bluxome Street	2013.0007	55,000	321,159	
2014-2015	2,149,774	875,000	0	3,024,774	501-505 Brannan Street	2012.1187	137,446		
					100 Hooper Street	2012.0203	284,471		
					390 Main Street	n/a	137,286		MTC Project - Verified on 4/14/15
					250 Howard Street	2014-002085	766,745		aka Transbay Block 5 (195 Beale St)
					510 Townsend Street	2014.0679	269,063	1,595,011	
						Total	19,082,655		

[1] Each approval period begins on October 17

ANNUAL LIMIT FOR "LARGE" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,429,763

Approval Period[1]	Unallocated Sq. Ft.[2]	"Large" Office Annual Limit[3]	Reduction per Section 321.1	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments

[2] Carried over from previous year
[3] Excludes 75,000 gsf dedicated to "small" projects per Section 321(b)(4)

O-MBA25L10

SMALL OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
1986-1987	1985.244	1199 Bush	0280-031	46,645	11026	complete	1991	St. Francis Hospital
1987-1988	1988.349	3235-18th Street	001/030	45,350	11451	complete		PG&E, aka 2180 Harrison Street
1988-1989	1988.568	2601 Mariposa	4016-001	49,850	11598	complete	1991	KQED
	1988.287	1501 Sloat	7255-002	39,000	11567	doesn't count	n/a	revoked 12/00
1989-1990								
1990-1991	1990.238	350 Pacific	0165-006	45,718	13114	doesn't count	n/a	revoked 12/00
1991-1992	1990.568	1075 Front	0111-001	32,000	13381	complete	1993	
	1987.847	601 Duboce	3539-001	36,000	13254	doesn't count	n/a	revoked 12/00
1992-1993								No Projects Approved During Allocation Period
1993-1994								No Projects Approved During Allocation Period
1994-1995								No Projects Approved During Allocation Period
1995-1996								No Projects Approved During Allocation Period
1996-1997								No Projects Approved During Allocation Period
1997-1998								No Projects Approved During Allocation Period
1998-1999	1998.362	1301 Sansome	0085-005	31,606	14784	complete	1999	
1999-2000	1998.369	435 Pacific	0175-028	32,500	14971	complete	2003	
	2000.459	2801 Leavenworth	0010-001	40,000	15922	complete	2001	The Cannery
	1998.497	215 Fremont	3738-012	47,950	15939	complete	2002	
	1999.668	38-44 Tehama	3736-111	49,950	15967	doesn't count	n/a	reapproved as large project
	1998.090	845 Market	3705-09-18 into 3705-049	49,100	15949	complete	2006	Bloomingdale's
2000-2001	1999.821	178 Townsend	3788-012	49,002	16025	doesn't count	n/a	18mos exp 5/2/02; 2005.0470 new E & K appl for residential, building permit application no.2006082908851 for residential submitted on 8/29/07; 9/4/08 CPC approves conversion to Residential (M17688) - Revoked on 1/23/09
	2000.987	530 Folsom	3736-017	45,944	16023	complete	2006	
	1999.300	272 Main	3739-006	46,500	16049	doesn't count	n/a	18mos exp 6/7/02; permit 2005021858l0 filed 2/05. 12/15/08 - Building Permit Application No. 200811136470 issued for demolition of two buildings on property. To be used for temp Transbay facility. REVOCATION LETTER ISSUED 3/16/09
	2000.1162	35 Stanford	3788-038	48,000	16070	complete	2007	
	2000.774	2800 Leavenworth	007/008	34,945	16071	complete	2001	The Anchorage
	2000.552	199 New Montgomery	3722-021	49,345	16104	doesn't count	n/a	revoked 1/6/05
	2000.1269	3433 Third	5203-23	42,000	16107	doesn't count	n/a	building permit application no. 200011014657 withdrawn on 11/9/06. REVOCATION LETTER ISSUED 9/25/07

SMALL OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	1999.795	177 Townsend	3794-4,7	46,775	16122	doesn't count	n/a	revoked 1/6/05
	2000.539	**500 Pine**	**258-4 to 9/033**	**44,450**	**16113**	**approved**	**n/a**	**18mos exp 9/15/02 - CPC received project status update on 10/11/07 (project is associated with 350 Bush Street - Large Office Approval). Building permit application no. 200011024683 approved by CPB on 9/4/08. Building permit application no. 200806275535 submitted for shoring work (9/4/08 - under review by DPW-BSM)**
	2000.986	150 Powell	327-22	39,174	16118/164 23	doesn't count	n/a	time limit for construction extended (see Case No. 2002.0363B). Project converted to residential use (see Case No. 2006.1299)
	1998.281	185 Berry	3803-005	49,500	16143	doesn't count	n/a	new approval 2005
	2000.190	201 Second	3736-097	44,500	16148	doesn't count	n/a	converted to residential use
	2000.660	35 Hawthorne	3735-047	40,350	16174	doesn't count	n/a	converted to residential use - see 2004.0852 and building permit application no. 200509082369
	2000.122	48 Tehama	3736-084/085	49,300	16235	doesn't count	n/a	revoked at Planning Commission hearing on 6/9/11
	2000.723	639 Second	3789-005/857:971	49,500	16241	doesn't count	n/a	revoked 1/6/05
	1999.423	699 Second	3789-004/857:971	49,500	16240	doesn't count	n/a	revoked 1/10/05
2001-2002	2001.0050	3251 18th Street	3591-018	49,500	16451	doesn't count	n/a	6/28/07 - building permit application no. 200706285450 submitted to revise project and reduce office space to approx. 10,000 gsf. - REVOCATION LETTER ISSUED 8/16/07
2002-2003	2002.0223	501 Folsom Street	3749-001	32,000	16516	complete	2006	
2003-2004								No Projects Approved During Allocation Period
2004-2005	2005.0106	185 Berry Street	3803-005	49,000	17070	complete	2008	
2005-2006								No Projects Approved During Allocation Period
2006-2007	No Case	654 Minnesota	4042-003 & 00	43,939	none	complete	2009	Confirmed by UCSF via 7/13/2007 letter from UCSF and associated LoD
2007-2008								No Projects Approved During Allocation Period
2008-2009	2006.1294	110 The Embarcadero	3715-002	41,940	17804	doesn't count	n/a	18mos exp 7/14/10 - E appealed to BoS and overturned on 3/17/09. Application withdrawn and case closed on 12/30/09.
2009-2010	2009.0847	660 Alabama Street	4020-002	39,691	17973	complete	2011	CFC for building permit application no. 201001144798 issued on 3/23/11
2010-2011								No Projects Approved During Allocation Period
2011-2012	2011.0468	208 Utah / 201 Potrero	3932-017	48,732	18608	complete	2012	BPA No. 201205090093
	2012.0014	808 Brannan Street	3780-004D	43,881	18559	complete	2013	BPA No. 201201031584
	2012.0128	375 Alabama Street	3966-002	48,189	18574	complete	2013	BPA No. 201209210308
	2011.1049	385 7th / 1098 Harrison	3754-017	42,039	18700	complete	2013	BPA No. 201212115895
	2011.1410	275 Brannan Street	3789-009	48,500	18672	complete	2013	BPA No. 201207164925
2012-2013								No Projects Approved During Allocation Period
2013-1014	2013.0992	3130 20th Street	4083-002	32,081	19188			BPA No. 201405271924 for change of use approved by Planning on 1/6/15 and now awaiting changes from architect as requested by DBI as of 2/3/15.
	2013.0627	660 3rd Street	3788-008	40000	19234	complete	2015	BPA No. 201411252480 issued on 2/24/15.

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SMALL OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
2014-2015	2013.1600	340 Bryant Street	3764-061	47536	19311	under construction		BPA 201305177189 issued 7/15/15.

O-MBA25L10

LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
1986-1987	1986.085	600 California	0241-003 into 0241-027	318,030	11077	complete	1992	
	1984.432	235 Pine	0267-015	147,500	11075	complete	1991	
	1984.274	33 Columbus	0195-004	81,300	11070	doesn't count	n/a	revoked 12/00
	1985.079	343 Sansome	0239-002	160,449	11076	complete	1991	
1987-1988								No Projects Approved During Allocation Period
1988-1989	1984.199	524 Howard	3721-013	199,965	11683	doesn't count	n/a	reapproved in 1998 under Case No. 1998.843.
1989-1990	1987.613	150 California	0236-003 into 0236-019	195,503	11828	complete	2001	
1990-1991	1989.589	300 Howard	3719-005 into 3719-018	382,582	13218	complete	2001	aka 199 Fremont Street
1991-1992								No Projects Approved During Allocation Period
1992-1993								No Projects Approved During Allocation Period
1993-1994								No Projects Approved During Allocation Period
1994-1995	1994.105	101 Second Street	3721-072	386,655	13886	doesn't count	n/a	Reapproved in 1997 under Case No. 1997.484.
1995-1996								No Projects Approved During Allocation Period
1996-1997	1997.484	101 Second Street	3721-72:75 into 3721-089	368,800	14454	complete	2000	
1997-1998	1997.215	55 Second Street	3708-019A/033/034 into 3708-096	283,301	14542	complete	2002	aka One Second Street
	1996.643	244-256 Front	0236-018	58,650	14601	complete	2001	aka 275 Sacramento Street
	1997.787	650 Townsend	3783-009	269,680	14520	complete	2001	aka 699-08th Street
	No Case	455 Golden Gate	0765-002/003	420,000	none	complete	1998	State office building. See also case no. 1993.707.
	1997.674	945 Battery	0135-001	52,715	14672	complete	1998	
	1997.470	475 Brannan	3787-031	61,000	14685	complete	2001	
	1998.144	250 Steuart	3741-028 into 3741-035	540,000	14604	complete	2002	aka 2 Folsom/250 Embarcadero
1998-1999	1998.135	One Market	3713-006	51,822	14756	complete	2000	
	1998.843	524 Howard	3721-013	201,989	14801	doesn't count	n/a	revoked 6/11 under Case No. 2011.0503
	1998.646	Pier One	9900-001	88,350	none	complete	2003	Port office building

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LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
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AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	1998.321	554 Mission	3708-015/017/018 into 3708-095	645,000	14893	complete	2003	aka 560/584 Mission
	1999.167	700 Seventh	3799-001 into 3799-008	273,650	14895	complete	2006	aka 625 Townsend
	1999.566	475 Brannan	3787-031	2,500	14884	complete	2001	addition to previous approval - 1997.470
	1998.268	631 Folsom	3750-090	170,000	14750	doesn't count	n/a	project converted to residential - allocation revoked 12/00.
1999-2000	1999.106	670 Second	3788-043/044	60,000	14907	complete	2001	
	1999.027	160 King	3794-025	176,000	14956	complete	2002	
	1998.714	350 Rhode Island	3957-001	250,000	14988	complete	2004	
	1998.902	First & Howard	3721; 3736; 3737	854,000	15006	complete/approved	405 Howard - 2005; 505-525 Howard - under review; 500 Howard - 2003	18 mos exp 9/2/01. Includes 3 of 4 buildings at First & Howard (see bldg #1 - 400 Howard - below): bldg #2 - 405 Howard (3737-030) - 460,000 gsf office - 200002172133 - complete); bldg #3 - 505-525 Howard (3736-121/114) - 178,000 gsf office - 200610316514 currently (9/4/08) under review by Planning (see also 2008.0001 for additional allocation); bldg #4 -500 Howard (3721-119) - 216,000 gsf office - 200006172952 - complete).
	1999.176	235 Second	3736-061 into 3736-123	180,000	15004	complete	2002	

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Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	2000.127	500 Terry Francois	3838; 3839 into 8721-001/010	280,000	15010	complete	2008	MB 26a
	1998.766	535 Mission	3721-068	252,000	15027	doesn't count	n/a	revoked and reapproved as residential
	1998.635	2101 Bryant	4080-007	148,000	15044	doesn't count	n/a	project converted to residential - allocation revoked 1/10/05
	2000.329	550 Terry Francois	3839; 3840 into 8721-001/011	225,004	15055	complete	2002	MB 28
	1999.583	899 Howard	3733-079	153,500	15062	complete	2005	
2000-2001	1998.902	First & Howard	3720-008	295,000	16069	complete	2008	First & Howard - Building #1 (400 Howard)
	2000.1293	550 Terry Francois	3839: 3840 into 8721-001/011	60,150	16110	complete	2002	addition to 2000.329.
	2000.1295	Mission Bay 26/2	3840; 3841 into 8721-001-012	145,750	16111	doesn't count	n/a	AKA MB 26 East. returned to cap for approval of 2002.0301
	1999.603	555 Mission	3721-69,70,78…	499,000	16130	doesn't count	n/a	project revised - allocation revoked and reapproved under Case No. 2007.0798.
	2000.277	801 Market	3705-48	112,750	16140	doesn't count	n/a	project abandoned per letter from sponsor
2001-2002	2000.541	350 Bush	269-2,2a,3,22…	344,500	16273	approved	n/a	18mos exp 5/8/03 - CPC received project status update on 10/11/07 (associated with 500 Pine Street - Small Office Approval). Sponsor email reports that 18-month period expired May 22, 2005 due to appeals. Building permit application no. 200708078938 currently under review by DBI/FD/DPW.
	2001.0444	38-44 Tehama	3736-111	75,000	16280	complete	2003	
	2000.319	235 Second	3736-61,62,64-67	64,000	16279	complete	2002	modify 1999.176 - convert warehouse from PDR to office.
	2001.0689	250 Brannan	3774-25	113,540	16285	complete	2002	
	2001.0798	555 Mission	3721-69,70,78-81, 120	549,000	16302	complete	2008	
	2002.0301	Mission Bay 42/4	8709-10	80,922	16397	doesn't count	n/a	revoked and reapproved as 2002.1216 (1600 Owens)
	2002.0300	1700 Owens	8709-007	0*	16398	complete	2007	Alexandria District (160,100). West Campus. 164,828
2002-2003	No Case	7th/Mission GSA	3702-15 …	514,727	none	complete	2007	Federal Building
	2002.0691	499 Illinois/201-16th Street	3940-001	429,542	16483	doesn't count	n/a	revoked and reapproved as 2006.0384 (201 16th Street) MB Block X4

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2003-2004	2001.1039	55 9th Street	3701-063	268,000	16760	doesn't count	n/a	200408111247 issued 5/19/05 - Authorization REVOKED by Planning Commission Motion Nos. 17521 and 17522 for proposal to convert project to residential use.
	2000.1229	Pier 30-32	3770-001	370,000	none	doesn't count	n/a	E, K & I Cases created, no B case created. BCDC permit approved in 2003 and allocation made for accounting purposes, but permit never acted upon. 2/09 - 370,000 added back to cap because project does not appear to be moving forward.
	No Case	Presidio - Letterman Digital Arts		839,301	none	complete	2006	
2004-2005								No Projects Approved During Allocation Period
2005-2006	2006.0384	201-16th Street	3940-001	430,000	17223	complete	2008	aka 1409-1499 Illinois/MB Block X-4. 18 mos exp 10/6/07. Project (200607186938) complete 11/19/08
2006-2007	2006.1212	1500 Owens	8709-006	0*	17333	complete	2009	Alexandria District - West Campus (158,500); 200611298694 issued 5/24/07 (aka MBS Blk 41-43, Parcel 5). Under construction. Estimated completion in March 2009.
	2006.1216	1600 Owens	8709-004/010	0*	17332	approved	n/a	Blk 41-43, Parcel 4. 200711097802 issued 6/3/08. Piles driven, no further work performed. Not currently active 5/18/2011
	2006.1509	Alexandria District - North Campus (MB 26/1-3; 1455 Third Street/455 Mission Bay South Blvd/450 South Street)	8721-012/8720-011/016/017	0*	17401	complete/approved	n/a	MBS Blk 26, Parcels 1-3, project proposes 3 buildings - building permit application no. 200704279921 (455 Mission Bay South Blvd.) COMPLETE on 11/17/09 for 5 story office/lab; 200705090778 (450 South Street) COMPLETE on 10/23/09 for "parking garage with 7 stories new building." 200806104062 filed on 6/10/08 for new 10-story office building - Issued 4/23/10, but not under construction.
	2006.1536	1515 Third Street	8721-012	0*	17400	approved	n/a	MBS Blk 27, Parcel 1 see also 2006.1509. 200806265407 filed 6/26/08 for 6-story office building - currently (9/29/08) being reviewed by SFFD. Sold to salesforce.com with 202,983 sf allocation as of April 2011.
	2005.1062	650 Townsend	3783-009	375,151	17440	complete	2009	18 mos exp 12/7/08. 200705151356 issued 2/20/08 - Conversion of existing structure into office - no major construction required. Final Inspection (3/16/09)

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	2006.0616	120 Howard	3717-019	67931	17466	complete	n/a	Construction completed in 2012
	2006.1273	535 Mission	3721-068, 083	293,750	17470	approved	n/a	18 mos exp 2/2/09; 2/12/08 - 200508049463 issued by CPB on 8/21/08. Appealed to Board of Permit Appeals on 8/29/08 (Appeal No. 08-137) - appeal withdrawn and permit reinstated on 8/29/08. Separate permits issued for pile indicators, site cleanup and fencing. 10/24/08 - Construction started in early 2013.
2007-2008	2006.0660	100 California	0236-017	76,500	17544	approved	n/a	18 mos exp 7/31/09. No building permit on file as of 5/18/11. Beacon Capital started the process and then allegedly sold to Broadway Partners, who are reputed to be current owners- no current status 6/16/14 update - Broadway Partners website lists the property as theirs. No building permits relating to project on file. Site visit on 6/17/14 shows no signs of upcoming construction activity.

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	2008.0001	505-525 Howard	3736-001:004/114/121	74,500	17641	approved	n/a	18 mos exp 12/26/09. 200610316514 for new construction COMPLETED on 3/11/14. "First & Howard" bldg 3 - see 1998.902. 2005.0733 on file to legalize existing surface parking lot.
	No Case	680 Folsom Street	3735-013	117,000	none	approved	n/a	Redevelopment (Yerba Buena)
	2008.0850	Alexandria District	various	1122980	17709	approved	n/a	Establishes Alexandria Mission Bay Life Sciences and Technology Development District ("Alexandria District") to consolidate previous and future allocations.
	2008.0484	600 Terry Francois	8722-001	0*	17710	approved	n/a	Alexandria District - East Campus (312,932) - schematic design.
	2008.0483	650 Terry Francois	8722-001	0*	17711	approved	n/a	Alexandria District - East Campus (291,367) - schematic design.
	2008.0690	1450 Owens	8709-006	0*	17712	approved	n/a	Alexandria District - West Campus (61,581) - schematic design as of 4/2011
2008-2009								No Projects Approved During Allocation Period
2009-2010	2009.1026	850-870 Brannan Street	3780-006/007/007A/072	138,580	18095	complete	2013	aka 888 Brannan Street
	2007.0946	Candlestick Point - Hunter's Point	Candlestick Point and Hunter's Point Shipyard	800000	18102	approved	n/a	NO ALLOCATION GRANTED YET. First 800,000 gsf of office development within the Candlestick Point - Hunter's Point Project Area to receive priority office allocation over all projects except the Transbay Transit Tower or those within Mission Bay South.
	2006.1106	222 Second Street	3735-063	430,650	18170	approved	n/a	BPA No. 200711309386
2010-2011	No Case	Alexandria District	various	200000	17709	approved	n/a	additional allocation per terms of Motion 17709 by Letter of Determination
	2006.1524	350 Mission Street	3710-017	335,000	18268	approved	n/a	
	2007.0903	Treasure Island	1939-001/002	0	18332	approved	n/a	Priority Resolution Only for 100,000gsf.
2011-2012	No Case	Alexandria District	various	27020	17709	approved	n/a	additional allocation per terms of Motion 17709 by Letter of Determination
	2011.0583	850-870 Brannan Street	3780-006, 007, 007A, and 072	113,753	18527	approved	2013	aka 888 Brannan Street
	2011.1147	601 Townsend Street	3799-001	72,600	18619	approved	n/a	BPA No. 201408063120 approved by Planning on 8/8/14, but not yet issued by DBI.
	2009.0885	1100 Van Ness Ave	0694-010	242,987	18599	doesn't count	n/a	CPMC - Cat Hill MOB; rescinded & reallocated in 2013 cycle
	2011.0895	460-462 Bryant St	3763-015A	59,475	18685	under construction	n/a	BPA No. 201312194664 issued on 5/22/14.
	2012.0041	444 DeHaro St	3979-001	90500	18653	under construction	2013	BPA No. 201312194626 issued on 12/31/13.
	2012.0409	185 Berry St	3803-005	101,982	18690	under construction	n/a	aka China Basin Landing.

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LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

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	2012.0371	100 Potrero Ave.	3920-001	70070	18704	complete	2013	EN Legitimization. BPA No. 201212286973 issued 5/6/13.
	2009.0886	3615 Cesar Chavez	6576-021	99,848	18595	doesn't count	n/a	CPMC - St. Luke's MOB; rescinded & reallocated in 2013 cycle
2012-2013	2012.0257	101 1st Street	3720-001	1,370,577	18725	under construction	n/a	Transbay Tower; aka 425 Mission St. BPA No. 201303132080.
	2007.0456	181 Fremont Street	0308-001	361038	18764	under construction	n/a	BPA No. 201305015894 issued 12/26/13.
	2012.1046	1550 Bryant Street	3923-006	108,399	18732	complete	2013	EN Legitimization. BPA No. 201302069627
	2012.1482	1800 Owens	8727-005	700000	18807	approved	n/a	currently under review at OCII, DBI and SFFD. Approved 2/14/13
	2009.0885	1100 Van Ness Ave	0694-010	242987	18890	under construction	n/a	CPMC - Cat Hill MOB
	2009.0886	3615 Cesar Chavez	6576-021	94,799	18886	approved	n/a	CPMC - St. Luke's MOB
	2007.0385	345 Brannan Street	3788-039	102285	19000	under construction	n/a	Construction started in early 2014.
	2012.0799	270 Brannan Street	3774-026	189000	18988	under construction	n/a	BPA No. 201312174402 issued on 4/25/14. Foundation and Superstructure Addendum approved. Architectural Addendum under review by DBI/DPW/PUC. "Groundbreaking" in August 2014.
	2012.0906	333 Brannan Street	3788-042	175,450	18952	under construction	n/a	BPA No. 201306280744 issued 1/5/14. Planning approved Arch addendum on 2/20/14.
	2013.0276	350 Mission Street	3710-017	79,680	18956	under construction	n/a	Salesforce (No. 2). BPA No. 201108011461 issued 9/5/12. Planning approved Arch addendum on 9/11/14.
	2013.0585	999 Brannan Street	3782-003	143292	18950	complete	2014	EN Legitimization. BPA No. 201306280728 issued 4/28/14.
2013-2014	2012.0605	300 California Street	0238-002	56459	19034	approved	n/a	Approved 12/5/13. No BPA filed.
	2013.0226	665 3rd Street	3788-041	123,700	19012	complete	2013	BPA No. 201311222636 issued on 12/31/13 to legalize office space.
	2013.0544	410 Townsend Street	3785-002A	76000	19062	approved	n/a	BPA No. 201306260587 approved by Planning on 7/30/14, but now "in hold" at DBI as of 12/3/14.
	2013.0493	888 Brannan Street	3780-006, 007, 007A, and 072	10000	19049	complete	2014	AirBnB (No. 2) to convert GF parking to office.
	2013.0007	81-85 Bluxome Street	3786-018	55,000	19088	under construction	n/a	BPA No. 201404072588 issued 12/17/14. Arch addendum approved by all agencies except Planning.
2014-2015	2012.1187	501-505 Brannan Street	3786-038	137446	19295	approved	n/a	No BPA filed. The approved six-story office building project recently submitted a PPA to Planning proposing a "Phase II" for an additional 11 stories and 168,820 sf of office space.
	2012.0203	100 Hooper Street	3808-003	284471	19315	approved	n/a	BPA Nos. 201410239755 and 201410209377 approved by Planning on 4/13/15, approved by DBI 6/24/15. Currently under review by SFFD and SFPUC.

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BAY AREA AIR QUALITY MANAGEMENT DISTRICT

November 2, 2015

Tiffany Bohee
Executive Director
Office of Community Investment and Infrastructure
One S. Van Ness Ave., 5th Floor
San Francisco, CA 94103

ALAMEDA COUNTY
Tom Bates
Margaret Fujioka
Scott Haggerty
Nate Miley

CONTRA COSTA COUNTY
John Gioia
David Hudson
Karen Mitchoff
Mark Ross

MARIN COUNTY
Katie Rice

NAPA COUNTY
Brad Wagenknecht

SAN FRANCISCO COUNTY
John Avalos
Edwin M. Lee
Eric Mar
(Vice-Chair)

SAN MATEO COUNTY
David J. Canepa
Carole Groom
(Chair)

SANTA CLARA COUNTY
Cindy Chavez
Liz Kniss
(Secretary)
Jan Pepper
Rod G. Sinks

SOLANO COUNTY
James Spering

SONOMA COUNTY
Teresa Barrett
Shirlee Zane

Jack P. Broadbent
EXECUTIVE OFFICER/APCO

Subject: Response to Comments on the DSEIR for the Event Center & Mixed-Use Development at Mission Bay Blocks 29-32 (Project).

Dear Ms. Bohee:

The Bay Area Air Quality Management District (Air District) is willing to assist the City and County of San Francisco (City) by administering an off-site mitigation program to reduce this Project's significant air quality impacts to the extent feasible. As we have discussed extensively with City staff, the $321,646 identified in M-AQ-2b is not sufficient to achieve the 17 tons per year of ozone precursor emission reductions needed for this Project. Due to the nature of air quality impacts that need to be mitigated, comparison of the Air District off-site mitigation program identified for this Project to other air district programs is inappropriate and incorrect.

The amount of funds required to reduce 4.4 tons of reactive organic gases (ROG) and 12.6 tons of oxides of nitrogen (NOx), including a 5 percent administration fee, is $620,922. This amount is based on a study of the Air District's Vehicle Buy Back (VBB) program funds spent over the last 3 years and represents the average cost of reducing ROG and NOx during that three year period. Only through the VBB program can the Air District achieve the contemporaneous emission reductions and other conditions set forth in M-AQ-2b.

Air District staff continues to be willing to assist the City in implementing an off-site mitigation program. However, the Final Environmental Impact Report Response to Comments includes the following statement: "Acceptance of this fee by the BAAQMD shall serve as an acknowledgement and commitment by the BAAQMD to: (1) implement an emissions reduction project(s) within one year of receipt of the mitigation fee to achieve the emission reduction objectives specified above [i.e. 17 tons of ozone precursors per year]". Given this language, unless the City amends M-AQ-2b to fund this feasible mitigation measure at the $620,922 level previously discussed with City staff, the Air District will be unable to participate in offsetting this Project's air quality impacts.

EXHIBIT 4

O-MBA25L10

Tiffany Bohee November 2, 2015

If you have any questions, please contact Alison Kirk, Senior Environmental Planner, at (415) 749-5169 or akirk@baaqmd.gov.

Sincerely,

Jean Roggenkamp
Deputy Executive Officer

cc: BAAQMD Vice Chair Eric Mar
BAAQMD Director John Avalos
BAAQMD Director Edwin M. Lee

O-MBA25L10

OCII
office of
COMMUNITY INVESTMENT
and INFRASTRUCTURE

DATE: November 2, 2015

TO: Tiffany Bohee, OCII Executive Director

FROM: Chris Kern, City Planning Department
Sally Oerth, OCII Staff

SUBJECT: BAAQMD November 2, 2015 letter re Ozone Precursors Offset Mitigation Fee

The City Planning Department and the staff of the Office of Community Investment and Infrastructure (OCII) have reviewed the November 2, 2015 letter from the Bay Area Air Quality Management District regarding the Warriors Event Center and Mixed Use Development Subsequent Environmental Impact Report (SEIR). The letter states that the $18,030 per weighted ton per year plus a 5% administrative fee mitigation fee identified in Mitigation Measure M-AQ-2b of the SEIR is insufficient to achieve the required reduction of 17.0 tons per year of ozone precursors. The letter proposes that the mitigation fee should be based on the BAAQMD's Vehicle Buy Back Program, at a cost of $620,922 (or approximately $36,525 per weighted ton per year) to achieve the required emissions reduction.

As discussed in the Draft SEIR (pages 5.4-41 through 5.4-42) and the Responses to Comments document (pages 13.13-65 through 13.13-69), the offset fee identified in Mitigation Measure M-AQ-2b is based on the California Air Resources Board (CARB) Carl Moyer program cost-effectiveness criteria. These criteria were developed by CARB to establish the upper limit for emissions offset projects eligible to receive funding through the Carl Moyer program.

Planning staff has been in communication with BAAQMD with regard to its suggestion that a higher fee may be warranted to offset project emissions to a less than significant level and found that BAAQMD could not establish that an increased rate beyond that of the Carl Moyer Program plus a five percent administrative fee could meet the "rough proportionality" standard required under CEQA. The Carl Moyer fee structure was reviewed and updated by CARB in March of 2015 and became fully implemented on July 1, 2015. The offset costs cited in Mitigation Measure M-AQ-2b Emission Offsets are consistent with those of the CARB and other operating California air districts. For example, in the Sacramento Metropolitan Air Quality Management District, the off-site construction mitigation fee rate is $18,030 per ton of excess NOx emissions as of July 1, 2015 (plus an administrative fee of 5 percent) and is based on the cost effectiveness formula established in California's Carl Moyer Incentive Program. In the San Joaquin Valley Air Pollution Control District, the Indirect Source Review (ISR) program requires that an offsite reduction fee of $9,350/ton plus a 4 percent administration fee be applied

Edwin M. Lee
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EXHIBIT 5

O-MBA25L10

for NOx emission reductions that cannot be achieved through onsite emission reduction measures. Furthermore, the offset costs in Mitigation Measure M-AQ-2b is consistent or even higher than comparable offset programs in the SFBAAB.[1]

The BAAQMD's November 2, 2015, letter does not establish that the CARB cost-effectiveness criteria are inappropriate for determining the offset costs under Mitigation Measure M-AQ-2b. Based on the information and analysis presented in the Draft SEIR, the Responses to Comments and supporting technical analyses, Planning Department and OCII staffs continue to believe that the offset fee established in Mitigation Measure M-AQ-2b is sufficient to achieve the required emissions offsets. In addition, as discussed in the Responses to Comments document, Mitigation Measure M-AQ-2b has been revised since publication of the Draft SEIR to allow the project sponsor to directly implement an emissions offset project as an alternative to entering into an agreement with the BAAQMD.

Therefore, for the reasons summarized above and discussed in greater detail in the SEIR and Responses to Comments, the November 2, 2015, letter from the BAAQMD does not alter the analysis or conclusions reached in the SEIR.

[1] Keinath, Michael, Rambol Environ, 2015. Analysis of the Proposed Offset Program for the Golden State Warriors. October 19, 2015.

O-MBA26S8

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November 9, 2015

SENT BY U.S. MAIL AND EMAIL (Board.of.Supervisors@sfgov.org)

Budget and Finance Committee
City and County of San Francisco
Board of Supervisors
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102

RE: Comments on November 9, 2015 Agenda Item Nos. 1-4 re: Warriors Event Center at Mission Bay, Mission Bay Transportation Improvement Fund and Related Actions

Dear Budget and Finance Committee Members:

This firm represents the Mission Bay Alliance (the "Alliance") with respect to the Warriors Event Center Project ("Project"). These comments address the Final Subsequent Environmental Impact Report for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("SEIR") as well as the Budget and Finance Committee's consideration and approvals for the Project itself.

As explained in this firm's November 3, 2015, Letter to the San Francisco Municipal Transportation Agency ("MTA"), Board of Directors regarding their November 3, 2015, Agenda Item No. 13, the SEIR is defective as an informational document with respect to the analysis and public disclosure of impacts and mitigation measures regarding transportation under the California Environmental Quality Act (Pub. Resources Code, §§ 21000 et seq. ("CEQA")). Specifically, the SEIR does not describe the approval of the Mission Bay Transportation Improvement Fund ("MBTIF") as a mitigation measure. Yet the MBTIF is essential to the City's attempts to mitigate the Project's transportation-related impacts. The City's strategy of conflating analysis of the Project's design features and mitigation measures violates CEQA. (See, e.g., *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645.) The prejudice associated with the City's strategy, in addition to obscuring the City's public subsidy for the Project, is that the EIR "fail[s] to consider whether other possible mitigation measures would be more effective." (*Id*. at 657.)

1
[LC-PD-1]

The City also appears to rely on the incorporation of the MBTIF into the Project description in order to conceal from the public the City's failure to require full mitigation of the Project's impacts from the applicant. A fundamental principle of CEQA is that

development projects should mitigate their impacts to the extent feasible. (See, e.g., Pub. Resources Code, § 21002; see also CEQA Guidelines, § 15126.4.) With respect to the Project's transportation impacts, the City deviates from this principle and instead adopts an odd, ad hoc "fair share" fee program to mitigate Project-level impacts. (*Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173 (*Anderson First*).) As a threshold matter, the SEIR never discloses to the public that it essentially relies upon "fair share" payments from the Project in order to mitigate its Project-level transportation impacts, which renders the SEIR defective as an informational document. Had the SEIR described the Project's approach to mitigating transportation impacts, it would have been apparent that the SEIR failed to disclose necessary information about this fair share program.

The payment of "fair share" impact fees may constitute adequate mitigation if the payments "are part of a reasonable plan of actual mitigation that the relevant agency commits itself to implementing." (*Id.* at 1188-1189.) The *Anderson First* decision identified the information that is required in an EIR to establish the adequacy of a "fair share" mitigation measure, which includes the following:

(i) An identification of the required improvement;
(ii) An estimate of the cost of the required improvement;
(iii) Sufficient information to determine how much the project would pay towards the improvement; and
(iv) The fees must be part of a reasonable, enforceable plan or program sufficiently tied to the actual mitigation of the impacts at issue.

(*Ibid.*)

The SEIR fails to provide this necessary information, and never even mentions the MBTIF. While the SEIR does mention the Transportation Management Plan ("TMP") and Transit Service Plan ("TSP") as addressing the Project's transportation impacts, the SEIR fails to identify the total costs of the improvements, the Project's allocated contribution, and the enforceable plan or program to contribute the Project's "fair share." The new information contained within this Committee's agenda packet regarding the MBTIF and other related matters cannot substitute for full disclosure of the selected approach to mitigation of transportation related impacts in the SEIR.

In addition, the actions on November 6, 2015, by the MTA, and this Committee's planned actions today with respect to approval of the MBTIF and the grant of street and easement vacations are contrary to California public disclosure laws with respect to economic development subsidies. California law requires the City to provide public notice and a public hearing, as well as detailed information about the purpose, nature, extent and effect subsidies, prior to commitment. (Gov. Code, § 53083.) The Budget and

1 [LC-PD-1] cont.

Legislative Analyst's Memorandum ("BLA Memo"), along with the SFMTA Cost Estimate spreadsheet make clear that there is an estimated revenue shortfall of $29,916,666, which will be financed through sale of SFMTA revenue bonds or other City financing source. (BLA Memo, pp. 7-8.) Payment of these Project mitigation costs by the City is an economic development subsidy, even if the loan is eventually repaid. (Gov. Code, §53083, subd. (g)(1).) Moreover, the summary vacation of streets and easements likely has value, yet no value is disclosed. Thus, the City must now comply with the substantive and procedural mandates of Government Code section 53083 prior to approving subsidies in the form of loans and other benefits included in the MBTIF and other related City actions and approvals, that provide transportation, infrastructure, public safety and other mitigation for Project impacts.

1 [LC-PD-1] cont.

* * *

Please feel free to contact my office with any questions about the information contained in this letter.

Very truly yours,

SOLURI MESERVE
A Law Corporation

By:

Osha R. Meserve

ORM/mre

O-MBA27S9

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November 10, 2015

SENT BY PERSONAL DELIVERY AND VIA EMAIL (commissioner.btan@gmail.com)

Bryant Tan, President
and Members of the Entertainment Commission
City and County of San Francisco
1 Drive Carlton B. Goodlett Place
San Francisco, CA 94102

RE: Comments on November 10, 2015, Regular Agenda Item (a)
Golden State Warriors Event Center
Place of Entertainment Permit and CEQA Findings

Dear President Tan and Commissioners:

This firm represents the Mission Bay Alliance (the "Alliance") with respect to the Warriors Event Center Project ("Project"). These comments address the Final Subsequent Environmental Impact Report for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("SEIR") and the Entertainment Committee's consideration of the Place of Entertainment Permit and CEQA Findings.

We have reviewed this Commission's agenda and proposed Resolution provided to us today, but have been informed that there is neither an explanatory staff report nor analysis accompanying the Commission's proposed actions.

Consideration of the Place of Entertainment Permit is premature and unlawful because the entertainment uses proposed by the Warriors sports arena are not a primary or secondary use allowed under the Mission Bay South Redevelopment Plan, as explained by my co-counsel Susan Brandt-Hawley on behalf of the Alliance in submissions to the OCII in July, October, and November 2015, and testimony before the OCII on November 3, 2015. 1 [LC-PP-1]

The Event Center Project SEIR does not comply with CEQA, as described in the Alliance's many comments on the SEIR submitted to OCII. Over the last three months, the Alliance has reviewed and commented on material inadequacies in the expedited environmental review process. This Commission and the Board of Supervisors cannot fully consider and adequately mitigate the Event Center's many significant impacts without the benefit of an EIR that complies with CEQA. 2 [LC-ERP-1]

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The CEQA findings adopted by the San Francisco Municipal Transportation Agency ("MTA") and being considered by this Commission are premature and unsupported, as explained in the Alliance's comments on the Draft Subsequent Environmental Impact Report ("DSEIR"), as well as letters submitted following the Final SEIR by this office and by Alliance co-counsel Thomas Lippe and Susan Brandt-Hawley. 3 [LC-ERP-3]

As explained in this firm's November 3, 2015, letter to the MTA, Board of Directors regarding their November 3, 2015, Agenda Item No. 13, incorporated by reference, the SEIR is defective and cannot be relied upon as an informational document with respect to the analysis and public disclosure of impacts and mitigation measures regarding transportation under the California Environmental Quality Act (Pub. Resources Code, §§ 21000 et seq. ("CEQA")). Specifically, the SEIR does not describe the approval of the Mission Bay Transportation Improvement Fund ("MBTIF") as a mitigation measure. The MBTIF is essential to the City's attempts to mitigate the Project's transportation-related impacts and its omission from the SEIR precludes this Commission's consideration of a Place of Entertainment Permit. The City's strategy of conflating analysis of the Project's design features and mitigation measures violates CEQA. (See, e.g., *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645.) 4 [LC-PD-1]

The SEIR's inadequate traffic analysis is explained in reports and letters submitted to the City and OCII throughout the administrative process for this project, as noted above, all of which are incorporated by reference. In particular, I respectfully direct the Commission's attention to the attached letters and reports from my co-counsel Thomas Lippe and experts Smith Engineering & Management, and Larry Wymer & Associates, Traffic Engineering. 5 [LC-TR-9]

The Alliance requests that the Commission decline to make CEQA findings and decline to approve the Place of Entertainment Permit. 6 [LC-ERP-3]

O-MBA27S9

Entertainment Commission
City and County of San Francisco
November 10, 2015
Page 3 of 3

Please feel free to contact my office with any questions about the information contained in this letter.

Very truly yours,

SOLURI MESERVE
A Law Corporation

By: Patrick Soluri

PS/mre

Attachments:

November 10, 2015, Letter from Smith Engineering & Management (2 letters)
November 9, 2015, Letter from Soluri Meserve, A Law Corporation
November 2, 2015, Letter from Larry Wymer & Associates
November 2, 2015, Letter from Smith Engineering & Management
July 27, 2015, Letter from Thomas N. Lippe

O-MBA27S9

SMITH ENGINEERING & MANAGEMENT

November 10, 2015

Mr. Tom Lippe
Law Offices of Thomas N. Lippe, APC
201 Mission Street, 12th Floor
San Francisco, CA 94105

Subject: Responses to Comment on Draft Subsequent Environmental Impact Report for Event Center and Mixed Use Development at Mission Bay Blocks 29-32. SCN:2014112045

P15003

Dear Mr. Lippe:

This is a continuation of my November 2, 2015 review of the Responses to Comment ("the RTC") on the Draft Subsequent Environmental Impact Report (hereinafter "the DSEIR") on the above referenced Project in the City and County of San Francisco (hereinafter "the City"). As I was a commenter on the DSEIR in regard to matters involving transportation and circulation in a letter dated July 26, 2015 which was transmitted as Exhibit 1 to your comment letter of July 27, 2015, my current comments focus on the responses to my own comments and yours on that subject. In addition, several others including representatives of BARTD, Caltrans, Caltrain, UCSF and other have filed comments that parallel and reinforce our own. I address the responses to those comments as well.

My qualifications to perform this review were thoroughly documented in my letter of comment on the DSEIR dated July 26, 2015 and are incorporated herein by reference.

This continuation of my comments focuses on emergency response and considerations of emergency access to the UCSF hospitals adjacent to the Project site.

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Emergency Response and Hospital Access

Our comments of November 2, 2015 concluded with the very brief remarks on SEIR Response TR – 9 which concerned comments on emergency response and UCSF hospital access. These additional comments offer more detailed observations on that response.

Inadequacy of Analysis of Congestion and Delay at Critical Intersection of Sixteenth – Seventh and Mississippi Streets

Response TR-9 states that under existing-plus-Project conditions, the majority of the study intersection in the vicinity of the Project site and the UCSF Medical Center Phase One site are projected to operate at LOS E or better. The exception is the intersection of Seventh, Mississippi and Sixteenth Streets which would change from LOS E to dysfunctional LOS F. The problem with the response is twofold. First, this overburdened intersection is on the primary emergency access routes to the UCSF hospitals from the East Bay, Downtown San Francisco, SOMA and most of the central and northern parts of the City. Hence, the so called "exception" is actually a critical failure. Second, the SEIR's analysis of the intersection understates the level of congestion there because it fails to account for the portion of time when train movements at the adjacent at-grade crossing block movements on Sixteenth. In the 5 –to – 6 pm commute peak hour, according to current Caltrain schedules, between 10 and 12 trains preempt this crossing, and 9 to 10 in the 6 – to – 7 pm hour. This means that the Sixteenth Street leg of the intersection will be blocked for about 9 minutes or more in the 5 –to-6 pm peak and about 7.5 minutes or more in the 6 – to – 7 pm hour. In other words, movements to and from Sixteenth east of the subject intersections will be blocked between 12.5 and 15 percent of the time in these hours – and the effect of this blockage wasn't accounted for in the SEIR analysis.

7
[LC-TR-13]

Lack of Any Traffic Analysis of Intersections of Eighth – Harrison and Eighth – Bryant and Related I-80 Ramps That Are on Critical Access Routes to UCSF Hospitals

Another problem with the SEIR response regarding the Project's effects on emergency response and emergency access is that the SEIR failed to analyze the complex of the intersections of Eighth with Harrison and Eighth with Bryant and their related I-80 ramps at all. These heavily congested intersections are on the primary emergency access routes to the UCSF Mission Bay hospitals from the East Bay and from Downtown, most of the SOMA and northern San Francisco. The access route via these intersections on Eighth are particularly crucial whenever there is an overlapping Giants event that tends to preempt access via the Third/Fourth Street corridor.

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SEIR's Underestimate of Numbers of Arena Event Attendees Traveling in 5-to-6 PM Evening Commute Peak Conceals the Extent of Impact on Emergency Services and Access to UCSF Hospitals

The SEIR, based on data on time of turnstile entry to the "paid" area of the Warriors current venue, Oracle Arena and at the Barclay Center in Brooklyn (home count of the Nets), that only about 5 percent of weekday arena event attendees traveling to an event starting at 7:30 pm would be traveling on the transportation system between 5 and 6 pm (the pm commute peak hour). Our comments of July 26, 2015 and November 2, 2015 presented cogent reasons why those turnstile based assumptions grossly understate the number of attendees to a 7:30 pm start basketball game would be traveling on the transportation system in the 5-to-6 pm peak commute hour. Those reasons include:

- The offset between getting off the transit system or out of a car in a parking spot and the time of actual passage through the ticket turnstiles, even for people who go straight in after arrival,
- The offset between arena turnstile passage time and the actual duration of travel time on the transportation system that would put people on the system during the peak hour.
- The offset between turnstile passage time and actual arrival time in the arena area for those who go into nearby restaurants and bars to eat a meal or have a drink before entering the arena or those who just hang around outside to meet up with friends traveling independently, especially perhaps to exchange a ticket.

7
[LC-TR-13]
cont.

The SEIR has ignored these considerations and persisted in assuming that only a tiny fraction of arena attendees would be traveling in the 5-to-6 pm evening commute peak hour.

In our prior comments, we have pointed out that national TV broadcasts of weeknight Warrior games which typically start at 6 pm, (and possibly national broadcasts of other arena events) would also cause a very high portion of event attendees to be traveling in the 5-to-6 pm commute peak hour and requested that this be analyzed as a separate case in the SEIR. The SEIR persists in refusing to consider this scenario.

Both of these considerations – the attendees who travel to the Project area long before passing through the arena turnstiles and the attendees coming to a national TV game start – would intensify emergency service and hospital access problems in the 5-to-6 pm commute peak hour well beyond anything analyzed in the SEIR and most importantly, compound the critical emergency service and UCSF hospital access problem issues related to the Sixteenth – Seventh – Mississippi – Caltrain

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rail crossing complex as well as the Eighth – Harrison / Eighth – Bryant / I-80 ramps complex as described above.

The SEIR Refuses To Quantify Impacts on Emergency Vehicle Travel

Another commenter requested that the SEIR estimate emergency vehicle travel times with and without an event for the proposed Project. SEIR Response TR-9 refuses to do so. It claims that because the infrastructure supporting UCSF hospital facilities is currently incomplete, such a projection is it feasible. We note, however, that the SEIR has not hesitated to estimate LOS and delay times on the incomplete is roadway network for ordinary predictions of Project traffic impacts (for instance, at Owens and Sixteenth without Owens yet connected through to Mariposa). This inconsistency is an unacceptable evasion. If the SEIR is unable to estimate emergency response time, then the entire analysis of effects on all emergency services is without foundation, uselessly conclusory and inadequate.

Public Relations Response To Emergency Access Impacts Irrelevant

SEIR Response TR-9 continues, stating that strategies to provide attendees with suggested driving routes to and from the 950 parking spaces within the Project site would alleviate interference of that traffic with emergency vehicle traffic. However, most of the on-site spaces would be held by VIP season ticket holders. These drivers will determine quickly various routes that work to their own advantage to minimize their own travel time, rather than following suggested routes to fine-tune recommended event access/egress routes that avoid primary emergency vehicle routes. The notion that pre-event and post-event recommended driving routes all could be revised based on monitoring is nonsense because knowledgeable regular attendees will follow their own notion of what works best for them, not public relations advisories.

Effects of Event Coordinator and PCO Management Doubtful

The next section of SEIR Response TR-9 indicates that at the times when northbound lanes of third closed in between Sixteenth and South Streets (mostly during post-event times), PCO's would be available to open the emergency barricades to allow northbound emergency vehicle traffic through. While the PCOs may get the emergency barricades out of the way, whether they can safely clear swarming pedestrians from the “closed” street section is an open question.

The response indicates that the Event Transportation Coordinator would inform emergency service dispatchers of the dates and times when there would be temporary closure of Third Street following an event so that emergency vehicles could be advised to take routes other than Third Street. However this is not very

7 [LC-TR-13] cont.

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useful if the location of the emergency dictates that emergency services really need to travel on Third Street.

This response also observes that drivers must comply with California vehicle code article 21806 requiring the drivers to clear a way to for authorized emergency vehicles, drive to the right road curb, stop, and remain stopped until the emergency vehicle has passed. This is a nonsensical evasion of the key issue which is that when traffic is queued in gridlock, it becomes very difficult and potentially dangerous for drivers to clear the way for emergency vehicles.

For smaller events where there are fewer PCOs, the response claims that PCOs would be stationed at key locations monitoring traffic conditions and could be reassigned to respond to conflicts between event center traffic and UCSF hospital access. It is questionable that PCOs could relocate quickly enough to be of effective assistance in an emergency access matter at another location.

Effective Facilitation of Privately Driven Vehicles in Emergencies Doubtful

The next section of the ResponseTR-9 claims that persons accessing UCSF medical Center emergency room and Urgent Care Center using private vehicles rather than authorized emergency vehicles would be able to use the transit-only lanes provided for the 22 Fillmore transit priority on 16th Street. This begs the questions of how anxious non-professional drivers, probably making their first emergency trip of this nature, would know the bus lanes are there, that they're eligible to use them, or how they will safely get around the lumbering, overloaded buses using the lanes and how they would be distinguished from casual bus lane violators.

Failure to Address Access to Hospitals for Doctors, Other Caregivers and Support Staff

UCSF’s comments on the DSEIR included the observation that adverse traffic impacts on the hospitals is not limited to emergency vehicles. Doctors, other care-givers and support staff must have reasonably unobstructed access to and from the facilities at all times. Nowhere does the SEIR address this issue.

Conclusion

Because of all of the foregoing, the SEIR’s conclusions regarding the Project’s impacts on emergency access are unsupported and unsupportable. A more realistic appraisal of the Project’s impacts on emergency service and hospital access is required as is a more realistic set of mitigation measures.

7 [LC-TR-13] cont.

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Mr. Tom Lippe
November 10, 2015
Page 6

Sincerely,

Smith Engineering & Management
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Daniel T. Smith Jr., P.E.

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SMITH ENGINEERING & MANAGEMENT

November 10, 2015

Mr. Tom Lippe
Law Offices of Thomas N. Lippe, APC
201 Mission Street, 12th Floor
San Francisco, CA 94105

Subject: Responses to Comment on Draft Subsequent Environmental Impact Report for Event Center and Mixed Use Development at Mission Bay Blocks 29-32. SCN:2014112045

P15003

Dear Mr. Lippe:

This is a continuation of my November 2, 2015 review of the Responses to Comment ("the RTC") on the Draft Subsequent Environmental Impact Report (hereinafter "the DSEIR") on the above referenced Project in the City and County of San Francisco (hereinafter "the City"). As I was a commenter on the DSEIR in regard to matters involving transportation and circulation in a letter dated July 26, 2015 which was transmitted as Exhibit 1 to your comment letter of July 27, 2015, my current comments focus on the responses to my own comments and yours on that subject. In addition, several others including representatives of BARTD, Caltrans, Caltrain, UCSF and other have filed comments that parallel and reinforce our own. I address the responses to those comments as well.

My qualifications to perform this review were thoroughly documented in my letter of comment on the DSEIR dated July 26, 2015 and are incorporated herein by reference.

This continuation of my comments focuses on use of certain sites owned by the Port of San Francisco for parking in support of the Warriors Arena Project.

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The revised parking analysis, SEIR Appendix TR-X, identifies additional parking areas to the south of the Project site that are not addressed in the DSEIR. We note that the nearer site, described as 'the Nineteenth Street site' in Appendix TR-X, is located within the Port of San Francisco's Port Waterfront Land Use Plan Southern Waterfront Subarea and designated as part of the Pier 70 Waterfront Opportunity Area. The site is within the Union Iron Works Historic District (listed on the National Register of Historic Places. Building 40 within the site has been determined to be a contributing resource to the Historic District although the Port has determined that its removal would not affect the historic significance of the District. The Port currently plans to construct a 250 space parking lot on the site. SEIR Appendix TR-X assumes the Port will have done so and that the parking lot will be operational prior to completion of the proposed Project and that it will be made available for use of Project arena event attendees. However, given the complications of the Historic designation, compatibility with the Pier 70 Plans and with the Port's own purposes in developing this parking for support of Pier 70 and the Historic District, the assumptions that this parking will be developed in advance of completion of the proposed Project and will be made available to support the Project's arena event parking over the long term are extremely optimistic and inconsistent with the good faith effort to disclose impact required by
CEQA.

8
[LC-TR-17]

The other parking site identified in Appendix TR-X is located on the Southern Waterfront with its nearest corner 1.2 miles south of the nearest corner of the Project site. Portions of the site are located within the San Francisco Bay Conservation and Development Commission's (BCDC) shoreline band jurisdiction. The site is currently used for off-site storage of trailers supporting Moscone Center. The site could support development of an up to 800 space parking lot. Because of the distance from the proposed Project site, it would require shuttle bus service connections. Because considerations such as BCDC approval, development of a suitable place for relocating the off-site trailer parking that supports Moscone Center and whether parking this far from the proposed Project site and located in a remote industrial wasteland would be attractive to patrons have not been addressed, the suitability of this parking area remains speculative. Hence, Response TR-9's assumptions regarding dispersal of parking locations itself remains speculative.

Conclusion

Because of the speculative nature of these parking proposals with respect to service of events at the proposed arena, they cannot be considered clear elements that support the project or disperse its traffic.

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Sincerely,

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November 9, 2015

SENT BY U.S. MAIL AND EMAIL (Board.of.Supervisors@sfgov.org)

Budget and Finance Committee
City and County of San Francisco
Board of Supervisors
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102

RE: Comments on November 9, 2015 Agenda Item Nos. 1-4 re: Warriors Event Center at Mission Bay, Mission Bay Transportation Improvement Fund and Related Actions

Dear Budget and Finance Committee Members:

This firm represents the Mission Bay Alliance (the "Alliance") with respect to the Warriors Event Center Project ("Project"). These comments address the Final Subsequent Environmental Impact Report for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("SEIR") as well as the Budget and Finance Committee's consideration and approvals for the Project itself.

As explained in this firm's November 3, 2015, Letter to the San Francisco Municipal Transportation Agency ("MTA"), Board of Directors regarding their November 3, 2015, Agenda Item No. 13, the SEIR is defective as an informational document with respect to the analysis and public disclosure of impacts and mitigation measures regarding transportation under the California Environmental Quality Act (Pub. Resources Code, §§ 21000 et seq. ("CEQA")). Specifically, the SEIR does not describe the approval of the Mission Bay Transportation Improvement Fund ("MBTIF") as a mitigation measure. Yet the MBTIF is essential to the City's attempts to mitigate the Project's transportation-related impacts. The City's strategy of conflating analysis of the Project's design features and mitigation measures violates CEQA. (See, e.g., *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645.) The prejudice associated with the City's strategy, in addition to obscuring the City's public subsidy for the Project, is that the EIR "fail[s] to consider whether other possible mitigation measures would be more effective." (*Id*. at 657.)

The City also appears to rely on the incorporation of the MBTIF into the Project description in order to conceal from the public the City's failure to require full mitigation of the Project's impacts from the applicant. A fundamental principle of CEQA is that

O-MBA27S9

development projects should mitigate their impacts to the extent feasible. (See, e.g., Pub. Resources Code, § 21002; see also CEQA Guidelines, § 15126.4.) With respect to the Project's transportation impacts, the City deviates from this principle and instead adopts an odd, ad hoc "fair share" fee program to mitigate Project-level impacts. (*Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173 (*Anderson First*).) As a threshold matter, the SEIR never discloses to the public that it essentially relies upon "fair share" payments from the Project in order to mitigate its Project-level transportation impacts, which renders the SEIR defective as an informational document. Had the SEIR described the Project's approach to mitigating transportation impacts, it would have been apparent that the SEIR failed to disclose necessary information about this fair share program.

The payment of "fair share" impact fees may constitute adequate mitigation if the payments "are part of a reasonable plan of actual mitigation that the relevant agency commits itself to implementing." (*Id.* at 1188-1189.) The *Anderson First* decision identified the information that is required in an EIR to establish the adequacy of a "fair share" mitigation measure, which includes the following:

(i) An identification of the required improvement;
(ii) An estimate of the cost of the required improvement;
(iii) Sufficient information to determine how much the project would pay towards the improvement; and
(iv) The fees must be part of a reasonable, enforceable plan or program sufficiently tied to the actual mitigation of the impacts at issue.

(*Ibid*.)

The SEIR fails to provide this necessary information, and never even mentions the MBTIF. While the SEIR does mention the Transportation Management Plan ("TMP") and Transit Service Plan ("TSP") as addressing the Project's transportation impacts, the SEIR fails to identify the total costs of the improvements, the Project's allocated contribution, and the enforceable plan or program to contribute the Project's "fair share." The new information contained within this Committee's agenda packet regarding the MBTIF and other related matters cannot substitute for full disclosure of the selected approach to mitigation of transportation related impacts in the SEIR.

In addition, the actions on November 6, 2015, by the MTA, and this Committee's planned actions today with respect to approval of the MBTIF and the grant of street and easement vacations are contrary to California public disclosure laws with respect to economic development subsidies. California law requires the City to provide public notice and a public hearing, as well as detailed information about the purpose, nature, extent and effect subsidies, prior to commitment. (Gov. Code, § 53083.) The Budget and

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Legislative Analyst's Memorandum ("BLA Memo"), along with the SFMTA Cost Estimate spreadsheet make clear that there is an estimated revenue shortfall of $29,916,666, which will be financed through sale of SFMTA revenue bonds or other City financing source. (BLA Memo, pp. 7-8.) Payment of these Project mitigation costs by the City is an economic development subsidy, even if the loan is eventually repaid. (Gov. Code, §53083, subd. (g)(1).) Moreover, the summary vacation of streets and easements likely has value, yet no value is disclosed. Thus, the City must now comply with the substantive and procedural mandates of Government Code section 53083 prior to approving subsidies in the form of loans and other benefits included in the MBTIF and other related City actions and approvals, that provide transportation, infrastructure, public safety and other mitigation for Project impacts.

* * *

Please feel free to contact my office with any questions about the information contained in this letter.

Very truly yours,

SOLURI MESERVE
A Law Corporation

By:

Osha R. Meserve

ORM/mre

O-MBA27S9

Larry Wymer & Associates Traffic Engineering

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November 2, 2015

Tom Lippe
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201 Mission St., 12th Floor
San Francisco, CA 94105

RE: Responses to RTC - Responses to Comments on the Draft Subsequent Environmental Impact Report- Event Center and Mixed Use Development at Mission Bay Blocks 29-32 (SCN:2014112045)

Mr. Lippe,

This letter summarizes my responses to the Response to Comments published on October 23, 2015. These are the professional opinions of Larry Wymer, licensed California Traffic Engineer (#1955).

OPINION 1 - The DSEIR's Transportation and Circulation analysis does not adequately analyze the entirety of the study area impacted by the development

OPINION 2 - The DSEIR's Transportation and Circulation analysis does not analyze impacted study intersections and ramps in the SoMa and North Mission Bay areas, most notably those between Market Street and King Street

I maintain the opinion that the study area should be expanded beyond those assumed within the SEIR to the SoMa area to incorporate relevant travel patterns which would exist for both the proposed project and the "the previous proposed arena site as described within the memorandum report titled *"Travel and Parking Demand Estimates for the Proposed Event Center and Mixed Use Development at Piers 30-32 and Seawall Lot 330"* which was dated August 9, 2013.

The RTC states that my comment:

> *"...noted that because some of the basketball game attendees would be arriving from the San Francisco downtown and Financial District areas, they would be required to pass through SoMa to arrive at the project site, so that additional intersections in the SoMa area would have to be evaluated. Mode of travel and place of origin surveys of baseball game attendees conducted by the SF Giants, as well as available parking occupancy surveys, suggest that many of those game attendees that drove to work at their jobs in the Financial District and SoMa areas, tend to walk, ride transit, or take a taxi to AT&T Park, leaving their cars at their commuter parking locations in order to avoid the evening commute congestion that*
>
> *typically occurs near I-80 and AT&T Park and having to re-park their cars at game-day rates. It is likely*
>
> *that a similar condition would occur with the proposed project, with many of those working in downtown*

riding Muni or special event shuttles, and taking taxis or TNC vehicles2, such as Uber or Lyft to the event center, rather than driving and having to park again with limited space availability."

The SEIR itself, as noted within Table 1 of my original comment letter (provided below) identified several corridors to/from the SoMa neighborhood with substantial trip percentages up to 32% of project traffic.

Table 1
Project Vehicle Trip Patterns to Major Parking Facilities
North Mission Bay & South SoMa

			Trip Assignment Along Roadway			
Figure	Page	Figure Title	Seventh St s/o Townsend St	Fourth St s/o Townsed St	King St e/o Third St	from WB I-80 to Fifth St
5.2-14A	5.2-95	Project Vehicle Trip Patterns to Major Parking Facilities - Inbound Weekday PM Peak Hour - No Event and Convention Event	18% / 22%	7% / 7%	5% / 11%	8% / 7%
5.2-14B	5.2-96	Project Vehicle Trip Patterns to Major Parking Facilities- Outbound Weekday PM Peak Hour - No Event and Convention Event	19% / 19%	7% / 12%	5% / 5%	8% / 8%
5.2-14C	5.2-97	Project Vehicle Trip Patterns to Major Parking Facilities - Inbound Saturday Evening Peak Hour - No Event	20%	8%	5%	9%
5.2-14D	5.2-98	Project Vehicle Trip Patterns to Major Parking Facilities - Outbound Saturday Evening Peak Hour - No Event	20%	8%	5%	7%
5.2-14E	5.2-99	Project Vehicle Trip Patterns to Major Parking Facilities - Inbound Weekday and Saturday Peak Hours - Basketball Game Without a SF Giants Evening Game	31% / 32%	13% / 13%	9% / 11%	29% / 30%
5.2-14F	5.2-100	Project Vehicle Trip Patterns to Major Parking Facilities - Outbound Weekday Late Evening Peak Hour - Basketball Game Without a SF Giants Evening Game	31%	13%	11%	20%

Source: "Event Center and Mixed Use Development at Mission Bay Blocks 29-32" DSEIR (June 5, 2015)

It is not reasonable to discount the trips clearly represented by these trip pattern percentages established within the SEIR as irrelevant or unworthy of analysis because they may not be entirely comprised of trips within personal vehicles of those traveling through the SoMa area from the financial district. Even if attendees utilize alternate transportation such as taxis, Uber or Lyft, they will still be new trips added to the roadways which will potentially significantly impact intersections north of the area studied.

The RTC also states:

"The previously proposed center at Piers 30-32 was located at the intersection of The Embarcadero and

Bryant Street, with very different access patterns compared to the proposed project."

While true, generally the same level of traffic will be generated by both alternatives, and trips originating from the financial district would still be required to travel through the SoMa area. While admittedly traveling along some different arterials through the SoMa district, the previous analysis considered intersections within SoMa whereas the SEIR does not.

Please feel free to give me a call if you have any questions.

O-MBA27S9

Sincerely,

Larry Wymer & Associates Traffic Engineering

Larry Wymer, CA T.E. 1955

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SMITH ENGINEERING & MANAGEMENT

November 2, 2015

Mr. Tom Lippe
Law Offices of Thomas N. Lippe, APC
201 Mission Street, 12th Floor
San Francisco, CA 94105

Subject: Responses to Comment on Draft Subsequent Environmental Impact Report for Event Center and Mixed Use Development at Mission Bay Blocks 29-32. SCN:2014112045

P15003

Dear Mr. Lippe:

Per your request, I have reviewed the Responses to Comment ("the RTC") on the Draft Subsequent Environmental Impact Report (hereinafter "the DSEIR") on the above referenced Project in the City and County of San Francisco (hereinafter "the City"). As I was a commenter on the DSEIR in regard to matters involving transportation and circulation in a letter dated July 26, 2015 which was transmitted as Exhibit 1 to your comment letter of July 27, 2015, my current comments focus on the responses to my own comments, those of yourself and affiliated consultant Larry Wymer. In addition, several others including representatives of BARTD, Caltrans, Caltrain, UCSF and other have filed comments that parallel and reinforce our own. I address the responses to those comments as well.

My qualifications to perform this review were thoroughly documented in my letter of comment on the DSEIR dated July 26, 2015 and are incorporated herein by reference.

My current comments follow. They are organized in the order the City chose to respond to my and others, not in order of comments or order of importance.

Section 13.11.3, Response TR-2a

This section, in part, replies to our comments now labeled by the City as O-MBA10L4-15 and O-MBA10L4-17.

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Re MBA10L4-15:
MBA10L4-15 points out that while the DSEIR evaluated the Project's transportation *with* implementation of a Special Events Transit Service Plan in the context of *six* different event scenarios, it only evaluates the Project's transportation impacts *without* the a Special Events Transit Service Plan in the context of *only one* event scenario (without Giants game but with Basketball game). It requests the analysis *without* the a Special Events Transit Service Plan in the context of for *all six* of the event scenarios that were evaluated assuming the Special Events Transit Service Plan was in place.

There are several problems with the City's reply to this comment.

- The reply claims that the scenario of an overlapping evening game at AT&T Park with a Basketball event at the proposed Project without the Special Event Transit Services Plan taking place is a "worst-of-the-worst scenarios" that could only happen about 9 times a year, and then only if Muni were unable to deliver those services. However, with the Project located just a block from the emergency entrances to the UCSF hospitals, "worst-of-the-worst scenarios" are germane considerations for potential impacts on patient access to emergency facilities and the ordinary or special access/egress of emergency service providers.
- Despite the City's assertion that funding of Muni's Special Event Transit Services Plan is guaranteed, this funding is dependent on allocation of General Funds and discretionary transportation funds to this purpose, with such future allocations not guaranteed.
- The response also points to Mitigation Measure M-TR-18: Auto Mode Share Performance Standard and Monitoring as providing measures that could be implemented in the event Muni's Special Event Transit Services Plan is not implemented. However, many of the potential action measures in M-TR-18 are vague and conditional, and strict monitoring and enforcement is unlikely if the City through Muni has failed to deliver its promised Special Event Transit Services Plan.
- The response, although admitting no quantitative analysis of an overlapping Giants event at AT&T Park with an evening Basketball event at the Project and without implementation of the Muni Special Event Transit Services Plan was prepared, claims that the DSEIR essentially covers this situation for intersections and freeway ramps by having quantitatively analyzed the scenario of an evening Basketball Event with no Giants Event and no Special Event Transit Services Plan (Impacts TR-18 and TR-19) by virtue of having stated that these impacts would be additive to impacts in the "existing conditions without evening Giants event scenario" (Impacts TR-2 and TR-3) or to Impacts TR-11 and TR-12 (existing conditions with a Giants Event at AT&T Park). The problem with this is that the simple statement that the impacts are additive provides the public with no measure of the severity of the combined impacts.

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- The response also notes that Impact TR-20 presents Muni transit impacts for the weekday evening Basketball scenario without an overlapping Giants game or implementation of the Muni Special Event Transit Services Plan and adds text stating as follows: "Impacts to the T Third and 22 Filmore would be in addition to the significant impacts identified for the proposed project with implementation of the Muni Special Event Transit Services Plan in Impact TR-13 for conditions with an overlapping SF Giants evening game." It then concludes, "The revision does not change the analysis or conclusions presented in the SEIR." The problem with this part of the response, like that related to the impacts on intersections and freeway ramps is that the simple statement that the impacts are additive fails to inform the public of the extent of the change in severity of the impacts.
- With regard to failure to consider cumulative scenarios that lack implementation of the Muni Special Event Transit Services Plan, this failure is not remedied by addition of text to the SEIR that specify that cumulative analysis for the Basketball game scenarios include assumption of implementation of the Muni Special Event Transit Services Plan. Since the SETSP is not guaranteed funding in perpetuity and there is no assurance that Muni vehicles and personnel resources will be able to be devoted to this special service in lieu of serving regular transit needs, this change in language does not relieve the deficiency of the SEIR's failure to consider the cumulative scenario in absence of the Muni Special Event Transit Services Plan.

As a consequence of these flaws, Response TR-2a related to MBA10L4-15 is inadequate.

Re MBA10L4-17

Comment O-MBA10L4-17 is part of a stream of comment demonstrating why the DSEIR is inadequate for having unreasonably understated the amount of weekday evening arena event access travel would occur during the evening commute peak hour (see our comment now labeled O-MBA10L4-16 for related discussion). Responding to this apart from the related issues in O-MBA10L4-16 evades the compelling nature of the joint comments that the DSEIR has understated the numbers of weekday evening basketball event attendees actually traveling on the transportation system in the evening commute peak hour (5 to 6 PM).

As to the direct substance of the comment and response, the DSEIR's decision to base the analysis of weekday evening games on a presumed starting time of 7:30 was predicated on experience over 3 seasons when the Warriors were a poor to marginal team and games starting earlier in the evening (at about 6 pm) averaged only 2.5 games per season. The comment documented that based on the 2014/2015 season performance, the combined total of weeknight regular season and playoff games starting at 6 pm (the normal start time for nationally televised weeknight games played on the West Coast) could easily be 16 games per season

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over the next several years or beyond. The inadequacies of the SEIR reply are as follows:

- The reply notes that the 2 to 3 preseason and up to 16 postseason games - number variable - (and in actuality, though not admitted in the response, a number of regular season games as well) could have a 6pm weekday start time. It also admits that such games would worsen traffic in the weekday peak commute period from conditions reported in the SEIR (failing to admit also adversely impacting transit and also failing to quantify the increase in severity of impacts on weekday pm commute peak. It claims that these start times are driven by such factors as TV deals, other team's travel schedules and outcomes of postseason series that are beyond the abilities of the Warriors to control - although it is nonsense for the response to imply that those considerations make the Project's significant impacts in the circumstances of these earlier-start events any less significant.
- The response claims that the quality of the team will vary from year to year and claims that this will make the situation of large numbers of national telecasts that might start at 6 pm inconsistent over the time horizon considered in the SEIR. This is a speculation not consistent with precedent. Once a team has achieved an iconic status and national following (as the Warriors have done in the recent season with winning the league championship and the most valuable player award and with the shiny new venue comprised by the Project reinforcing that iconic status), the number of nationally televised weeknight games (6 pm starts) is likely to increase over the next several seasons, and to reoccur despite hiccups in individual seasons (witness the pervasive national attraction to the Lakers and Celtics despite several bad seasons, or, in another sport, Notre Dame football). Moreover, the project arena may be used for other major weekday capacity events such as the NCAA basketball tournament quarter- and semi-finals that would have start times dictated by national TV (that is, 6 pm). Hence, the response's conclusion that "it is unlikely that this scenario [a large number of nationally televised weekday games starting at 6 pm] *would occur on a regular basis during the time horizon addressed by the SEIR*" is non-factual, speculative and inconsistent with the good faith effort to disclose impact that CEQA demands.
- Finally, the response claims that "consistent with common practice in the transportation planning profession, the SEIR includes an analysis of the highest demand with the most frequent conditions for evening events ...". We agree that the 7:30 start time is probably the most frequent weekday evening start time likely to occur. But the SEIR is in error and misleading in proclaiming that it is consistent with common practice in the transportation planning profession to only study the high-demand situation that occurs most frequently. In fact, when a high demand scenario that is not the most frequently occurring but is one that occurs frequently enough to be significantly impactful, it is the common practice in the transportation planning

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profession to study that frequent-enough circumstance as a separate scenario on a CEQA or other analysis. A good example of this is normal transportation planning practice with respect to major regional shopping centers. Studies are performed for an average weekday, and because shopping centers have their highest travel peaks on Saturday, for an average Saturday; these are the most frequently occurring peak conditions. But because shopping center travel has its highest peaks in the Thanksgiving to day-after-New Year holiday season and because the peaks in that approximately 38 day season occur frequently enough to be significantly impactful on their own and pose impacts of different severity than on the average weekday and average Saturday, normal transportation planning practice is to evaluate holiday shopping season weekday and Saturday impacts as separate scenarios. Another example is in the Napa Valley. There, it is the practice to evaluate a project's transportation impacts for the average weekday and average Saturday (which are the most frequently occurring impact situations) and to also evaluate impacts in the "crush" (harvest) season as a separate case as well because those impacts, occurring over a four to six week period are frequent enough and of such severity in comparison to annual averages to warrant consideration as a separate impact case.

- This matter cannot be dismissed as a disagreement among experts. A compelling argument that the SEIR should have evaluated a case scenario for weeknight capacity Basketball games starting at 6 pm is the fact that the SEIR did evaluate a scenario where there are an overlapping capacity Basketball event at the proposed Project and a Giants game at AT&T Park on a weekday evening. The SEIR claims that that type of overlapping event is likely to occur only about 9 times per year. It is obvious that, if a nine times per year occurrence rate is sufficient to require the SEIR to evaluate the Project in the context of that overlapping scenario, then the SEIR should also evaluate the weeknight 6 pm Basketball start scenario which is likely to occur more than 9 times per year in many years of operation.
- The fact that two hospital emergency entrances and the entries for emergency caregivers are located within a block of the Project site make the need for the SEIR to specifically evaluate impacts and mitigation in the 6 pm weekday event start scenario all the more compelling.

Hence, considering all of the above, the SEIR should have evaluated weekday Basketball events starting at 6 pm and is inadequate for not having done so.

Section 13.11.3, Response TR-2b

This section purports to respond to our comments now labeled by the City as O-MBA10L4-2, O-MBA10L4-20, O-MBA10L4-39A and those of Caltrans (A-Caltrans-5) and others. These comments concern the SEIR's lack of analysis at intersections

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and freeway ramps that are on obvious approach and/or departure routes to/from and that are obviously or potentially capacity-challenged already.

The response begins by reciting the 6 freeway ramps and their related surface street intersections where analysis was conducted, a point not at issue in the comment. The key point of the comment is the locations the SEIR failed to analyze, not the places it did so. The reply continues, adding that the depth and approach is similar to other studies of completed and ongoing major project studies in San Francisco, and noting that the 1998 Mission Bay FSEIR did not address freeway ramp operations and queuing at all. However, what other studies did or didn't do is immaterial. What is material is what this SEIR should have studied but failed to do, and the response attempts to evade this.

The response continues for two paragraphs describing the configurations and conditions at the I 280 Mariposa off-ramp - one of the locations the SEIR did study. This section, not related to the issue of the ramps and ramp intersections that the SEIR should have but failed to study, concludes by observing that the LOS F conditions on the off ramp in the evening peak hour would be cured by Mitigation Measure M-TR-11c involving stationing a PCO at the ramp terminus intersection and waving traffic turning right to Mariposa eastbound through the traffic signal at the end of the off-ramp. But that conclusion is completely speculative. This commenter was a long term Giants season ticket holder at AT&T Park and this particular off ramp was on my normal route to the Park. The problem there is not that the signal causes queues to back up the ramp and onto the freeway mainline. It is that once a driver reaches the end of the ramp and has a green light, there is often no place to turn to on Mariposa because eastbound traffic is queued all the way back from Third Street. So placing a PCO there will be largely useless.

The response then discusses the I-80 westbound off-ramp to Fifth Street, and concludes that mitigation measure M-TR-2b, vague measures of unquantifiable effect to encourage travel by non-automotive modes would reduce the Project's impacts at this location. Again, this discussion of a location the SEIR did study is irrelevant to the issue that the SEIR should have but failed to study other locations - unless the implicit message is that, had it done so and discovered impacts, it would have just proposed vague, unquantifiable and ineffectual mitigations and declared the impacts mitigated.

Finally, after four lengthy paragraphs of largely irrelevant matter, the reply turns to the subject of the intersections and ramps that should have been studied and were not. The response notes that under CEQA Guidelines § 15130, defining the location or locations for study "*is within the lead agency's reasonable discretion*" and fundamentally claims that in defining what intersections and ramps were analyzed in this SEIR the City has exercised reasonable discretion. However, this assertion is undermined by content in the comments demonstrating that by prior and ongoing

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studies in the general area and by common observation, the City knew or should have known that certain intersections and ramps in the SOMA and Mission Bay area that are on logical access and egress routes to the Project site are capacity challenged and are likely to be adversely impacted by the Project, yet it did not study them in the SEIR. Hence, rather than exercising "*reasonable discretion*" as required by CEQA Guidelines, the City, in failing to study these locations, abused its discretion and failed to undertake the good faith effort to disclose impact demanded by CEQA.

That the City has failed to exercise reasonable discretion in this matter is reinforced by two considerations.

- Two UCSF hospitals are located a block from the Project site. Many of the intersections and ramps on logical access/egress routes to/from the Project that, at the City's discretion, the SEIR failed to analyze are on the advised emergency access routes from various points in the City and region to the hospitals and are posted on the UCSF web site. In excluding these intersections and ramps, the City clearly ignored public safety impacts of that decision.
- The State of California Department of Transportation (Caltrans) has commented on the DSEIR as follows. "Project-related queuing impacts on nearby State facilities should be analyzed" (see comment now labeled in SEIR A-Caltrans-5). Caltrans clearly believes the DSEIR has not assessed impacts on a sufficient number of freeway mainline, ramps and ramp intersections that are likely to be impacted by the Project. Caltrans opinion is due the same deference in this matter as that of the City.

The City's response continues, attempting to explain why individual or groups of intersections and ramps were excluded from study in the DSEIR. For example, the response cites 9 intersections along the Embarcadero and 15 along or east of Fourth Street that we claimed should have been studied. It claims that because the Project is shifted to its current location farther south-west from the originally proposed location on Piers 30-32, the primary routes to and from the Project site from Downtown, SOMA, the northern parts of the City and from the North Bay and the I-80 ramps would be shifted farther west, away from these intersections. But this is not true. Except for the relatively few instances in which there is a concurrent evening Giants game at AT&T park, the routes along the Embarcadero and along and east of Fourth Street remain the most effective and imageable routes to the currently proposed Project site and the parking facilities that serve it from much of the Downtown, SOMA, northern parts of the City, the North Bay and the I-80 ramps to and from the East Bay. Those paths are only likely to be altered on evenings with a concurrent Giants game. And if a massive shift of traffic further west was assumed in the City's thinking as it scoped the current SEIR and excluded the intersections along the Embarcadero and on and east of Fourth on that assumption, why didn't it add more intersections in the Eighth Street corridor (including but not

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limited to the ramps and intersections at Eighth and Harrison, Eighth and Bryant) and other intersections in the Van Ness, Franklin, Gough, Octavia corridors for example? The City has no good answer.

The response also claims that traffic passing through the Embarcadero intersections and the intersections along and east of Fourth would be less significant because a survey of baseball attendees at AT&T park *suggested* that many attendees who worked Downtown or in SOMA and drove to work left their cars at their commute parking locations and walked, used transit or took cabs to and from the ballpark. This type of data is of course irrelevant because those considerations should have already been taken into account in the SEIR's assumptions about mode split to the park from those districts. Moreover, this type behavior is likely to become increasingly uncommon as surface parking in those districts disappears and is replaced by parking garages that tend to close earlier than parkers could travel back to them at the conclusion of ballpark or arena events.

The response also cites new study of a single intersection, that of Eighth and Bryant as exemplar of why additional study intersections are not justified. This intersection is an anomalously complex intersection, and the effects of its complexities on traffic operations are difficult to replicate in theoretical delay/level of service calculations. Part of the complexity is that Eighth Street, which is one-way southbound north of Brannan becomes two-way south of Brannan. The complexity is compounded because columns that support I-80 as it crosses above Eighth between Bryant and Brannan are located in the center of Eighth Street and force southbound drivers that want to turn left at Brannan or go through or right there to pick the correct lane before departing the heavily congested intersection of Eighth and Bryant. Moreover, from this point of choice, drivers' views of what choices they must make before moving along Eighth toward Brannan are obscured by the columns and I-80 structure. In general, calculations of LOS at one location are poor predictors of delay/LOS conditions somewhere else. Moreover, in this case, the unique geometrics of the subject intersection and their unusual effects on driver behavior make the outcome of theoretical delay/LOS calculations anomalous rather than exemplar of anything elsewhere.

The City's response is clearly grasping straws to avoid analyzing the full array of intersections and ramps that, in a good faith effort to disclose impact, the SEIR should have evaluated. The City's response to the subject comment set is inadequate, and in continuing to evade analysis of potentially adversely affected freeway segments, intersections and ramps, the SEIR is defective and unsuited for certification.

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Section 13.11.3, Response TR-2c

Response TR-2c replies to our comments O-MBA10L4-21 and -22, and those of others that the DSEIR understates transit and traffic impacts because it is based on outdated traffic and transit data unrepresentative of existing conditions at the time of filing the Notice of Preparation (NOP) for the SEIR.

The initial point in the response in Response TR-2c is to deny that the baseline data relied upon in the DSEIR was stale, and to claim that the City and its consultants took steps to assure that they relied upon data as up-to-date as feasible. This assertion is factually untrue.

Here we briefly review the facts of the situation, first with regard to transit data.

- The NOP for the Project was circulated on November 19, 2014.
- The data document relied on in the DSEIR transit impact analysis for Muni operations in the City states that this data was collected in the fall of 2010 and at some time in 2011.
- The data relied upon for services in the regional transit corridors serving the City was drawn from a SFMTA TEP project published in October 2012. Obviously, the regional transit corridor data published in that study reflects observations some time before October, 2012.
- Since those times of data collection, there have been a large number of development projects completed and occupied in the C-3, SOMA and Mission Bay and yet others were approved and under construction. In addition, the recovering economy has added considerable numbers of riders to the local and regional transit systems.

Clearly the transit data relied upon in the DSEIR was stale at the time the analysis was performed and this should have been obvious to the City and its consultants. Moreover, contrary to the claim in Response TR-2c that the City and its consultants took steps to assure that they relied upon data as up-to-date as feasible, new information released as part of Response TR-2c makes obvious that this is not the case.

- Several weeks before the DSEIR was circulated, the City issued updated summarizations of Muni patronage data and regional transit service data.
- Several weeks before the DSEIR was circulated, the City had BART patronage data that was very current – actually through April, 2015.

Yet the City did not update the transit analysis in light of this data before circulating the DSEIR or even acknowledge the existence of newer data in any way in that document. This is improper.

Response TR-26 does not present in full the new transit data set, the San Francisco Planning Department Memorandum *Transit Data for Transportation Impact Studies* dated May 15, 2015. Instead it presents a composite table compiled from the

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information in the cited memorandum (Table 5.2-43) sourced to Adavant Consulting/Fehr & Peers/LCW Consulting and dated 2015. This composite table omits key data from the actual May 15, 2015 San Francisco Planning Department Memorandum (a copy of which is appended hereto as Exhibit 1) that indicate the data reflected therein were collected in 2013 for Muni operations and in 2012 for regional transit operations. This raises two key issues:

- Although the revised analysis presented in Response TR-2c is based on newer data, that data is also stale.
- In omitting, in the summary table published in Response TR-2c, the notations indicating the dates on which the newer data was collected, the response either deliberately or inadvertently misleads the public to believe the analysis in the response is based on current 2015 data, which it is not.

Although Response TR-2c mentions having BART's April, 2015 ridership data and claims to have relied on it, there is no evidence in the response of how and where the SEIR made use of it in any way. Although the City has placed the raw BART of April ridership data, ascribed to a May 1, 2015 submission by Val Menotti, Bart Chief Planning & Development Officer, on the SEIR web site, the transmittal narrative is not presented nor is its translation into the regional screenline format relied on in the SEIR. We hereby demand that the conversion of the subject BART ridership data release be provided to the Mission Bay Alliance and its consultants in the format of the regional screenline analysis of the SEIR and that the period of comment be extended beyond the date of its provision to allow adequate time for review and comment on its implications. We also note that BART's own letter of comment on the DSEIR (now Comment A-BART) in its second paragraph of comment (a paragraph the SEIR ignores rather than enumerating for response (see SEIR page COM-19) notes as follows: *"Given strong job expansion in San Francisco, BART has experienced unprecedented ridership growth (~25% over the last four years) which creates a number of peak period capacity challenges."* This statement clearly demonstrates that any reliance on regional transit data as old as 2012 (which the SEIR continues to rely on) is an inaccurate portrayal of the background conditions on which the Project imposes impacts. Response TR-2c claims to have used the April, 2015 BART data

Response TR-2c presents a reassessment of impacts on the 22 – Fillmore and the T-Third lines based on the purportedly 'new' baseline data set and finds that deficiencies on these lines are not Project impacts because the Project's contribution to ridership does not exceed 5 percent of total ridership at the maximum load points. However, this finding of lacking a ridership contribution in excess of 5 percent at the maximum load point comes about only because of the failure to consider the scenario of weekday Basketball event starts at 6 pm and the SEIR's illogical refusal to consider that there is an offset between the time attendees pass through the arena turnstiles and the time those attendees are traveling on and impacting the transportation system (see our comments O-MBA10L4-17, O-MBA10L4-7, O-

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MBA10L4-16 and our comments herein with respect to Response to Comments TR-2a and TR-2d. Had either or both the 6 pm game start scenario and the proper offset between arena turnstile passage time and time traveling on the transportation system been considered, there would be much more Project travel on the subject lines during the pm peak commute hour (5-6 pm) than is considered in the SEIR and significant impacts on these lines would be disclosed.

Response TR-2c claims that use of the updated transit data does not result in any changes to impact determination for Muni transit presented in Impact TR-4. This conclusion is incorrect and misleading because the analysis was not performed on *adequately updated* (still stale) transit ridership data and because it was performed without considering reasonable Project contributions to evening commute peak hour transit ridership (because of failure to consider a 6 pm game start scenario and failure to consider the offset between time riding transit and time passing through arena turnstiles for the 7:30 game start scenario).

Response TR-2c also opines that, since ridership figures for the 22 Fillmore and T Third routes were obtained from SFMTA and reflect City's plans for changing the 22-Filmore and completing the Central Subway by year 2020, the SEIR analysis for these lines accounts for development that occurred and is probable to occur through 2020. However, we note that the planning studies for those transit service changes on those lines were performed several years ago and the SEIR presents no clear evidence whether or not the SFMTA projections for those transit projects reasonably reflects the development boom that has occurred in the C-3, SOMA and Mission Bay in the intervening years and whether or not job infill in existing development due to a revitalized economy was reflected.

A final section of Response TR-2c attempts legalistic evasion of the issue of stale existing conditions data. This section starts by stating: "*Overall the transit impact analysis presents a reasonable representation of transit conditions based on available data for the Muni and regional transit providers and additional analysis is not required. Nor have commenters identified any flaws in the analysis that built upon the transit impact analysis.*" This statement is contrary to fact. Four year old data collected at a time when the job and development economy was just starting to begin recovering from a period of stagnation and decline is <u>clearly not representative</u> of conditions after four subsequent years of aggressive development and job boom. And for our part, in our comment letter of July 26, 2015 comprises 27 pages identifying flaws in the analysis that are compounded by the flawed and outdated transit data base assumed as "existing" conditions in the DSEIR. The response goes on to state: *"Although a somewhat different, and yet technically plausible, approach might have been possible, the City's approach is abundantly supported by substantial evidence and represents a reasonable exercise of technical judgment. In general, a lead agency's determination regarding how 'existing physical conditions without the project' could 'most reasonable be measured' is 'quintessentially a*

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discretionary determination". This statement misrepresents the issue in order to bend the framing of it to fit legal case precedents which are then cited in the response. <u>However, this is absolutely not a technical disagreement about how to go about collecting or reasonably measuring existing transit conditions data. The issue is that the old transit data the City had on hand is simply not representative of the transit conditions that existed in late November, 2014 when the NOP was circulated.</u>

With regard to the issue of stale traffic data (Comment O-MBAL4-21), Response TR-2c reiterates that the DSEIR adjusted the original counts to account for the opening of the UCSF Medical Center Phase 1 and the Public Safety Building that were nearing completion after the traffic counts were taken. This adjustment for those buildings was acknowledged in our comment O-MBAL4-21 and is not a matter of question. Response TR-2c goes on to state that subsequent traffic counts taken at three intersections in April 2015 confirm that the adjustments to the earlier traffic counts reasonably reflect the added traffic associated with the newly opened facilities cited above. This point is also not challenged in our comment, at least with respect to the three particular intersections counted. However, Response TR-2c then concludes: *"Because the adjusted volumes used in the analysis were similar to or higher than those collected in the field in April 2015, it can <u>reasonably be inferred</u>* [emphasis added] *that the traffic volumes used in the existing and existing plus project analyses also adequately reflect any changes that may be associated with newly completed projects further afield (e.g., in SoMa)."* The idea that this conclusion can reasonably inferred is utter nonsense. The DSEIR made no attempt to quantify what projects in northern Mission Bay, SOMA and the C-3 were completed after 2013 or nearing completion by early 2015, how much traffic they would generate and where most of that traffic would go and what study intersections it would affect. The intersections that were counted in April 2015 (Third with Sixteenth, Fourth with Sixteenth and Fourth with Mariposa) are indeed "*far afield*", being well to the southeast from new developments in northern Mission Bay, the SOMA and C-3 and are unlikely to be affected much by developments in those areas[1]. But other intersections in the Project's scope of study are much closer to those development areas and are likely to be considerably more affected by traffic generated by the uncounted developments there as well as increased traffic to/from those areas due to job growth within existing uses due to the improved economy. The April 2015 counts do nothing more than show the SEIR traffic adjustments for UCSF Medical Center Phase 1 and for the Public Safety Building came reasonably close to getting it right for those particular facilities and those particular intersections. They carry no inference for other new development and for other study intersections farther afield.

[1] This is because traffic from northern Mission Bay, the SOMA and C-3 would likely take other routes journeying to and from the southeast that would not pass through the 3 intersections counted in April 2015.

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Because of these considerations, Response TR-2c is inadequate and the comment that the SEIR traffic baseline is stale remains unrefuted.

Section 13.11.3, Response TR-2d

Response TR-2d concerns our comments now O-MBA10L4-7, O-MBA10L4-7, Caltrans (A-Caltrans-1) and others.

Our comments concern the fact that the DSEIR relies on turnstile data[2] on time of arrival at the Golden State Warriors current venue site (Oracle Arena) and other basketball venues to estimate how many attendees traveling to a game with a 7:30 PM start time would be traveling on the area transportation system in the 4 to 6 PM peak commute period versus in the 6 to 8 PM early evening peak shoulder period without considering the reasonable offsets between the time attendees enter the "paid" areas of the arena and the time when they were actually traveling on the transportation system.

Response TR-2d begins by stating as follows: *"For reasons explained below, the City disagrees with those comments and stands by its analysis, which reflects a number of evidence-backed, conservative assumptions. While some of the points raised in the comments seem intuitively believable, actual data from comparable situations show that the comments have exaggerated the likely numbers of people would arrive* [sic] *before 6 pm for a 7:30 pm event."*

Let us parse this introductory section of the response before moving to the further details.

Re: "*points raised in the comments seem intuitively believable",*

- It is undeniable fact that attendees occupy capacity on the transportation for a period of time that depends on the length of their journey and mode and that the period they occupy capacity on the transportation system occurs before the time they pass through the arena turnstiles.
- It is undeniable fact that even for attendees who go directly through the turnstiles into the paid section of the arena at the end of their trip to the site, there is a time offset between the time when they stop occupying capacity on the transportation system - when they debark onto the T Third platform, or the 22 Fillmore stop or find a parking place nearby or perhaps even start walking from BART, Caltrain or the other Muni-Metro lines - and the time they pass through the turnstiles.
- It is fact that some attendees wait outside the venue, perhaps to meet up with companions traveling separately (possibly to hand them their tickets, just soak in the atmosphere of the crowd arriving or for other reasons). So the

[2] The time attendees actually enter the "paid" areas of the arena.

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time these attendees occupy capacity on the transportation system is even more offset than those who enter the arena directly.

- It is fact that some choose to have drinks or meals at restaurants and bars outside the venue before entering the arena and that the offset between when these attendees occupy capacity on the transportation system and the time they pass through the arena turnstiles is even greater yet.

These considerations are not just "*intuitively believable"*; they are undeniable fact and the SEIR's analysis has failed to take them into account.

Re: "*the comments have exaggerated the likely numbers of people would arrive* [sic] *before 6 pm for a 7:30 pm event."*

The fact that time of arena event attendees' time on the transportation system is offset from the time they pass through the arena turnstiles for the reasons stated above is not a newly-discovered concept or theory; it is a fact the City and its consultants knew or should have known. It is the City's responsibility to have reasonably considered the offset factors in the SEIR and, based on that, reasonably estimated the number of arena attendees who would be impacting the transportation system during the evening commute peak hour in the case of a weekday evening arena event starting at 7:30 pm. We have made a reasoned effort to estimate how many attendee's travel to such an evening event would be offset into the evening commute peak hour. The City and its consultants have made absolutely no attempt to consider the offset factors in estimating impacts of travelers to a 7:30 pm arena event start on the transportation system in the evening commute peak hour. Hence, the City is in no position to opine that our reasonable estimate based on those offset factors is "*exaggerated"* since it didn't try to make such an estimate at all.

Re: "*the City disagrees with those comments and stands by its analysis…"*

This is an attempt to transform what is a matter of fact into a disagreement among experts in the hope that courts will grant deference to the City's opinion in the matter. However, since this is a clear matter of fact, the response is inadequate and the City has refused to make the good faith effort to disclose impact that CEQA demands.

Here we consider of details of Response TR-2d.

Response TR-2d in the last paragraph of Volume 4, page 13.11-41 states:

"As shown in the table on SEIR p. TR-37 of Volume 3 of the SEIR, multiple basketball

venues from various sources were evaluated to derive the arrival patterns at the

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> proposed project arena. Of these, two locations (Oracle Arena in Oakland and Barclays Center in Brooklyn) separately reported arrivals occurring more than one and a half hour prior to the start of a basketball game The remaining facilities reported all arrivals occurring more than one hour before to the start of a game, most likely because those occurring more than one and a half hour prior to the game represent a small fraction of the total attendance. The average percentage of arrivals occurring between 5:00 and 6:00 p.m. for those instances where arrivals occurring more than one and a half hour prior to the start of a basketball game (i.e., between 5:00 and 6:00 p.m. for a typical game starting at 7:30 p.m.) is less than 2.5 percent. Thus, to account for potential daily variability in arrival patterns, as well as the additional time it may take for attendees to enter to the event center after their arrival at the site or nearby vicinity, the SEIR conservatively assumed that more than twice as many attendees as the average (i.e., 5 percent) would arrive between 5:00 and 6:00 p.m."

This section of the response is misleading in several respects. Although Volume 3, page TR 37 presents 7 data sets obtained for 6 NBA basketball venues, examination reveals all of the data is turnstile entry data and only 3 of the data sets for 2 venues provided useful data measuring turnstile arrival times earlier more than 1.5 hours before game start time (which would definitely put travel by those attendees into the 5 to 6 pm evening commute peak period). One of those is for the Warriors at their current venue, Oracle Arena, and shows only 1 % of attendees arriving more than 1.5 hours before game start time. The other two are for the first two years of operations of the Barclays Center in Brooklyn which respectively showed 2.0 and 4.1 percent of attendees arriving more than 1.5 hours before the start of an evening basketball game.

Let us put this data in perspective. The Oakland-Alameda Coliseum complex on which the Oracle Arena sits has a total of almost 10,000 parking spaces, more than enough spaces to accommodate the entire Arena capacity attendance if attendees arrived at two persons per car occupancy. This facility is noted for tailgating before basketball games as well as before other events. In addition, persons arriving at the complex by BART can readily be observed joining friends who drove and parked at their tailgates. Because of this, the observed 1 percent of attendees turnstile count for Oracle is probably under-representative of the numbers of attendees who actually arrive on the premises more than 1.5 hours before game start by a factor of 25- to 30-fold or so.[3]

The other data sets from Brooklyn show turnstile counts at the Barclays Center more than 1.5 hours before game start at 2 percent in the initial year and 4.1 percent in the second year of operation. These percentages likely reflect in part attendees unfamiliar with a new venue and adapting their pregame behavior as they become more knowledgeable. But neither of the two years turnstile data provides any

[3] We note that it would not have been difficult or costly for the City, its consultants or the Project sponsor to have taken aerial photos of parking at the complex 1.5 hours before game start and again some time after game start, counted the cars in each, and used the relative numbers as a reasonable surrogate measure of what percentage of attendees arrive 1.5 hours before event start.

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indication of how many of the attendees actually arrived in the vicinity of the Barclays Center more than 1.5 hours before event start (hence actually traveling on the transportation system in the pm commute peak period).

The SEIR takes these three data sets, averages them, finds them to be less than 2.5 percent of total attendees, doubles that to 5 percent and assumes that becomes a "*conservative*" estimate covering all the considerations why attendees might have arrived in the Project area 1.5 hours or more before event start (hence been traveling on the transportation system in the pm peak commute hour.). The problem with this is, there is nothing that connects the turnstile percentage of attendees entering the arena more than 1.5 hours before event start to the percentage who arrive near the venue site 1.5 hours before or indicates that double that turnstile count is a "*conservative*" estimate of that latter item. The claimed "*evidence backed, conservative assumptions*" the City claims to have made in this matter has no direct quantified or quantifiable relationship to the "*evidence*" the SEIR cites. The City, its consultants or the Project sponsor could easily have easily and inexpensively measured attendee arrivals to the Warriors current venue environs (the Oakland Alameda Coliseum property) via motor vehicle and BART, but they failed to do so. By 'deeming this unnecessary' as it does on page 13.11-42, Response TR-2d expresses preference for the SEIR's own unsubstantiated guess as to how many attendees of a 7:30 pm start basketball event are actually traveling on the transportation in the pre-6 pm evening commute peak hour rather than having reliably measured data. And that guess is highly favorable to the Project since the low number of travelers in it minimize the chance of Project impacts on the transportation system being disclosed for the pm commute peak hour. The response is inadequate and inconsistent with the good faith effort to disclose impact that CEQA demands.

Section 13.11.3, Response TR-2f

Response TR-2f replies to our comments O-MBA10L4-3, O-MBA10L4-4, O-MBA10L4-23, O-MBA10L4-24, and O-MBA10L4-27. The first and fourth of these comments relate to the SEIR's failure to define the severity of the Project's traffic impacts. The second and third of these comments relate to failure to evaluate impacts at intersections under PCO control and the fifth relates to the SEIR's failure to account for the effects of train passage in the analysis of the intersection of Sixteenth, Seventh and Mississippi. Both of these latter matters also ultimately go to the issue of failure to define severity of impacts.

With regard to the failure to address changes in severity to impacts at locations already operating under conditions qualifying as impacted, the first three paragraphs of the response are padding, reciting definitions of LOS that are not in dispute in the comments. The next three paragraphs of the response on page are legalistic arguments about whether CEQA requires disclosure of distinctions in severity to

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impacts where conditions are already in a state considered impacted. Without engaging in the argument of legal matters, we can state that from an engineering perspective, distinctions in severity of impacts represented by changes in delay in the LOS/delay computations are highly significant. If the computations at a ramp or intersection already at LOS F show changes of a couple seconds of delay or so, this is hardly perceptible to drivers and is not indicative of meaningful change in severity of impact. But if the computations show changes of, for example, a half-minute or a minute or more, this is indicative of a dramatic change in severity that is highly perceptible and involves potential for queue blockages of additional lanes or upstream locations. Since the calculation procedures are capable of generating these estimates of delay and distinction of severity, this information should not be suppressed and ignored – doing so appears to be inconsistent with the good faith effort to disclose impact that CEQA demands.

The response goes on for four more paragraphs discussing the evolution of LOS computation techniques, the City's practices in use of them, and the technical meaningfulness of them. The single point in these paragraphs worthy of consideration can be summarized as follows: Calculation procedures to determine delay have been validated for instances where the subject location is below or slightly above capacity; in circumstances where capacity is greatly exceeded the validation is less strong and therefore the delay predictions are less reliable. We acknowledge this. But it is still clear if, say, an intersection or ramp is a couple seconds over the LOS F threshold in the existing condition and addition of project traffic computes to add a half minute or minute or more of delay, those are significant changes in severity. This is regardless of the fact, because of the lower reliability of the delay calculation in the LOS F zone, that if the traffic were actually added in the field and the changes in delay were measured, the results might be 27 seconds added instead of a half-minute or 55 seconds added instead of a minute.

Response TR-2f continues for another page-and-a-half of irrelevant speculation that in the future, consideration of LOS/delay may be excluded from CEQA consideration. For the present, LOS is a CEQA consideration, the City has relied on it and that portion of the response can safely be dismissed.

Response TR-2f continues, replying to the issues in O-MBA10L4-4, O-MBA10L4-23, concerning failure to evaluate LOA/delay impacts at intersections under PCO control. This comment concerns specific tables in DSEIR Volume 1 that are explicitly identified in the comments, Tables 5.2-47 and 5.2-48, respectively located on pages 5.2-172 and 5.2-174. These tables have no entries for LOS or delay at certain intersections, with the normal space for delay and LOS entries in those tables filled with the notation "PCO Controlled". The response points to completely different tables, Tables 5.2-34, 5.2-35 and 5.2-36 as having delay and LOS entries for those intersection locations. This response evades the following questions:

- What is LOS and delay at the times these intersections are PCO controlled?

- Does the SEIR conclude that PCO control mitigates significant impacts at these locations or do they remain significantly and unavoidably impacted?

The response is inadequate.

The final portion of Response TR-2f concerns the apparent lack considering the effect of Caltrain train movements on delay and LOS at the intersection of Seventh, Sixteenth and Mississippi. The response confirms that the SEIR analysis did not attempt to analyze the effect of Caltrain train movements on the LOS/delay compiled for the intersection of Seventh-Sixteenth and Mississippi. It points out that the SEIR analysis shows that with the reductions in general traffic lanes associated with the 22 Fillmore Transit Priority project, together with Project traffic, with or without overlapping Giants games, this location would be at LOS F. It then claims that, because the computation of delay is less reliable when LOS F conditions are already evident, there would be no point to attempting to further quantify the situation with respect to the effects on the subject intersection by Caltrain movements on the immediately adjacent grade crossing of Sixteenth. This absurd response ignores and attempts to evade the key point of the comment which is that had Caltrain movements been considered, there is a good prospect the analysis might have shown that traffic on Sixteenth would queue to an extent that might obstruct the intersections of Sixteenth with Owens, Sixteenth with Fourth, and even Sixteenth with Third. Since these locations are on a critical emergency and regular access route to the UCSF hospitals it is imperative that such an analysis be done (a good case for micro-simulation) and the SEIR is critically deficient for having failed to perform it.

Section 13.11.3, Response TR-2g

This response replies to our comments O-MBA10L4-3-13a and O-MBA10L4-18 which concerns the criteria the City uses to define impacts on transit.

To our comment that the ordinary transit impact criterion, ridership in excess of 85 percent of screenline capacity based on scheduled service, or by scheduled line service where an individual line evaluation is ordered, is unreasonable and unrealistic. Our reasoning is based on the fact that Muni rarely, if ever actually delivers the effective capacity of full scheduled service due to missed runs, bunching and skip-stopping and other issues related to lack of schedule reliability or on-time performance. The response describes how passengers are counted, but this clearly does not include those left standing at bus stops and LRT platforms. It also claims that the procedure takes into account the schedule reliability and on-time performance issues, but demonstrates no clear way that this is true. It also fails to address the issue that, when only a screenline analysis is performed, this assumes the excess capacity on one line is available to serve the excess ridership on another, while in reality, most people's travel patterns are well served by only a single line.

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The response then moves to a key issue, that the City has relaxed the normal threshold of impact from 85 percent to 100 percent of capacity for this particular Project. One of our criticisms is that relaxation of the normal threshold of significant impact for one favored project is inconsistent with the good faith effort to disclose impact that CEQA demands. The response's reply to this is that San Francisco already did the same for the 34th America's Cup competition event and New York City does it all the time for large special events. But the America's Cup competition is/was fundamentally different from the proposed Project in that it involved large-attendance spectator event competition occurring over just a few days in a single year; the Project involves events on over 200 days per year repeated over many, many years. Moreover, the fact that nobody noticed that the City changed the rules for that specific event does not make it right then and does not justify making a special change of the impact criteria for this Project or for any project. As regards to what New York City does for transit impact criterion with respect to large special events there, that is irrelevant to San Francisco.

A key issue identified in the comments is that while event-attendees may tolerate 100 percent-of-capacity crush loads (a justification the DSEIR used for the relaxed impact criterion), the problem is that this imposes a special misery on the people who are normal users of the affected lines at the times. Response TR-2g fails to address this relevant point. Furthermore, the issue of who the regular riders who are adversely impacted when special event attendees overcrowd and slow the operation of the affected transit lines has Social Justice implications. We explore this topic, which the SEIR fails to address, below.

Other commenters provide evidence that the community south of the Project site served by the T Third line is a disadvantaged community that is adversely impacted by the effects of transit services to the Project that create social justice issues unaddressed in the SEIR. Here we discuss transit operations considerations that lend support to the assertion that the SEIR has failed to address social justice issues.

- Regular users of the T Third will suffer unpleasant overcrowding due to event-goers in the pre-event and post-event periods, having to deal with scarcity of seating and uncomfortable sharing of standing space with boisterous pre-event goers and over-exuberant or angrily depressed (and often liquor-fueled) departing event goers.
- The City's decision to reduce the threshold of significant impact from the normal 85 percent of capacity to 100 percent of capacity exacerbates the overcrowding impacts on the regular user community.
- Special T Third shuttle services to the Project site that turn back near the intersection of Sixteenth and Third occupy time slots that could be filled by runs that serve the community to the south in this corridor.

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- Heavy boardings and alightings associated with event arrival and departure travel increase station dwell times, slowing service to normal users south of the Project site. Delays associated with shuttle operation turn-backs do the same. Also, turn-backs tend to create big gaps in service south of the Project site, as is reportedly already evidenced as the result of Giants games.
- Reconstruction of the T Third station platform near the intersection of Third with Sixteenth to accommodate Project crowds, a reconstruction that will require over a year, will inevitably delay T Third services to the disadvantaged community to the south over the duration of the construction period. At times this may even require substitution of inferior bus services.

All of these constitute transit operational reasons why the SEIR should have included a Social Justice Impact section that has not been provided.

Section 13.11.3, Response TR-2h

This response replies to our comments O-MBA5-6, O-MBA10L4-9, O-MBA10L4-10, O-MBA10L4-11. O-MBA10L4-12, O-MBA10L4-26 and O-MBA10L4-36 and those of others. The points of these comments are summarized as follows:

- The cumulative analysis, pegged to Year 2040, 25 years from now, is purely speculative.
- While a speculative look at conditions 25 years hence is not objectionable, overlooking a cumulative scenario 10 years hence misses the most active concerns of the current residents of San Francisco and the region, hence the SEIR is defective as an information document.
- Absent inclusion of a shorter time-frame cumulative analysis, the long-term cumulative analysis deludes the public as to the nearer-term cumulative consequences of the Project.
- Given the rapid pace of development approvals including frequent planning and zoning variances, a 25 year forward cumulative analysis based on General Plan development quantifications is irrelevant.
- The transportation planning forecast tool used to prepare the travel forecasts for the 2040 cumulative analysis has a greater validation error (by a factor of 2) than the threshold of Project cumulative impact.
- The City is actively planning massive changes to the transportation network that would substantially alter (seemingly to the Project's detriment and to make it more impactful) transportation conditions in the immediate Project vicinity and that are as reasonably foreseeable as the plan development totals relied on in the 2040 analysis. The SEIR has failed to assess these transportation network changes.
- The SEIR uses an improper baseline for assessing cumulative transportation impacts. It assesses the Project's impacts relative to 2040 conditions that are assumed to exist without the Project. Per CEQA, it should evaluate the Project's impacts, in combination with those of other present and

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> reasonably foreseeable future projects on the existing environment. The essential difference is that what the SEIR has done is to compare a projection to a projection. CEQA requires comparison of a joint projection to a known (the existing condition). These are different things.

Response TR-2h begins with a laborious 4-page description of the City's ordinary practices in cumulative analysis and of the SF-CHAMP transportation model. The discussion fails to address any of the issues in the comments and, in particular, the SF-CHAMP model's calibration error being double the threshold of impacts that it is being relied upon to disclose.

Response TR-2h continues in an attempt to justify the distant year cumulative analysis as follows:

> The 2040 cumulative horizon year is preferable to shorter period because the 25 - year horizon year more accurately accounts for land use changes and their associated transportation network changes, as well as other planned transportation improvements. Future growth occurs according to the vagaries of variable economic conditions, development trends, changing sponsor development priorities, and legal actions that delay or curtail proposed development, and therefore, short - term land use growth patterns cannot be accurately predicted in five - year increments. In particular, redevelopment projects such as those included in the 2040 growth forecasts (e.g., Mission Bay Plan, Candlestick Point - Hunters Point Shipyard Plan, redevelopment of Pier 70 and Seawall Lot 337), often take longer than anticipated to be completed. For example, the Mission Bay Plan was anticipated to be substantially built - out by 2015, which is the cumulative analysis year for transportation conditions in the Mission Bay FSEIR; however, construction of development is still underway and the UCSF Mission Bay campus is anticipated to be completed by 2019. Nearby, the Candlestick Point - Hunters Point Shipyard Phase II Development Plan identified completion of about 3,100 residential units by 2017; however, only about 240 of the 3,100 residential units are anticipated to be completed by the end of 2015. Construction of development part of the Pier 70 project is anticipated to continue through 2030. Thus, because larger multi - year development proposals would be built over a number of years, a future cumulative analysis year considers completion of buildout of these projects. Therefore, the cumulative impact analysis presented on SEIR pp. 5.2 - 208 – 5.2 - 232 (i.e., Impact C - TR - 1 though Impact C - TR - 10) adequately reflects the proposed project's impacts in combination with other past, present, and reasonably foreseeable future projects, and a different or additional cumulative analysis year is not warranted.

This response begs the question: If all this is true, why didn't the City use a 50, 60 or 100 year period for the cumulative analysis. The response, although seemingly filled with factual information, is nonsense relative to the issues.

Also, nothing in the response addresses the final bulleted point above or its elaboration in the original comments. CEQA requires evaluation of the

cumulative condition, including the Project in combination with other foreseeable in comparison to the existing environment, not a comparison of two hypothetical future conditions.

Section 13.11.6 – Response TR-5

This response relates to comments by BART (Comments A-BART-1, -4, -5, -7, -8, and -9) and ourselves (O-MBA10L4-19) supplying a station-level analysis of impacts on BART that was critically missing in the DSEIR. This station-level analysis provides completely new information, including Table 13.11-2, and conclusions that were previously missing. Consequently, the information should be available for review for the full 45 day review period in Recirculated Draft status under CEQA.

Section 13.11.6 – Response TR-8

This response replies to our comment O-MBA10L4-28 concerning truck loading. The response indicates that new (un-numbered and untitled) figures showing truck turning templates for each loading are presented with the response. It is not evident if and where the said figures are actually provided. Hence, the response is inadequate.

Section 13.11.6 – Response TR-9

This reply responds to our comment and those of others regarding access impacts to emergency vehicles attempting to reach UCSF hospitals located in the immediate vicinity of the Project. The response consists of a repetition and elaboration of the description of the ineffectual measures that prompted the comment rather than proposing clear mitigation to resolve the issues. We note that the critical traffic LOS deficiency at the intersection of Seventh, Sixteenth and Mississippi, which is on advertised emergency routes to the UCSF hospitals is unmitigated and that the SEIR analysis at this location has failed to consider the effects of train crossings of Sixteenth Street, which could cause traffic on Sixteenth to queue into the intersections of Sixteenth with Owens and Sixteenth with Fourth, which are intersections crucial to hospital access, both emergency and normal. The response is inadequate.

Section 13.11.6 – Response TR-10

This response, which concerns construction impacts, is merely a reprise of the inadequate information and findings in the DSEIR that prompted our and several other comments. Of particular concern is the failure to address construction impacts associated with the reconstruction of the LRT station by the Project site on Third

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Street, a reconstruction which poses impacts for ordinary traffic on Third Street, emergency vehicle traffic on Third Street and for operations of the T Third Muni LRT line itself, which may impose social justice transportation impacts on the disadvantaged communities located further south in the T Third LRT corridor. These social justice impacts in specific have not been addressed.

Conclusion

Due to all of the foregoing and other issues not yet addressed in these comments, the SEIR transportation and circulation section is inadequate and unsuited for certification.

Sincerely,

Smith Engineering & Management
A California Corporation

Daniel T. Smith Jr., P.E.

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July 27, 2015

Ms Tiffany Bohee
OCII Executive Director
c/o Mr. Brett Bollinger
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1650 Mission Street, Suite 400
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warriors@sfgov.org

Re: **Transportation Impacts** - Comments on Draft Subsequent Environmental Impact Report for the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 (Warriors Arena Project); San Francisco Planning Department Case No. 2014.1441E; State Clearinghouse No. 2014112045

Dear Ms Bohee and Mr. Bollinger:

This office represents the Mission Bay Alliance ("Alliance"), an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project"). The Mission Bay Alliance objects to approval of this Project and certification of this EIR for the reasons stated in this letter.

This letter incorporates by reference, as comments on the DSEIR, all of the comments on the DSEIR contained in the July 23, 2015, letter report authored by traffic engineer Dan Smith (attached as Exhibit 1), and the July 21, 2015, letter report authored by traffic engineer Larry Wymer (attached as Exhibit 2).

I. THE DSEIR IS NOT SUFFICIENT AS AN INFORMATIONAL DOCUMENT WITH RESPECT TO TRANSPORTATION IMPACTS.

A. The DSEIR Fails to Assess the Project Traffic Impacts on the Entire Affected Environment.

The DSEIR studies Project-induced increases in congestion and delay, for both incremental and cumulative impacts, at twenty-two (22) intersections and six (6) freeway ramps, as shown in Table 1.

Table 1

Incremental Impact Assessment (With Implementation of the Special Events Transit Service Plan)	Incremental Impact Assessment (Without Implementation of the Special Events Transit Service Plan)	Cumulative Impact Assessment
Intersections at DSEIR, p. 5.2-18, Table 5.2-34 p. 5.2-121, Table 5.2-35 p. 5.2-123, Table 5.2-36 p. 5.2-172, Table 5.2-47 p. 5.2-174, Table 5.2-48	Intersections at DSEIR, p. 5.2-192, Table 5.2-53 p. 5.2-193, Table 5.2-54	Intersections at DSEIR, p. 5.2-214, Table 5.2-59 p. 5.2-217, Table 5.2-60.
Freeway ramps at DSEIR, p. 5.2-133, Table 5.2-37 p. 5.2-133, Table 5.2-38 p. 5.2-134, Table 5.2-39 p. 5.2-181, Table 5.2-49 p. 5.2-181, Table 5.2-50	Freeway ramps at DSEIR, p. 5.2-198, Table 5.2-55 p. 5.2-198, Table 5.2-66	Freeway ramps at DSEIR, p. 5.2-221, Table 5.2-61 p. 5.2-221, Table 5.2-62

Remarkably, the DSEIR fails to disclose the criteria the City used to select these intersections and freeway ramps. More importantly, the DSEIR fails to disclose the criteria the City used to *exclude* other intersections and freeway ramps. The omission of this fundamentally important information renders the DSEIR so legally inadequate as an informational document that it frustrates CEQA's goal of providing the public with a meaningful opportunity to comment on the DSEIR.

Also, as shown in the attached report from traffic engineers Larry Wymer and Dan Smith, the DSEIR omitted from its area of study numerous intersections and freeway ramps that will also suffer potentially substantial increases in traffic congestion and delay. The omission of these intersections and freeway ramps from the DSEIR's analysis of the Project's effect on traffic also renders the DSEIR so legally inadequate as an informational document that it frustrates CEQA's goal of providing the public with a meaningful opportunity to comment on the DSEIR.

How did this happen? The DSEIR simply states: "The traffic impact assessment for the proposed project was conducted for 23 study intersections and six freeway ramp locations in the vicinity of the project site" (DSEIR, p. 5.2-72),[1] with no further explanation. The same is true for

[1]The DSEIR actually studies 22 intersections, not 23, in the tables listed in footnote 1.

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the six freeway ramps. (DSEIR, p. 5.2-74.)

The DSEIR does inform the reader that:

> The impacts of the proposed project on the surrounding transportation network were analyzed using the Transportation Impact Analysis Guidelines issued by the Planning Department in 2002 (SF Guidelines 2002), which provides direction for analyzing transportation conditions and in identifying the transportation impacts of a proposed project.

(DSEIR, p. 5.2-69.) These Guidelines provide:

> 2. Project Setting
> The setting information shall be presented immediately following the Project Description as a discrete chapter or report section. The goal is to provide a brief but complete description of existing transportation infrastructure and conditions in the vicinity of the project. Normally, the described vicinity is a radius between two blocks and 0.25 mile, however, a larger area may be determined in the scoping process. *The specific perimeters of the study area, for both setting and project impact analysis, are to be confirmed as part of the approval for the scope of work.*

(Transportation Impact Analysis Guidelines (October 2002), pp.6-7 (italics added).) Based on this text, the reader would expect to find the criteria and rationale for delimiting "the specific perimeters of the study area" in the Scope of Work which the City approved pursuant to these Guidelines as a prerequisite to preparation of the DSEIR. Unfortunately, this expectation is disappointed, because the City-approved Scope of Work is also silent on the topic. (DSEIR, Appendix TR, pp. TR-8 to TR 14.)

Consequently, the City must revise the DSEIR to include an analysis of the Project's congestion and delay impacts on the excluded intersections and freeway ramps and then recirculate the Revised DSEIR for at least 45 days for public review and comment.

B. The DSEIR Fails to Disclose the Severity of the Project's Impacts on Intersections and Freeway Ramps which the Project Will Cause to Deteriorate to Level of Service (LOS) F.

As explained by Dan Smith in his attached report, the DSEIR fails to disclose the severity of the Project's congestion and delay impacts on intersections and freeway ramps which the Project will cause to deteriorate to Level of Service (LOS) F.

The DSEIR discloses the Project will cause significant congestion and delay impacts at

numerous intersections and freeway ramps in the "study area," where Project-induced increases in congestion and delay will cause deterioration in Level of Service (LOS) to LOS E or F. (See intersections and freeway ramps listed in footnote 1.) For the intersections and freeway ramps in the "study area" where Project-induced increases in congestion and delay will cause deterioration to LOS E, the DSEIR provides a measurement of the degree of severity of the significant impact (i.e., average delay for intersections or average density for freeway ramps).

However, for the intersections and freeway ramps in the study area where Project-induced increases in congestion and delay will cause deterioration to LOS F, the DSEIR fails to provide a full measurement of the degree of severity of the significant impact. Instead, for intersections pushed to LOS F, instead of presenting a measure of average delay, the DSEIR provides a "greater than" measurement of "80 seconds per vehicle." (See 5.2-74 and Tables cited above.) For freeway ramps pushed to LOS F, instead of providing the average density, the DSEIR provides no measurement of "existing plus project" density. Instead, the severity of the Project's impacts at intersections and freeway ramps pushed to LOS F has no upper limit, and remains undisclosed, other than to note that "demand exceeds capacity." (See 5.2-75, Table 5.2-19 and Tables cited above.)

Thus, the DSEIR fails to comply with CEQA because, beyond making the binary determination that the Project's impacts on these intersections and freeway ramps are significant, the DSEIR fails to disclose the severity of these significant impacts. (See *Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 831 ["The conclusion that one of the unavoidable adverse impacts of the project will be the 'increased demand upon water available from the Santiago County Water District' is only stating the obvious. What is needed is some information about how adverse the adverse impact will be"].) Consequently, the City must revise the DSEIR to include this missing information, then recirculate the Revised DSEIR for at least 45 days for public review and comment.

C. The DSEIR Fails to Identify the Significance and Severity of the Project's Impacts on Intersections Where the Project Will Use Parking Control Officers.

In its impact assessment tables for "Intersection Level of Service - Existing plus Project Conditions - With a SF Giants Evening Game – Weekday PM and Saturday Evening Peak Hour" (DSEIR, p. 5.2-172, Table 5.2-47) and "Intersection Level of Service - Existing plus Project Conditions - With a SF Giants Evening Game – Weekday Evening and Late Evening Peak Hour" p. 5.2-174, Table 5.2-48), the DSEIR measures the significance of impacts by the use of Level of Service (LOS) and delay measurements.

But for two intersections, King and Third streets, and King and Fourth streets, the DSEIR provides no LOS or delay measurements, and therefore, no information on whether the Project's congestion and delay impacts on these intersections are significant, and if so, the severity of these significant impacts.

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Instead, the DSEIR indicates that the Project calls for posting Parking Control Officers (PCOs) at these intersections at the times indicated. But the adoption of a mitigation measure cannot substitute for disclosing whether the Project's impacts on these intersections are significant or their severity.[2]

D. The DSEIR's Analysis of the Project's Construction-Related Traffic Congestion and Delay Impacts Is Legally Flawed.

The DSEIR's analysis of the Project's construction related traffic congestion and delay impacts is legally flawed because it is based on invalid criteria, it fails to lawfully assess the Project's cumulative construction period impacts, and it improperly defers the development of mitigation measures to reduce the Project's construction-related traffic impacts to less than significant.

The DSEIR states "Construction related impacts generally would not be considered significant due to their temporary and limited duration." (DSEIR, p. 5.2-46.) This statement is placed in the section describing the DSEIR's thresholds of significance. Therefore, it appears this conclusion reflects a policy decision rather than a fact-based assessment.

In the impacts analysis section, the DSEIR states: "Construction related impacts generally would not be considered significant due to their temporary and limited duration." (DSEIR p 5.2-111). Elsewhere the DSEIR quantifies the construction period's "temporary and limited duration" as 26 months. (DSEIR, p. 5.2-112.) However, the notion that the DSEIR can determine the Project's construction related traffic impacts to be "less than significant" based primarily on their temporary duration is legally and logically flawed because from a cumulative standpoint, the Project's construction impacts are part of an essentially permanent, not temporary, condition of ongoing construction in this part of San Francisco.

Indeed, the DSEIR's discussion of the Project's cumulative construction period impacts recognizes there are numerous other construction projects planned in Mission Bay and that the construction related traffic impacts of these projects will combine with this Project's construction related impacts. (DSEIR, p. 5.2-210 (Impact C-TR-1.)

However, the DSEIR's discussion of the Project's cumulative construction period impacts

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[2]CEQA does not permit an agency to simply adopt mitigation measures in lieu of fully assessing a project's potentially significant environmental impacts because mere acknowledgment that an impact would be significant is inadequate; the EIR must include a detailed analysis of "how adverse" the impact would be. (*Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645, 655-56' *Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal.App.4th 1109, 1123*; Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 831.)

is flawed because it is constrained by several artificial limits.

First, as discussed in section I.A above, the impact assessment is limited to impacts and intersections and freeway ramps within the artificially restricted geographic "study area."

Second, the impact assessment considers only construction projects within the Mission Bay neighborhood without regard to whether other "past, present, or reasonably foreseeable future projects" may be "closely related" because their impacts may combine with the Project's impacts.

Third, the DSEIR's analysis of cumulative traffic impacts for *construction* of the project only references a handful of foreseeable projects located very close to the Project, and the DSEIR's discussion of these projects is solely in terms of whether their construction periods overlap with construction of this Project, as if the operational impacts of other "past, present, and reasonably foreseeable future projects" are not "closely related." (See DSEIR, p. 5.2-10 and 11.)[3] This is incorrect because "closely related" simply means the other projects' impacts may combine with the Project's impacts.

Table 3 in the attached report by Larry Wymer shows that it is possible to include a broader range of projects - across both time and area - in the assessment of the Project's cumulative construction period traffic impacts, and that when this is done, there are many Projects that will be under construction or operational in the period before, during, and after construction of the Project whose effects will combine with those of the Warriors Arena construction. Therefore, the Project's construction impacts are part of an essentially permanent, not temporary, condition of ongoing construction in this part of San Francisco and the DSEIR errs by basing its determination of significance on the "limited duration" of the construction period. (DSEIR, p. 5.2-212.)

The second basis for the DSEIR's less-than-significant determination is the DSEIR's statement that "construction activities would be ... required to be conducted in accordance with City

[3]These projects are:
• 1.13 million gsf of UCSF LRDP projects under construction at the Mission Bay Campus, including, the UCSF East Campus project on Blocks 33/34,
• Construction of Bayfront Park,
• realignment of Terry A. Francois Boulevard,
• construction of a neighborhood park on the north side of Mariposa Street east of Owens Street,
• the Exchange project on Mission Bay Block 40,
• the Family House project on Mission Bay Block 7 East,
• the Residential and Hotel project on Mission Bay Block 1,
• the 360 Berry Street project on Mission Bay Block N4/P3, and
• Caltrain's Peninsula Corridor Electrification Project.

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requirements." (DSEIR, p. 5.2-212.) This vague assurance is meaningless because the DSEIR does not specify what these " City requirements" are, does not specify a performance standard that these City requirements would either impose or achieve, and presents no evidence that these unspecified "City requirements" are likely to avoid significant cumulative construction related traffic effects. (See *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 95 (*CBE*); *Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359; 1394 (*Gentry*).

The third and final basis for the DSEIR's less-than-significant determination is "Improvement Measure I-TR-1: Construction Management Plan and Public Updates." The DSEIR suggests this Plan would help avoid significant cumulative construction related traffic effects. (DSEIR, p. 5.2-212.) But it is improper for the DSEIR to rely on Improvement Measure I-TR-1 to help reduce impacts to less than significant because it is not identified as a mitigation measure necessary to substantially reduce significant Project impacts; therefore, it is not enforceable. (CEQA Guideline 15126.4(a)(4).)

Finally, the DSEIR fails to quantify the Projects' construction period impacts, presumably based on its qualitative conclusion that unspecified "City requirements" and "Improvement Measure I-TR-1" will avoid significant impacts. This puts the cart before the horse.[4]

E. The DSEIR's Analysis of the Project's Operational Traffic and Transit Congestion and Delay Impacts Is Legally Flawed.

1. The DSEIR understates traffic and transit volumes in the PM peak period of 4:00 to 6:00 PM by using "time of arrival" at the Arena as a proxy measurement for "time of travel."

In modeling traffic and transit impacts, the DSEIR assumes only 5% of basketball game attendees will be traveling in the "study area" in the PM peak period of 4:00 to 6:00 p.m. Table 5.2-21 states that 5% of arrivals are expected before 6:00 p.m. for 7:30 p.m. weekday basketball games; another 11% will arrive between 6:00 and 6:30 p.m. (DSEIR, p. 5.2-83.) This data is based on turnstile counts of people entering the arena.

As explained by Dan Smith in his attached report, this proxy measurement does not provide reliable data as to when game or event attendees are actually traveling through affected intersections or freeway ramps or using affected transit routes:

> These considerations are so obvious to any transportation professional knowledgeable about sports stadium transportation issues that the analysis presented

[4]See footnote 2 above.

> in the DSEIR cannot be said to constitute the good faith effort to disclose impact that the California Environmental Quality Act demands. Since the entire analysis of transportation impacts flows from the estimate of trip generation and time-of-travel analysis, the entire transportation impact component of the DSEIR must be redone to accurately reflect the time that event attendees are actually traveling on the transportation system instead of the time they enter the event venue.

(Exhibit 1, p. 3.)

> In his analysis, Mr. Smith found:
>
> it seems highly probable that as much as one-third or more of the trips that the DSEIR considers to take place in the 6 to 7 PM period and the 7 to 8 PM period would actually be on the transportation system in the more critical 5 to 6 PM commute peak hour. That would put 7,466 event-related travelers on the transportation system in the 5 PM to 6 PM period instead of the 1,866 assumed in the DSEIR, a difference that would likely result in transportation impacts not disclosed in the DSEIR and/or intensification of impacts and mitigation needs of those that were disclosed.

(Exhibit 1, p. 3.)

Even just applying common sense to the DSEIR's data indicates that many or most of the 11% that the DSEIR says arrive at the turnstile between 6:00 and 6:30 p.m. would be traveling to the event in the PM peak period of 4:00 to 6:00 pm. This minimal adjustment alone changes the assumption on which the modeling is based from 5% to 16% traveling in the "study area" in the PM peak period of 4:00 to 6:00 pm. As shown by Mr. Smith, this minimal adjustment more than doubles the Project's contribution of traffic to affected intersections, and would change the DSEIR's determination from less-than-significant to significant at some intersections. (Exhibit 1, p. 4.)

This issue was flagged in public scoping comments on the DSEIR. (DSEIR, p. 2-15.) Yet, somehow, the DSEIR did not adjust its reliance on turnstile data to develop a reliable metric to use instead. Instead, the DSEIR offers a series of weak or irrelevant rationales for its methodology, including:

> because basketball games typically start at 7:30 p.m. a higher percentage of inbound event attendees would travel to the event center during the 6:00 to 8:00 p.m. period than during the 4:00 to 6:00 p.m. commute peak period.

(DSEIR p. 5.2-71); and

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> the SF Guidelines do not include travel demand characteristics for the specialized uses (e.g., sports events, conventions, and other events) that would take place at the proposed event center. Similarly, standard trip generation resources, such as the Institute of Transportation Engineer's Trip Generation Manual, do not include sufficiently detailed trip generation data for such specialized uses. Therefore, the travel demand for the event center component of the proposed project was based on the estimated attendance, as well as information on current travel characteristics of Golden State Warriors basketball attendees at the Oracle arena in Oakland.

(DSEIR, p. 5.2-81); and

> The data are based on information provided by the Golden State Warriors for their current facility, which was then adjusted to provide for earlier arrival patterns based on comparable information collected at similar NBA facilities to account for the increased availability of retail and restaurant uses at the proposed project site compared to Oracle Arena in Oakland. A summary of this data is provided in the travel demand technical memorandum included in Appendix TR.

(DSEIR, p. 5.2-82.)[5]

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[5] In the "Travel Demand Methodology and Results" section of Chapter 5.2, the DSEIR states:

> The Basketball Game scenario reflects the travel demand of the office, retail and restaurant uses, plus an evening basketball game. The transportation impact analysis of the Basketball Game scenario was conducted for four analysis hours (weekday p.m., weekday evening, weekday late evening, and Saturday evening), for conditions without and with an overlapping SF Giants evening game at AT&T Park.
>
> Table 5.2-21 presents the expected temporal distribution of arrival and departure patterns for basketball game attendees of the proposed project. The data are based on information provided by the Golden State Warriors for their current facility, which was then adjusted to provide for earlier arrival patterns based on comparable information collected at similar NBA facilities to account for the increased availability of retail and restaurant uses at the proposed project site compared to Oracle Arena in Oakland. A summary of this data is provided in the travel demand technical memorandum included in Appendix TR. Based on this information, it was assumed that approximately 5 percent of arrivals to a basketball game would occur during the p.m. peak hour (5:00 to 6:00 p.m.), and up to 66 percent of arrivals would occur during the evening peak hour (7:00 to 8:00 p.m.). Similarly, up to 70 percent of the departures would occur during the late evening peak hour (9:00 to 10:00 p.m.).

A discussion and summary of the data from other venues than Oracle is provided in DSEIR, Appendix TR, at pp. TR-21 to TR-25 and TR-37 [Appendix A, p. A-9]. The table at page TR-37 provides time of arrival data from, in addition to Oracle, six purportedly "comparable" venues, namely: Icon Venue Group, Houston, Phoenix, Sacramento, Brooklyn (2013-2014), and Brooklyn (2014-2015). An interesting fact about this table is that the data for 4:00 to 6:00 p.m. arrivals at four of these six venues (i.e., Icon Venue Group, Houston, Phoenix, Sacramento) is "included in" the data for later time periods. So, in fact, the only purportedly comparable venue for which the DSEIR presents supporting data is Brooklyn (2013-2014 and 2014-2015). The venue with the largest proportion of arrivals in the 4:00 to 6:00 p.m. period is Brooklyn (2014-2015), with 4.1%.

In short, the City and the Warriors failed to develop reliable accurate, reliable data on the key variable in the entire transportation analysis, i.e., the number of people traveling to events in the peak PM time period when traffic and transit crowding are at their worst. A lead agency "must use its best efforts to find out and disclose all that it reasonably can." (CEQA Guideline, § 15144.)

The above quoted rationales do not excuse this failure. The scoping comments flagging this issue were submitted to the City between November 19, 2014, and December 19, 2014, during the middle of the basketball season. (DSEIR, p. 2-8 and 2-9, 2-15.) The Warriors played fifty-seven (57) games between December 19, 2014, through the close of the regular season on April 15, 2015.[6] There are thirty (30) teams in the NBA.[7] That means there were approximately eight-hundred and fifty five (i.e., 15 x 57 = 855) regular season games played in the 2014-2015 regular season after December 19, 2014. In the playoffs following the regular season, sixteen teams played a total of seventy-nine games after April 15, 2015.[8]

Therefore, both the Warriors and the City had ample opportunity to conduct market research by interviews and exit polling of a sample of the hundreds of thousands of fans attending these games to discover how far in advance of arriving at the turnstile they traveled through the traffic and transit impacted area surrounding the venue. The City's and Warriors' decision to pass up this opportunity after being informed of the issue does not satisfy their duty to use best efforts to find out

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> Event staff for basketball games would be expected to arrive between 4:30 and 5:00 p.m. and would be on post prior to the gate opening time; event staff would leave between 11:00 and 11:30 p.m.

(DSEIR, p. 5.2-82.)

[6]http://www.nba.com/warriors/schedule,

[7]http://www.nba.com/teams/?ls=iref:nba:gnav

[8]http://www.nba.com/playoffs/

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and disclose all they reasonably can.

Indeed, the City was fully aware of the need to gather information more relevant to fans "time of travel" than turnstile counts and made some efforts to do so. But it failed to disclose that there are alternative metrics for "time of travel" or the results of its efforts in this regard. For example, an email exchange dated January 12, 2015, between the City's EIR consultant (ESA) and City Planning officials includes data on arrivals before 6:00 p.m. at the Arco Arena parking lot for a 7:00 p.m. Sacramento Kings game and arrivals before 6:00 p.m. in buildings for other NBA venues. Thus, the City was aware of other measurements (e.g., parking lot entry rather than turnstile counts) that could more accurately predict peak PM period travel to games.

Also, the arrival numbers cited in this email exchange show 14% arriving at the Arco Arena parking lot before 6 p.m. for one 7 p.m. game and 9% arriving before 6 p.m. in buildings for other NBA venues. These numbers indicate the DSEIR's assumption that 5% of fans will be traveling through the study area before 6 p.m. for 7:30 p.m. games is vastly understated. Yet the DSEIR fails to reference these numbers.

The DSEIR must be revised to provide accurate peak period traffic data and analysis

2. The DSEIR's Analysis of the Project's Cumulative Impacts Does Not Comply With CEQA.

a. The 5% threshold of significance for impacts at intersections and freeway ramps operating at LOS E or F violates CEQA.

For intersections operating at LOS E or F, the DSEIR uses a threshold of significance of "a contribution of 5 percent or more to the traffic volumes at the critical movements operating at LOS E or LOS F" (DSEIR, p. 5.2-73-74.) For freeway ramps operating at LOS E or F, the DSEIR uses a threshold of significance of "a contribution of 5 percent or more to the traffic volumes on the ramp." (DSEIR, p. 5.2-74.)[9]

No rationale for the 5% threshold is provided. Indeed, blind reliance on this number ignores the law governing the assessment of cumulative impacts, which requires a fact based assessment that takes into account the severity of preexisting impacts. A one-size-fits-all "ratio" violates CEQA. (See *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 120 ("*Communities*"); *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d

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[9]"The project may result in significant adverse impacts at intersections that operate at LOS E or LOS F under existing conditions depending upon the magnitude of the project's contribution to the worsening of the average delay per vehicle." (DSEIR, p. 5.2-45.)

692, 720-21 (*Kings County*). *Communities* and *Kings County* teach that the significance of a cumulative impact depends on the environmental setting in which it occurs, especially the severity of existing environmental harm, and that focusing on the magnitude (i.e., "ratio") of the Project's incremental contribution to severe preexisting harm is inconsistent with the definition of cumulative impacts under CEQA.[10]

b. The year 2040 baseline for assessing the significance of the Project's cumulative impacts violates CEQA.

The DSEIR assesses the Project's incremental traffic and transit impacts and its cumulative traffic and transit impacts pegged to the year 2040, which is 25 years in the future.[11] While the Alliance supports such long range forecasting in general, as used in this DSEIR the year 2040 baseline for assessing the significance of the Project's cumulative impacts is misleading, for two reasons.

First, this approach overlooks the Project's cumulative traffic and transit impacts pegged to its first 1 to 10 years of operations. This time period is of immediate interest to the citizens of San Francisco because the traffic mess predicted by the DSEIR will be upon them then. And who among them know whether they will even be in the City by the year 2040. Thus, while including a year 2040 baseline is not in itself objectionable, the omission of a baseline 5 to 10 years in the future

[10](*Communities,* 103 Cal.App.4th at p. 120 ["[T]he relevant question"... is not how the effect of the project at issue compares to the preexisting cumulative effect, but whether "any additional amount" of effect should be considered significant in the context of the existing cumulative effect. [footnote omitted] In the end, the greater the existing environmental problems are, the lower the threshold should be for treating a project's contribution to cumulative impacts as significant. [footnote omitted]"]; *Kings County,* 221 Cal.App.3d at pp. 720-21 ["They contend in assessing significance the EIR focuses upon the ratio between the project's impacts and the overall problem, contrary to the intent of CEQA.... We find the analysis used in the EIR and urged by GWF avoids analyzing the severity of the problem and allows the approval of projects which, when taken in isolation, appear insignificant, but when viewed together, appear startling. Under GWF's 'ratio' theory, the greater the overall problem, the less significance a project has in a cumulative impacts analysis. We conclude the standard for a cumulative impacts analysis is defined by the use of the term 'collectively significant' in Guidelines section 15355 and the analysis must assess the collective or combined effect of energy development"].)

[11]"Future 2040 cumulative traffic volumes were estimated based on cumulative development and growth identified by the San Francisco County Transportation Authority SF-CHAMP travel demand model, using model output that represents Existing conditions and model output for 2040 cumulative conditions." (DSEIR, p. 5.2-110.)

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renders the DSEIR informationally defective.

Second, by using a baseline projected to the year 2040, the DSEIR inflates the denominator in the 5% "ratio" it uses to determine the significance of Project cumulative impacts at LOS E and F intersections, thereby masking actual significant effects. (See Exhibit 2 (D. Smith), p. 25.)

c. The DSEIR's use of a "projection" based approach to the Project's cumulative impacts is misleading.

The DSEIR states that:

> Future 2040 cumulative traffic volumes were estimated based on cumulative development and growth identified by the San Francisco County Transportation Authority SF-CHAMP travel demand model, using model output that represents Existing conditions and model output for 2040 cumulative conditions. .... The 2040 cumulative traffic volumes take into account cumulative development projects in the project vicinity, such as the build-out of the Mission Bay Area, completion of the UCSF Research Campus and the UCSF Medical Center, the Mission Rock Project at Seawall Lot 337, Pier 70, etc., as well as the additional vehicle trips generated by the proposed project.

(DSEIR, p. 5.2-110.)[12]

The DSEIR presents no evidence supporting the DSEIR's assumption that the year 2040 projection is reliable for predicting future traffic and transit demand, other than the vague assertion that the "SF-CHAMP travel demand model, using model output that represents Existing conditions and model output for 2040 cumulative conditions ... has been validated to represent future

[12]In the section titled "Approach to Cumulative Impact Analysis" (DSEIR 5.1-6, § 5.1.5), the DSEIR asserts that the CEQA Guidelines provide "two approaches to a cumulative impact analysis ... (a) the analysis can be based on a list of past, present, and probable future projects producing related or cumulative impacts; or (b) a summary of projections contained in a general plan or related planning document can be used to determine cumulative impacts. The projections model includes individual projects and applies a quantitative growth factor to account for other growth that may occur in the area." (DSEIR, p. 5.1-7.) The DSEIR asserts that "The analyses in this SEIR employ both the list-based approach and a projections-based approach, depending on which approach best suits the individual resource topic being analyzed ... the Transportation and Circulation analysis relies on a citywide growth projection model that also encompasses many individual projects anticipated in and surrounding the project site vicinity, which is the typical methodology the San Francisco Planning Department applies to analysis of transportation impacts." (DSEIR, p. 5.1-7.)

transportation conditions in San Francisco." (DSEIR, p. 5.2-110.) But, as explained by Mr Smith, the SF-CHAMP model's margin of error is greater than the 5% threshold used to determine the significance of Project cumulative impacts at LOS E and F intersections. (See Exhibit 2 (D. Smith), p. 25.) Therefore, SF-CHAMP is the wrong tool for the task.

Further, given the sheer number of developments in this area of the City (see table 3 of Mr. Wymer's report) and the breakneck pace of their approval and implementation, the projection approach is misleading, not informative. Therefore, the DSEIR's cumulative impact assessment must use a list based approach to forecast reasonably foreseeable travel demand, and do so in a meaningful time frame.

F. The DSEIR's Methodology for Analyzing Project Impacts on the Transit System Is Legally Flawed.

The DSEIR summarizes its methodology for analyzing Project Impacts on the transit system, as follows:

> The impact of additional transit ridership generated by the proposed project on local and regional transit providers was assessed by comparing the projected ridership to the available transit capacity at the maximum load point. Transit "capacity utilization" refers to transit riders as a percentage of the capacity of the transit line, or group of lines combined and analyzed as screenlines across which transit lines travel. The transit analyses were conducted for the peak direction of travel for each of the analysis time periods.

(DSEIR, p. 5.2-75.)

This methodology contains two flaws. First, it suffers from the same unwarranted and unsupported assumptions about basketball fans' time of travel to the arena for games described above. Second, the DSEIR's use of transit screenline and route capacities is also misleading and unsupported.

1. The DSEIR's use of transit screenline and route capacities is misleading and unsupported.

For its Project specific (or incremental) transit impact analysis, the DSEIR uses the following thresholds of significance:

> The proposed project was determined to have a significant transit impact if project-generated transit trips would cause downtown or regional screenlines, and, where applicable, directly affected routes, operating at less than its capacity

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> utilization standard under existing conditions, to operate at more than capacity utilization standard. For Muni, the capacity utilization standard is 85 percent for conditions without an event at the project site, and 100 percent for conditions with an event at the project site. For regional operators, the capacity utilization standard is 100 percent for conditions without and with an event at the project site.

(DSEIR, p. 5.2-76, 77.)

For its cumulative transit impact analysis, the DSEIR uses the following thresholds of significance:

> Under 2040 cumulative conditions, the proposed project was determined to have a significant cumulative impact if its implementation would cause the capacity utilization at the Muni and regional screenlines and/or corridors within the screenlines to exceed the capacity utilization standard noted above for conditions without and with an event at the project site, or if its implementation would contribute considerably to a screenline or corridor projected to operate at greater than the capacity utilization standard under 2040 cumulative plus project conditions (i.e., a contribution of 5 percent or more to the transit ridership on the screenline or route). In addition, if it was determined that the proposed project would have a significant project-specific transit impact under existing plus project conditions, then the impact would also be considered a significant cumulative impact under 2040 cumulative conditions.

(DSEIR, p. 5.2-76, 77.)

For both Project specific (incremental) and cumulative impacts, the DSEIR uses "capacity utilization standards" as baselines against which to measure the Project's impacts. Capacity utilization standards are specific percentages of the theoretical maximum capacity of a transit screenline or transit line.

For Project specific (or incremental) thresholds of significance for Muni, the DSEIR uses two different capacity utilization standards against which to measure the Project's impacts. For conditions without an event at the Project site, the capacity utilization standard is 85 percent of maximum theoretical capacity of the transit screenline or line. For conditions with an event at the Project site, the capacity utilization standard is 100 percent of maximum theoretical capacity.

If the question to be answered by the transit impact analysis is whether the Project will inflict significant suffering on people riding Muni, why does the DSEIR use two different baselines for its impact assessment. If exceeding 85% inflicts suffering without an event, then exceeding 85% will inflict suffering with an event.

The DSEIR does not examine this use of inconsistent baselines. However, the June 21, 2013, Planning Department Memorandum "Transit Data for Transportation Impact Studies" (at Appendix-TR, p. TR-624) states:

> The SFMTA Board has adopted an "85 percent" capacity utilization standard for transit vehicle loads. In other words, transit lines should operate at or below 85 percent capacity utilization. The SFMTA Board has determined that this threshold more accurately reflects actual operations and the likelihood of "pass-ups" (i.e., vehicles not stopping to pick up more passengers). The Planning Department, in preparing and reviewing transportation impact studies, has similarly utilized the 85 percent capacity utilization as a threshold of significance for determining peak period transit demand impacts to the SFMTA lines.

(DSEIR, Appendix-TR, p. TR-624.) Thus, the 85 percent capacity utilization threshold apparently has nothing to do with the suffering of Muni's passengers; it simply reflects the reality of Muni's operations. And even if 85% of capacity is the break point at which Muni drivers tend to refuse to pick up more passengers due to overcrowding, then using 100% of capacity as a threshold of significance is entirely unsupportable.

For its cumulative impact analysis, the DSEIR uses the same baselines and thresholds of significance discussed above plus one more if the Project "would contribute considerably to a screenline or corridor projected to operate at greater than the capacity utilization standard under 2040 cumulative plus project conditions (i.e., a contribution of 5 percent or more to the transit ridership on the screenline or route)."

The 5% threshold for determining a Project's contribution to be "considerable" is stated at Appendix-TR, p. TR-625. No rationale for this number is provided. A Project contributing 1% more capacity utilization to a screenline that usually operates at 84%, resulting in a total capacity utilization of 85%, may not contribute considerably to a significant impacts, while a Project contributing 1% more capacity utilization to a screenline that usually operates at 94%, resulting in a total capacity utilization of 95%, may well contribute considerably to a significant impact. A one-size-fits-all "ratio" violates CEQA. (See *Communities, supra; Kings County, supra*.)

G. The DSEIR Unlawfully Defers the Development of Mitigation Measures.

The DSEIR sketches out a number of concepts for mitigating the Project's significant transportation effects where it defers the development of specific mitigation measure until a future date. The DSEIR's deferral all of the mitigation measures listed below in this section does not meet CEQA requirements to identify specific mitigation measures in the Draft EIR so the public may meaningfully review and comment on them. These measures violate CEQA's requirements for deferred mitigation because the DSEIR does not specify binding performance standards by which

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the measures' success can be judged, there is no evidence it is impracticable to develop and include the specific measures in the DSEIR, there is no evidence the measures will be effective, there is no evidence the measures are feasible, there is no evidence the measures will be implemented because the Project Sponsor may deem them infeasible, and the measures are not enforceable. (See *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 95 (*CBE*); *Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359; 1394 (*Gentry*).

The listed measures are qualified by language such as "if feasible" or "could include" (e.g., Measure M-TR-2b). Such qualifications render the measures illusory, unenforceable, and ineffective for purposes of the DSEIR's claim of substantial reductions in impact or reductions in impact to less-than-significant levels. (See *Federation of Hillside & Canyon Associations v. City of Los Angeles* (2000) 83 Cal.App.4th 1252, 1260-1262; *Lincoln Place Tenants Association v. City of Los Angeles* (2005) 130 Cal.App.4th 1491, 1508 ["mitigating conditions are not mere expressions of hope..."].)

Even the listed measures that include performance standards (e.g., Measure M-TR-18) do not require they be achieved. For example, Measure M-TR-18 only requires that the Project Sponsor "work to achieve" the performance standards. CEQA requires that deferred mitigation measures include binding performance standards.

- Mitigation Measure M-TR-2b: Additional Strategies to Reduce Transportation Impacts. (DSEIR, p. 1-15.)

- Mission Bay FSEIR Mitigation Measure E.47: Transportation System Management Plan. (DSEIR, p. 1-17.)

- Mitigation Measure M-TR-5a: Additional Caltrain Service. (DSEIR, p. 1-18.)

- Mitigation Measure M-TR-5b: Additional North Bay Ferry and/or Bus Service. (DSEIR, p. 1-19.)

- Mitigation Measure M-TR-9a: Crane Safety Plan for Project Construction. (DSEIR, p. 1-20.)

- Mitigation Measure M-TR-9d: Event Center Exterior Lighting Plan. (DSEIR, p. 1-21.)

- Mitigation Measure M-TR-11b: Participation in the Ballpark/Mission Bay Transportation Coordinating Committee. (DSEIR, p. 1-22.)

- Mitigation Measure M-TR-11c: Additional Strategies to Reduce Transportation Impacts of Overlapping Events. (DSEIR, p. 1-23.)

- Mitigation Measure M-TR-13: Additional Muni Transit Service during Overlapping Events.

(DSEIR, p. 1-24.)

- Mitigation Measure M-TR-14: Additional BART Service to the East Bay during Overlapping Events. (DSEIR, p. 1-24.)

- Mitigation Measure M-TR-18: Auto Mode Share Performance Standard and Monitoring. (DSEIR, p. 1-25.)

H. The DSEIR's Discussion of Transportation Impacts Is Incomplete.

The DSEIR analyzes transportation impacts in two broad scenarios: with and without implementation of the Special Events Transit Service Plan.

In the scenario "With Implementation of the Special Events Transit Service Plan" the DSEIR analyzes two narrower scenarios: with and without a Giants game. In each Giants game scenario, the DSEIR analyzes three narrower scenarios: no event, convention event, and basketball game. The result is six scenarios applied to ten different transportation resources, as shown in Table 2.

Table 2

With Implementation of the Special Events Transit Service Plan					
Without Giants game			With Giants game		
No event	Convention event	Basketball game	No event	Convention event	Basketball game
TR-1 Construction - Traffic LS TR-2 Traffic - Intersections SUM TR-3 Traffic - Freeway Ramps SUM TR-4 Transit - Muni LS TR-5 Transit - Regional - Caltrain SUM TR-6 Pedestrian LSM TR-7 Bicycle LS TR-8 Loading LS TR-9a Construction Helipad LSM TR-9b Const. Lights Helipad LS TR-9c Operation Helipad LS TR-9b Operation Lights Helipad LSM TR-10 Emergency Vehicle Access LS			TR-1 Construction - Traffic LS TR-11 Traffic - Intersections SUM TR-12 Traffic - Freeway Ramps SUM TR-13 Transit - Muni LSM TR-14 Transit - Regional -All SUM TR-15 Pedestrian LSM TR-16 Bicycle LS TR-17 Emergency Vehicle Access LS		

In the scenario "Without Implementation of the Special Events Transit Service Plan"

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the DSEIR analyzes only one narrower scenario: without a Giants game and with a basketball game. The result is one scenario applied to ten different transportation resources, but the omission of the other five scenarios, as shown in Table 3.

Table 3

Without Implementation of the Special Events Transit Service Plan	
Without Giants game	
Basketball Game	
TR-1 Construction - Traffic	LS
TR-18 Traffic - Intersections	SUM
TR-19 Traffic - Freeway Ramps	SUM
TR-20 Transit - Muni	SUM
TR-21 Transit - Regional	SUM
TR-22 Pedestrian	LSM
TR-23 Bicycle	LS
TR-24 Loading	LS
TR-25Emergency Vehicle Access	LS

Since the scenario "Without Implementation of the Special Events Transit Service Plan" is likely enough to justify including it in the DSEIR, the DSEIR should include the other five omitted scenarios.

In addition, the DSEIR's cumulative impact analysis does not even inform the reader if it is performed for the "with" or "without" scenario for "Implementation of the Special Events Transit Service Plan." The cumulative impact analysis should include both scenarios, and should inform the reader which is which.

Thank you for your attention to this matter.

Very Truly Yours,

Thomas N. Lippe

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Tiffany Bohee
c/o Brett Bollinger
Re: Mission bay Alliance comments on the Warriors Arena Project DSEIR: **Transportation Impacts**
July 27, 2015
Page 20

List of Exhibits

1. July 23, 2015, letter report authored by traffic engineer Dan Smith.

2. July 21, 2015, letter report authored by traffic engineer Larry Wymer.

3. January 12, 2015, email exchange dated between the City's EIR consultant (ESA) and City Planning officials.

4. December 2013, Final Report, San Francisco Transportation Plan 2040, prepared by San Francisco County Transportation Authority.

5. Final Report Appendices, Appendix B: White Paper, TRANSPORTATION NEEDS, San Francisco Transportation Plan 2040, prepared by San Francisco County Transportation Authority.

6. Final Report Appendices, Appendix C: CORE CIRCULATION STUDY, San Francisco Transportation Plan 2040, prepared by San Francisco County Transportation Authority.

7. Final Report Appendices, Appendix K: SF TRAVEL AT A GLANCE, San Francisco Transportation Plan 2040, prepared by San Francisco County Transportation Authority.

8. May 21, 2013, San Francisco Transportation Plan Update, SPUR Annie Alley Forum, San Francisco Transportation Plan 2040, prepared by San Francisco County Transportation Authority.

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Received at Committee - 11/9/15

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November 9, 2015

Budget and Finance Committee
San Francisco Board of Supervisors
c/o Ms. Angela Calvillo
Clerk of the Board of Supervisors
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4689

Re: November 9, 2015 Budget and Finance Committee, Warriors Arena Project CEQA Findings, Resolution 150994

Dear Committee Members:

This office represents the Mission Bay Alliance ("Alliance"), an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project"). The Mission Bay Alliance objects to approval of the Project for the following reasons.

1. The Project SEIR does not comply with CEQA, as described in the Alliance's many comments on the SEIR submitted to the Successor Agency. Over the last three months, the Mission Bay Alliance has reviewed and commented on material inadequacies in the Project's expedited environmental review process. This Committee and the Board of Supervisors cannot fully consider and adequately mitigate the Project's many significant impacts without the benefit of an EIR that complies with CEQA. 1 [LC-ERP-1]

The CEQA findings adopted by the OCII and the SFMTA are, therefore, premature and unsupported, as explained in the Alliance's comments on the Draft Subsequent Environmental Impact Report ("DSEIR"), as well as letters submitted following the Final SEIR. 2 [LC-ERP-3]

Please refer to the following letters previously submitted and incorporated by reference: 3 [LC-ERP-6]

From the Law Offices of Thomas N. Lippe:

(1) November 2, 2015, letter to OCII and Planning Department re: Comments on Final Subsequent Environmental Impact Report for the Warriors Arena Project Re Air Quality, Transportation, Hydrology, Water Quality, Biological, and Noise Impacts, including:

(2) As Exhibit A thereto, a November 2, 2015, letter from John Farrow, including

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(3) As Exhibit 1 to Exhibit A, November 2, 2015, letter report from Paul Rosenfeld and Jessie Jaeger of SWAPS to Thomas Lippe, re Comments on the Event Center and Mixed-Use Development Project at Mission Bay Blocks 29-32.

(4) As Exhibit C thereto, a November 2, 2015, report by Greg Gilbert, Autumn Wind Associates.

(5) As Exhibit F thereto, a November 2, 2015, letter from Dan Smith.

(6) As Exhibit G thereto, a November 2, 2015, letter from Larry Wymer.

(7) As Exhibit H thereto, a November 2, 2015, letter from Matt Hageman.

(8) As Exhibit I thereto, a November 2, 2015, letter from Erik Ringelberg and Kurt Balasek.

(9) As Exhibit J thereto, a November 2, 2015, letter from Erik Ringelberg.

(10) As Exhibit K thereto, a July 16, 2015, BSK Technical Memorandum Regarding the Proposed Warrior Arena Wetland Features by Erik Ringelberg and Kevin Grove.

(11) As Exhibit L thereto, an October 29, 2015, Draft Waters and Wetland Delineation Report Proposed Mission Bay Development, Blocks 29-32 San Francisco, California, by Erik Ringelberg and Kevin Grove of BSK Associates.

(12) November 2, 2015, letter to OCII re: Warriors Arena Project: Violation of Variance Requirement.

(13) November 5, 2015, letter to Planning Commission re: Warriors Arena Project: Planning Codes section 321 and 305, General Plan Inconsistency and CEQA Findings.

(14) July 24, 2015, letter regarding impacts on Hydrology, Water Quality, and Biological Resources, including:

(15) July 21, 2015, letter report authored by Matt Hageman, P.G., C.Hg., QSD, QSP;

(16) July 21, 2015, letter report authored by Erik Ringelberg, B.Sc., M.Sc., Ph.D candidate; and Kurt Balasek, PG, CHg, QSD.

(17) July 25, 2015, letter regarding impacts on Noise and Vibration, including:

(18) July 24, 2015, letter report authored by acoustic engineer Frank Hubach.

3 [LC-ERP-6] cont.

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(19) July 26, 2015, letter regarding impacts on Air Quality, including:

(20) July 19, 2015, letter report authored by Greg Gilbert; and

(21) July 20, 2015, letter report authored by Paul Rosenfeld, Ph.D, and Jessie Jagger.

(22) July 27, 2015, letter regarding impacts on Transportation, including:

(23) July 23, 2015, letter report authored by traffic engineer Dan Smith; and

(24) July 21, 2015, letter report authored by traffic engineer Larry Wymer.

From the law firm of Soluri Meserve:

(25) November 3, 2015, Letter to the San Francisco Municipal Transportation Agency, Board of Directors regarding their November 3, 2015, Agenda Item No. 13.

(26) November 2, 2015, Letter to the OCII and San Francisco Planning Department regarding the Environmental Review for Warriors Event Center and Mixed-Use Development at Mission Bay Blocks 29-32.

(27) October 20, 2015, letter to the San Francisco Planning Department regarding Supplemental Comments on Environmental Review for Warriors Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 - Updated Soil and Screening Levels.

(28) October 7, 2015, Letter to the San Francisco Planning Department regarding Supplemental Comments on Environmental Review for Warriors Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 - Clean Water Act 404 and CZMA Consistency.

(29) July 9, 2015, Letter to the San Francisco Planning Department regarding Notice of Incomplete Record for Warriors Event Center Environmental Review.

(30) 9. July 26, 2015, letter regarding impacts on Geology and Soils, Recreation, Hazardous Materials, , Greenhouse Gases, Wind and Shadow, Utilities and Service Systems, Public Services, Energy and Urban Decay, including:

(31) July 22, 2015, letter report authored by air quality professionals Patrick Sullivan, CPP, REPA, and Joh Henkelman, regarding Greenhouse Gas Emissions;

(32) July 22, 2015, letter report authored by geotechnical engineer Lawrence Karp, CE, CEG, regarding Geology and Soils impacts;

3 [LC-ERP-6] cont.

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San Francisco Public Works
Bureau of Street-Use and Mapping
Re: Warriors Arena Project Subdivision Map (Project ID # 8593)
November 6, 2015
Page 4

(33) July 22, 2015, letter report authored by engineering geologist Marin Cline, CEG, and hydrogeologist Kurt Balasek, PG, CHg, QSD, regarding Geology and Soils impacts);

(34) July 22, 2015, letter report authored by geotechnical engineer Martin Cline, GEG and Kurt Balasek, PG, CHg, QSD, regarding Hazardous Materials; and

(35) July 22, 2015, letter report authored by economist Philip King, Ph.D., regarding Urban Decay.

(36) June 29, 2015, letter regarding the City's failure to comply with AB 900 record keeping procedures and the resultant ineligibility of the Project for AB 900's litigation fast track procedures.

From the Brandt-Hawley Law Group:

(37) October 13, 2015, letter to the OCII the potentially-feasible alternate site adjacent to Pier 80.

(38) November 3, 2015, letter to the OCII regarding inadequate CEQA findings and inadequate SEIR responses to comments relating to land use plan inconsistencies, potentially-feasible project alternatives, and cultural resources.

(39) 8. July 26, 2015, letter regarding impacts on Land Use, Aesthetics, Cultural Resources, and Project Alternatives.

From Thomas Lippe, Susan Brandt-Hawley, Patrick Soluri, and Osha Meserve jointly:

(40) July 26, 2015, letter regarding EIR tiering;

(41) July 26, 2015, letter regarding litigation streamlining under AB 900.

3 [LC-ERP-6] cont.

2. The Project does not comply with the Mission Bay South Redevelopment Plan as discussed in my November 5, 2015, letter to the Planning Commission attached as Exhibit 1.

4 [LC-PP-1]

3. The Project does not comply with the San Francisco General Plan as discussed in my November 5, 2015, letter to the Planning Commission attached as Exhibit 1.

5 [LC-PP-3]

4. The Project does not comply with Proposition M, as codified at Planning Code Section 320 et seq and Planning Commission Motion 17709 , and is it is ineligible for allocation of any office space under Planning Code section 321 and Motion 17709, as discussed in my November 5, 2015, letter to the Planning Commission attached as Exhibit 1.

6 [LC-PP-2]

5. The Board of Supervisors cannot find that "Impact AQ-4: Potential conflicts with

7 [LC-AQ-1]

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San Francisco Public Works
Bureau of Street-Use and Mapping
Re: Warriors Arena Project Subdivision Map (Project ID # 8593)
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BAAQMD's 2010 Clean Air Plan" is less than significant with mitigation because the City and Project Sponsor refuse to agree to BAAQMD's offset fees per Mitigation Measure M-AQ-2b. (See Exhibits 4 and 5.) There is also no evidence that the "Option 2" offset idea within Mitigation Measure M-AQ-2b is feasible. There are too many unanswered questions regarding Option 2, including lack of assured verification of offsets to ensure their effectiveness, and lack of assurance that offset sources are available in the quantity required. BAAQMD's offset program at least answers some, if not all, of these questions.

The Commission cannot find that all feasible mitigation measures that would substantially reduce "Impact AQ-1: Impacts of Criteria Air Pollutants from Construction" have been adopted as required by CEQA section 21081, because there is no evidence that paying the offset fees demanded by BAAQMD is infeasible. Also, as discussed above, there is no evidence that the "Option 2" offset idea within Mitigation Measure M-AQ-2b is feasible; therefore, it is not an adequate substitute for BAAQMD's offset program. This also applies to:

- Impact AQ-2: Impacts of Criteria Air Pollutants from Project Operations; and
- Impact C-AQ-1: Project Contribution to Regional Air Quality Impacts.

7 [LC-AQ-1] cont.

6. The Commission cannot find that feasible alternatives that would substantially reduce the Project's significant impacts have been adopted. The SEIR does not analyze the alternate site proposed by the Alliance near Pier 80, and did not circulate that analysis for public comment. Neither OCII nor this Commission has the basis to make conclusory findings rejecting the alternative. Among the relevant facts not considered in the findings is that the site is three times as large as would be required for the Event Center project and need not utilize any of the City-owned property nor any particular configuration of the privately-owned lots should there be an unwilling seller. There is no evidence provided that the site could not be acquired within a reasonable time period.

Case law confirms that assuring a site's consistency with city plans and zoning is within the City's power. Similarly, the scheduling of transportation services to the site can be increased, and the findings provide no studies to back up conclusory statements regarding traffic, air quality, hydrology, or water quality impacts. Since only a third of the site is needed to accommodate the event center, all of the impacts (if shown to have concern after sufficient technical review) can be avoided or mitigated. As stated in the Alliance letter to OCII that proposes this site for consideration as an alternative, here incorporated by reference, the SEIR failed to consider a potentially-feasible off-site alternative and must be revised and recirculated to do so before findings of infeasibility may be considered or adopted. The site suggested by the Alliance is potentially feasible and deserving of study.

8 [LC-ALT-1]

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San Francisco Public Works
Bureau of Street-Use and Mapping
Re: Warriors Arena Project Subdivision Map (Project ID # 8593)
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Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

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November 5, 2015

President Rodney Fong and Members of the Planning Commission
City and County of San Francisco
1650 Mission Street, Suite 400
San Francisco, CA 94103

Re: Warriors Arena Project: Planning Codes section 321 and 305, General Plan Inconsistency and CEQA Findings.

Dear Commission President Fong and Members of the Commission:
:

This office represents the Mission Bay Alliance ("Alliance"), an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project"). The Mission Bay Alliance objects to approval of this Project and certification of the Project SEIR.

1. The Project is ineligible for any office space allocation under Planning Code section 321 and Motion 17709.

a. This Project does not comply with the Design for Development.

Resolution 14702 and Motion 17709 require that any project in the Alexandria District must comply with the Mission Bay South Design for Development in order to be eligible for any office space allocation. (See Motion 17709, p. 9, Finding 9,[1] Finding 10[2].)

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[1]"This schedule of phased authorization will ensure that, in accord with Resolution 14702, adequate office space can be allocated to those projects within the Development District that are determined to be in compliance with the D for D requirements, while also complying with Section 321 of the Planning Code forbidding exceedance of the square footage available for allocation in any given annual cycle."

[2]"Pursuant to Resolution 14702, the Commission is charged with determining whether a project seeking authorization conforms to applicable standards in the D for D Document, which supersedes the criteria set forth in Section 321 and other provisions of the Code except as provided in the MBS Plan. The projects previously approved were determined to have met the MBS Redevelopment Plan and the D for D Document standards and guidelines, and requirements for childcare, public art, and other provisions of the Plan Documents, and retain

EXHIBIT 1

This Project does not comply with the Design for Development, as evidenced by the many amendments that the Successor Agency made to the Design for Development to accommodate the Project. Therefore, it is ineligible for allocation of any office space under Planning Code section 321 and Motion 17709.

b. This Project is inconsistent with the Redevelopment Plan.

A basic premise of the Planning Commission decisions in Resolution 14702 and Motion 17709, and a fundamental rationale for "superseding" section 321's guidelines in favor of the Redevelopment Plan and Redevelopment Plan documents, were the Commission's findings that the Redevelopment Plan met standards set in section 321, the San Francisco Master Plan, the priority policies in Planning Code section 101.1, and the requirements of redevelopment law. In short, in order to be eligible for the office space allocation available under motion 17709, the Project must be consistent with the Redevelopment Plan.

This Project is inconsistent with the Redevelopment Plan because, as demonstrated in the November 2, 2015, letter from Susan Brandt-Hawley, my co-counsel for the Alliance (attached as Exhibit 1), this Project is not an allowable secondary use under the Redevelopment Plan. However, in the alternative, as shown in my November 2, 2015, letter (attached as Exhibit 2), if the Project is an allowable secondary use under the Redevelopment Plan, then it requires a variance under section 305 of the Plan before Project approval.

2. The office space allocation requested for this Project exceeds the amount authorized for the Alexandria District.

In 1986, San Francisco voters passed Proposition M, a referendum limiting the amount of office space that can be approved each year. Codified as Section 321 of the San Francisco Planning Code, it provides that "[n]o office development may be approved during any approval period if the additional office space in that office development, when added to the additional office space in all other office developments . . . would exceed 950,000 square feet." (San Francisco Planning Code § 321(a)(1).) Office space is defined to mean "construction . . . of any structure" that has the "effect of creating additional office space."

The current Project plans call for the construction of two office towers on Mission Bay South Parcels 29 and 31, comprising 309,436 square feet and 267,486 square feet of office space, respectively, for

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that design approval, along with all previously imposed conditions of approval. Future projects requesting authorization will be brought before the Commission for design review in accord with Resolution 14702, and upon determination by the Commission that such proposals are in conformity with the D for D and other applicable requirements, office space may be allocated for such new structures from the unassigned amount available in the Development District."

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a total of 576,922 square feet of office space. (Executive Summary, p. 2.)

In 2008, the Planning Commission adopted Motion No. 17709. Motion 17709 approved a cumulative total office space allocation for all projects within the Alexandria Development District of 1,350,000 gross square feet. (Motion 17709, p. 9, Finding 9.) Of that amount, 1,222,980 was allocated before the adoption of Motion 17709. (Motion 17709, p. 5, Finding 4, Table 1.) Therefore, at the time Motion 17709 was proposed, 227,020 gsf of unallocated office remained for allocation. (Motion 17709, p. 9, Finding 9, Table 4.)

According to Motion 17709, there were three pending projects at that time, at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street. Motion 17709 states that these projects represented 665,880 square feet of "potential office space." (Motion 17709, p. 5, Finding 5, Table 2.) Motion 17709 also states an intent to authorize only 57% of "potential office space" for actual office space after 10/18/09, 53% of "potential office space" for actual office space after 10/18/10, and 50% of "potential office space" for actual office space after 10/18/11.

Motion 17709 does not state how much actual office space was approved for the three pending projects at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street. The Planning Department's Office Development Annual Limitation Program record (attached as Exhibit 3) shows "0*" in the "size" column for these projects. (Exhibit 3, p. 19.) Assuming the Planning Commission allocated office space to these projects at the 57% ratio, that amount is 379,552 gsf (665,880 x .5). **This amount exceeds the remaining office space available for allocation at that time (i.e., 227,020 gsf).**

According to Motion 17709, there were two additional areas where the applicant indicated an intent to develop "potential office space," namely, MB South Blocks "29 and 31" and "33-34." (Motion 17709, p. 5, Finding 6, Table 3.) Motion 17709 states that these possible future projects represented 915,700 square feet of "potential office space," with Blocks "29 and 31" at 515,700 GSF. (Motion 17709, p. 5, Finding 6, Table 3.)

Assuming, again, that the Planning Commission allocated office space to these areas at the 50% ratio, that amount is 457,850 GSF (915,700 x .5), with 257,850 allocated to Blocks "29 and 31" at 257,850 gsf (515,700 x .5).

The Draft Motion proposed for adoption at today's hearing states that "Blocks 29-32 are included in the Development District and have been allocated a total of 677,020 sf of office space pursuant to Motion No. 17709." (Draft Motion, p. 3.) This is incorrect in at least four ways.

First, it is unclear and unstated how Planning staff derived the 677,020 gsf number.

Second, after approval of the office space allocation for the three pending projects at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street, there was no office space left in the

Alexandria District to allocate - as discussed above.

Third, even if one adds together the "potential office space" numbers for Blocks 29-32 in Motion 17709, the sum is 1,119,999 gsf, and 50% of that is only 560,000 gsf. The two office towers proposed for this Project require 576,922 gsf. (See Executive Summary, pp. 1-2: 309,436 gsf in the South tower and 267,486 gsf in the 16th Street tower). This number exceeds 560,000 gsf.

Fourth, when one adds the 25,000 gsf for office space in the arena building (see SEIR p. 3-17), the office space for this project totals 601,922 gsf (i.e., 576,922 plus 25,000), which also exceeds 560,000 gsf.

Fifth, to the extent there was any office space left for Motion 17709 to allocate after approval of the office space allocation for the three pending projects at 600 Terry Francois, 650 Terry Francois, and 1450 Owens Street, Motion 17709 allocated only 257,850 gsf to Blocks 29 and 31 (i.e., 50% of 515,700) pursuant to Finding 6, Table 3. **The 576,922 gsf of office space in the two office towers for this Project are located in Blocks 29 and 31; and the total of 576,922 gsf vastly exceeds the 257,850 gsf that may arguably be available.**

Because the office towers called for in the Project exceed the allowable office space cap, Section 321(a)(1) and Motion 17709 require the Planning Commission to deny approval of the Project and of the requested allocations of office space.

3. General Plan Inconsistency: BAAQMD.

San Francisco Master Plan Policy 4.1 states:

> Support and comply with objectives, policies, and air quality standards of the Bay Area Air Quality Management District.
> Regionwide monitoring of air quality and enforcement of air quality standards constitute the primary means of reducing harmful emissions. The conservation of San Francisco's air resource is dependent upon the continuation and strengthening of regional controls over air polluters. San Francisco should do all that is in its power to support the Bay Area Air Quality Management district in its following operations:
> - Monitoring both stationary and mobile sources of air pollution within the region and enforcing District regulations for achieving air quality standards.
> - Regulating new construction that may significantly impair ambient air quality.
> - Maintaining alert, permit, and violations systems.
> - Developing more effective controls and method of enforcement, as necessary

The attached letter from the Bay Area Air Quality Management District (Exhibit 4) and the City's response (Exhibit 5) show that this Project does not comply with this policy.

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The Alliance previously commented on the Draft SEIR (Comment AQ-7) that the per ton charge for emission offsets is too low to achieve complete offset of the Project's emissions. The City's response to comments on this point is cagey, but it does suggest what now turns out to be fact - that the BAAQMD agreed with the comment - because the response states:

> SF Planning has been in communication with BAAQMD with regard to its suggestion that a higher fee may be warranted to offset project emissions to a less than significant level and found that BAAQMD could not establish that an increased rate beyond that of the Carl Moyer Program plus a five percent administrative fee could meet the "rough proportionality" standard required under CEQA.

(RTC, p. 13.13-67.) The RTC's rationale for contending that a higher offset fee would not meet the "rough proportionality" standard is that offset fees in other areas of the state are not higher than the offset fee proposed in the DSEIR. This is an error of law. The "rough proportionality" requirement requires a comparison of the cost of the mitigation to the degree of severity of the impact. The fees charged in other areas of the state are irrelevant to "rough proportionality."

4. CEQA Findings: General

The Commission cannot make any CEQA findings required by CEQA section 21081 or CEQA Guidelines 15091, 15093, 15096(f), because the Project SEIR does not comply with CEQA and is not certifiable, for the reasons described in the Alliance's comments on the SEIR.

5. CEQA Findings: BAAQMD.

The Commission cannot find that "Impact AQ-4: Potential conflicts with BAAQMD's 2010 Clean Air Plan" is less than significant with mitigation because the City and Project Sponsor refuse to agree to BAAQMD's offset fees per Mitigation Measure M-AQ-2b. (See Exhibits 4 and 5.) There is also no evidence that the "Option 2" offset idea within Mitigation Measure M-AQ-2b is feasible. There are too many unanswered questions regarding Option 2, including lack of assured verification of offsets to ensure their effectiveness, and lack of assurance that offset sources are available in the quantity required. BAAQMD's offset program at least answers some, if not all, of these questions.

The Commission cannot find that all feasible mitigation measures that would substantially reduce "Impact AQ-1: Impacts of Criteria Air Pollutants from Construction" have been adopted as required by CEQA section 21081, because there is no evidence that paying the offset fees demanded by BAAQMD is infeasible. Also, as discussed above, there is no evidence that the "Option 2" offset idea within Mitigation Measure M-AQ-2b is feasible; therefore, it is not an adequate substitute for BAAQMD's offset program. This also applies to

- Impact AQ-2: Impacts of Criteria Air Pollutants from Project Operations"; Impact C-AQ-1: Project Contribution to Regional Air Quality Impacts;

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Re: Warriors Arena Project DSEIR
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- Impact C-AQ-1: Project Contribution to Regional Air Quality Impacts.

6. CEQA Findings: Pier 80 Alternate Site.

The Commission cannot find that feasible alternatives that would substantially reduce the Project's significant impacts have been adopted. The SEIR does not analyze the alternate site proposed by the Alliance near Pier 80, and did not circulate that analysis for public comment. Neither OCII nor this Commission has the basis to make conclusory findings rejecting the alternative. Among the relevant facts not considered in the findings is that the site is three times as large as would be required for the Event Center project and need not utilize any of the City-owned property nor any particular configuration of the privately-owned lots should there be an unwilling seller. There is no evidence provided that the site could not be acquired within a reasonable time period.

Case law confirms that assuring a site's consistency with city plans and zoning is within the City's power. Similarly, the scheduling of transportation services to the site can be increased, and the findings provide no studies to back up conclusory statements regarding traffic, air quality, hydrology, or water quality impacts. Since only a third of the site is needed to accommodate the event center, all of the impacts (if shown to have concern after sufficient technical review) can be avoided or mitigated. As stated in the Alliance letter to OCII that proposes this site for consideration as an alternative, here incorporated by reference, the SEIR failed to consider a potentially-feasible off-site alternative and must be revised and recirculated to do so before findings of infeasibility may be considered or adopted. The site suggested by the Alliance is potentially feasible and deserving of study.

Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

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November 2, 2015

Tiffany Bohee, OCII Executive Director
c/o Brett Bollinger, San Francisco Planning Department
via email warriors@sfgov.org

Subject: Warriors Event Center & Mixed Use Development
Inconsistency with Mission Bay South Redevelopment Plan
'Secondary Use' Classification

Dear Director Bohee and Mr. Bollinger:

The Mission Bay Alliance (the Alliance) contends that the Warriors' Event Center is unlawfully inconsistent with every use allowed by the Mission Bay South Redevelopment Plan (the Plan). Although the Alliance raised this issue in comments on the Draft Subsequent EIR (DSEIR), both the Responses to Comments in the Final SEIR and OCII's findings of project consistency remain materially inadequate.

The Plan designates uses allowed at a 'Commercial Industrial/Retail' site. The Alliance notes that while OCII now concedes that a sports arena is not within the scope of allowed 'principal uses' in that zoning, OCII contends that an arena is consistent with 'secondary uses.' As this letter will explain, all such secondary uses are similarly and demonstrably insufficient to permit the Warriors' sports arena.

Nighttime Entertainment. The Initial Study concluded, in error, that the DSEIR did not need to address land use issues — at all. It asserted that the entire Event Center, including the sports arena use, somehow met the secondary 'Nighttime Entertainment' use analyzed in the 1998 Plan EIR. Secondary uses were then generally referenced in the DSEIR (*e.g.*, pp. 3-8, 3-51, 4-5, 5.2-115), but there was no discussion of which category of secondary use would be allocated to the Event Center, inferring acceptance of the Nighttime Entertainment category.

The Plan describes Nighttime Entertainment in terms of small-scale local uses like dance halls, bars, nightclubs, discotheques, nightclubs, private clubs, and

EXHIBIT 1

restaurants. (Plan, p. 50.) At the time of the 1998 EIR, several small neighborhood bars occasionally offered nighttime entertainment, consistent with the secondary use category. Such minor uses were compatible with the 3rd Street Corridor and the waterfront. Clearly, no mammoth regional entertainment venue was anticipated in Mission Bay South and no such use was considered in the 1998 Plan EIR.

And while professional basketball games are held at night, the Event Center also projects 31 annual events "related to conventions, conferences, civic events, corporate events and other gatherings," with an estimated attendance of between 9,000 and 18,500 patrons. "[T]he majority of events are expected to occur during day time hours." Such events are not 'Nighttime Entertainment.'

The Director's currently-proposed findings that the sports arena is 'Nighttime Entertainment' contemplated as a secondary use in the Plan are unsupported. The findings fail to match the scope and impacts of a professional sports venue with the analysis or description of uses in the Plan or in the 1998 EIR. The findings are fatally conclusory; that somehow a professional sports venue would be "similar" to a nightclub or bar use in the 'Nighttime Entertainment' category "because" it will serve alcohol, provide amplified live entertainment, and provide a venue for evening gatherings. The findings fail to address the core inconsistency of a regional sports arena with the intent of the adopted Plan and the Design for Development, which focus on commercial entertainment uses in Mission Bay North to complement the Giants' ballpark.

OCII's reliance on the negative; to wit, that the 'Nighttime Entertainment' secondary use has no specific size limitations, is not enough. The Plan provides for the continued development of Mission Bay South as a walkable urban community intended to facilitate world-class medical and biotechnology development. The Event Center project violates the Plan Area Map carefully designed in classic, walkable Vara Blocks. (Plan, Attachment 2, p. 40.) Neither the Plan nor the Design for Development contemplate any uses comparable in scope or impact to the Event Center as 'Nighttime Entertainment.'

That being said, in fact in the Final SEIR and as reflected in the proposed Plan consistency findings, OCII now implicitly agrees with the Alliance that the 'Nighttime Entertainment' secondary use standing alone does not encompass a sports arena. Now, OCII additionally relies on the Plan's alternate 'secondary uses.' No such uses are consistent with the Plan, as explained below.

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Recreation Building. One of the Plan's secondary use categories is for an undefined 'Recreation building.' (Plan, p. 15.) The Plan describes 'Outdoor Recreation' as "an area, not within a building, which is provided *for the recreational uses of patrons* of a commercial establishment." (Plan, p. 50, italics added.)

OCII's proposed findings as to the 'Recreation building' category stretch the regional sports arena use not only beyond what was contemplated by the Plan or studied in the 1998 EIR, but beyond logic. To state the obvious: there is a difference between 'recreation' and 'entertainment.' Both involve enjoyment and leisure, and may involve ancillary eating and drinking, and the Alliance has no quarrel with the Director's reference to recreation as "something people do to relax or have fun; activities done for enjoyment." (OCII Proposed Secondary Use Determination, p. 6.) But myriad dictionary definitions confirm and it cannot readily be denied that 'recreation' is commonly understood to involve one's personal physical activities while 'entertainment' refers to events or performances designed to entertain others.

None of the Plan's various references to 'entertainment' include athletic activities normally considered 'recreation:' Adult Entertainment [bookstore or theater], Amusement Enterprise [video games], Bar [drinking and theater], Theater [movies and performance]. (Plan, Attachment 5, pp. 44-51.) Consistently, the 1998 EIR's discussion of 'recreational' land uses focused in turn on open space, bicycles, parks, and water-based activities. (Mission Bay EIR, Volume IIB, pp. V.M. 15-28.).

In context, the Plan's reference to 'Recreation building' as a secondary use contemplates participatory recreational uses like the 'recreation facilities' referenced in the 1998 Plan EIR for the existing golf driving range and in-line hockey rink, with the expressed expectation that the size of recreational 'facilities' would decrease as redevelopment of the Plan area progressed. (OCII Proposed Secondary Use Determination, p. 6.)

Reliance on the secondary use of 'Recreation building' is unsupported.

Public Structure or Use of a Nonindustrial Character. As presented in the Plan, the category of "other secondary uses" labeled 'Public structure or use of a nonindustrial character' references *one* secondary use, not *two*. (Plan, p. 13.) The use is required to be public, and either a structure *or* a use.

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The interpretation urged by the Director is, again, strained beyond the plain words of the Plan. 'Public' is not defined in the Plan and so its common meaning is assumed. But as proposed in the consistency findings, OCII interprets a 'public' use as simply requiring that the public be somehow 'served.' That would encompass every kind of principal and secondary use listed in the Plan, from child care to animal care to hotel, *etc.*, and renders the category meaningless: *i.e.*, "Any use is ok."

Instead, a public structure or use is commonly understood to be under the control and management of a public agency for the benefit of its constituency — such as the University of California[1] or the City of San Francisco. The Plan provides a description of a range of anticipated public improvements in Attachment 4. This list includes both public buildings and public uses. None of the public improvements listed in Attachment 4 include anything like a private professional sports arena.

The Event Center is a private project and is not within the scope of the secondary use category for a public structure or use of a nonindustrial character.

Director's Findings. As explained, the sports arena uses that are the impetus for the Event Center project are not allowed by the Plan's allowed principal or secondary uses. An allowed use is prerequisite for a finding of Plan consistency. The Alliance will not belabor the myriad other inconsistencies with the Plan's objectives, design, incompatibility with UCSF, and creation of significant environmental impacts, as those have been described in the DSEIR comments and throughout the administrative record, but hereby objects to their insufficiencies and lack of supporting substantial evidence for the Plan consistency finding.

Consideration of the Event Center project must be preceded by amendment of the Plan to be consistent with the delineated principal and secondary uses and the adopted Plan Area Map of the Mission Bay South Redevelopment Plan.

Thank you.

Sincerely yours,

Susan Brandt-Hawley
Attorney for Mission Bay Alliance

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[1] See attached 2005 Resolution and Secondary Use finding regarding the "UCSF hospital" as a "public structure or use of a non-industrial character" for "a public body specifically created by the California Constitution."

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RESOLUTION NO. 176-2005

Adopted November 1, 2005

APPROVING A MEMORANDUM OF UNDERSTANDING WITH THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, A CALIFORNIA PUBLIC CORPORATION, AND ACKNOWLEDGING THE EXECUTIVE DIRECTOR'S FINDINGS OF CONSISTENCY WITH THE MISSION BAY SOUTH REDEVELOPMENT PLAN, FOR THE EXPANSION OF UCSF FACILITIES IN THE MISSION BAY SOUTH REDEVELOPMENT PROJECT AREA; MISSION BAY SOUTH REDEVELOPMENT PROJECT AREA

BASIS FOR RESOLUTION

1. On September 17, 1998, by Resolution No. 193-98, the Redevelopment Agency of the City and County of San Francisco's (the "Agency") Commission (the "Agency Commission") conditionally approved the Mission Bay South Owner Participation Agreement (the "South OPA") and related documents between Catellus Development Corporation (the "Owner") and the Agency for development in the Mission Bay South Redevelopment Project Area (the "Project Area").

2. On November 2, 1998, the Board of Supervisors of the City and County of San Francisco (the "Board") by Ordinance No. 335-98 approved and adopted the Redevelopment Plan for the Mission Bay South Redevelopment Project Area (the "Plan"). The Board's adoption of the Plan satisfied the conditions to the effectiveness of Agency Resolution No. 193-98.

3. On November 16, 1998, the Agency entered into the South OPA with the Owner. The South OPA sets forth phasing principles that govern the development of property in the Project Area. Those principles include the Owner's obligations to deliver to the Agency affordable housing sites as market rate housing is built in the Project Area. They also include the Owner's commitments to construct public open space and other public infrastructure adjacent to -- or otherwise triggered by – development on any of the private parcels governed by the South OPA.

4. Under the South OPA and the related Mission Bay South Tax Increment Allocation Pledge Agreement (the "Pledge Agreement"), dated as of November 16, 1998, between the Agency and the City and County of San Francisco (the "City"), approximately 20% of the total property tax increment (plus certain excess tax increment) generated by development in the Project Area is contractually dedicated to develop affordable housing units on parcels that the Owner will contribute to the Agency, to achieve the affordable housing program contemplated by the Plan.

5. The South OPA requires the Owner to construct the public infrastructure directly related to each of the major phases in accordance with the incremental build-out of each project. Under the South OPA and the Pledge Agreement, the Agency is obligated to fund, repay or reimburse the Owner, subject to certain conditions, for the direct and indirect costs of constructing the infrastructure. The Agency has established a Community Facilities District ("CFD") for infrastructure in the Project Area. The Agency has also established a separate CFD to pay the costs of maintaining the public open space in the Project Area.

6. The South OPA provides that as a condition to any transfer of property in the Project Area, the Owner must obtain the agreement of the transferee to assume all of Owner's obligations under the South OPA with respect to the transferred parcels.

7. The Project Area includes an approximately 43-acre biomedical research and educational campus site (the "Campus Site") for the University of California, San Francisco ("UCSF"). UCSF has already invested about $675 million on projects completed or underway on the Campus Site within the Plan Area and has plans to invest another $225 million on projects in design.

8. The Regents of the University of California, a California public corporation ("The Regents") wishes to lease or acquire, and the Owner wishes to transfer Parcels 36, 37, 38 and 39 in the Project Area, comprising approximately 9.65 acres of land for the possible expansion of UCSF in Mission Bay (the "Expansion Parcels"). These parcels are not part of the 43 acres that the Plan originally designated as the Campus Site.

9. On November 30, 2004, The Regents released proposed amendments in draft form to its long range development plan, as LRDP Amendment #2. Those amendments contemplate an expansion of UCSF facilities onto the Expansion Parcels, including the possibility of developing by 2012 new integrated specialty Children's, Women's and Cancer hospitals containing about 210 beds, together with ambulatory and research facilities. In March 2005, The Regents approved LRDP Amendment #2 (the "Project") and certified a related final environmental impact report (the "LRDP #2 FEIR") which analyzed the environmental effects of the proposed UCSF development on the Expansion Parcels. Copies of the LRDP #2 FEIR are on file with the Agency Secretary.

10. The Owner and The Regents have entered into an Option Agreement and Grant of Option to Lease, dated as of January 1, 2005 (the "Option to Lease"), which provides that upon the satisfaction of certain conditions and the exercise by The Regents of its option (i) Catellus, as landlord, and The Regents, as tenant, will enter into a long-term ground lease of the Expansion Parcels (the "Lease") and (ii) the Owner and The Regents will at the same time enter into an Option Agreement and Grant of Option to Purchase (the "Option to Purchase") under which The Regents will have an option to purchase the Expansion Parcels.

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11. If The Regents exercises the Option to Lease within the option term, the Lease would allow for The Regents to develop up to 1,020,000 leasable square feet on the Expansion Parcels, provided that (a) any development of those parcels is the subject of further environmental review under the California Environmental Quality Act ("CEQA"), and (b) the Owner does not lose any of its entitled development potential for the balance of its land nor lose any of its other rights and privileges under the South OPA.

12. Pursuant to Section 302 of the Plan, the development of the contemplated UCSF facilities on the Expansion Parcels is permitted as a subset of "Other Uses" as a secondary use. Such secondary uses are permitted provided that such use generally conforms with redevelopment objectives and planning and design controls established pursuant to the Plan and based on certain findings of consistency by the Agency's Executive Director (the "Consistency Findings"). The Executive Director has made the Consistency Findings, and such findings are hereby incorporated herein by this reference as if fully set forth.

13. The City must make substantial improvements to San Francisco General Hospital ("SFGH") by 2013 and is evaluating a number of alternatives, including rebuilding on site and co-locating a new SFGH with new UCSF medical facilities in Mission Bay.

14. As a State agency, The Regents is exempt under the State Constitution from local land use regulation and property taxes to the extent it uses property exclusively in furtherance of its educational mission.

15. The Agency, City and The Regents negotiated a non-binding term sheet to guide the preparation of final transactional and related documents, such as a Disposition and Development Agreement ("DDA") for The Regents to acquire property for, and to construct and subsidize, affordable housing for low-income workers of UCSF, which DDA is being considered by the Agency Commission concurrently with this Resolution, pursuant to Resolution No. 160-2005, and provided terms for a Memorandum of Understanding regarding design standards and cooperation on the development of the Expansion Parcels (the "MOU"). The Agency Commission approved the non-binding term sheet on May 17, 2005 by Resolution No. 81-2005.

16. The proposed MOU addresses, among other things: the potential loss of tax increment from the transfer of the Expansion Parcels to a tax-exempt entity; the obligations to build infrastructure associated with development on the Expansion Parcels; the potential assistance of UCSF in the planning of the co-location, if any, of SFGH with the new UCSF facilities; the standards for design review for construction on the Expansion Parcels; local hiring and

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equal opportunity for jobs associated with the development on the Expansion Parcels; and other matters designed to provide the Agency and City with significant public benefits.

17. Agency staff is recommending that the Agency Commission approve the MOU, and the associated Consistency Findings.

18. The Agency Commission has reviewed and considered the information contained in the LRDP #2 FEIR.

19. The Agency Commission hereby finds that the MOU is an action in furtherance of the implementation of the Project for purposes of compliance with CEQA.

20. By Resolution 175-2005, the Agency Commission adopted environmental findings related to the LRDP #2 FEIR, pursuant to CEQA and the CEQA Guidelines (the "Findings"). Such Findings are made pursuant to the Agency's role as the responsible agency under CEQA for the Project. The Findings are hereby incorporated herein by this reference as if fully set forth.

RESOLUTION

ACCORDINGLY, IT IS RESOLVED by the Redevelopment Agency of the City and County of San Francisco that the findings of consistency with the Mission Bay South Redevelopment Plan are approved and the Executive Director is authorized to execute the "Expansion of UCSF Facilities in Mission Bay South Redevelopment Project Area (Blocks 36-39) Memorandum of Understanding", substantially in the form lodged with the Agency General Counsel; Mission Bay South Redevelopment Project Area.

APPROVED AS TO FORM:

James B. Morales
Agency General Counsel

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MEMORANDUM

126-03405-001
October 12, 2005

To: Marcia Rosen
Executive Director

From: Amy Neches
Senior Project Manager

Re: Secondary Use Finding Recommendation for UCSF Hospital in Mission Bay South Redevelopment Area

Pursuant to a Term Sheet dated as of August 1, 2005 between the City, the Agency and The Regents of the University of California, which was endorsed by the Commission on May 17, 2005 (Resolution No. 81-2005), the Agency is considering agreements, including a Memorandum of Understanding ("MOU"), under which the University of California at San Francisco ("UCSF") may develop a hospital in the Mission Bay South Redevelopment Area ("Redevelopment Area").

The UCSF hospital would be located on Blocks 36-39 within the Commercial Industrial land use district of the Redevelopment Area, as described in the Mission Bay South Redevelopment Plan (the "Plan"). The UCSF hospital development may also include all or portions of Block X3 within the Commercial Industrial/Retail land use district. In both of these land use districts "public structure or use of a non-industrial character" is permitted as a subset of "Other Uses" as a secondary use.

The University of California, of which UCSF is a component, is a public body specifically created by the California Constitution. A hospital or medical center is described in §790.44 of the San Francisco Planning Code as a "public or private institutional use which provides medical facilities for inpatient care, medical offices, clinics, and laboratories." The proposed UCSF hospital development will include these components: The hospital will not including manufacturing, warehousing, or distribution of goods, and can reasonably be considered a "non-industrial use." This interpretation is supported by the San Francisco Planning Code, under which hospitals are permitted as a conditional use in all C districts and NC-3 districts.

Section 302 of the Plan provides as follows:

> "Secondary uses shall be permitted in a particular land use district…provided that such use generally conforms with redevelopment objectives and planning and design controls established pursuant to this Plan and is determined by the Executive Director to make a positive contribution to the character of the Plan Area, based on

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a finding of consistency with the following criteria: the secondary use, at the size and intensity contemplated and at the proposed location, will provide a development that is necessary or desirable for, and compatible with, the neighborhood or the community."

Staff believes that the UCSF hospital is appropriate as a secondary use, based on the following:

1) The proposed hospital will be located on approximately 10 to 14 acres of land adjacent to the Mission Bay UCSF research campus that have been determined to be blighted and are affected by environmental contamination. UCSF plans close integration of its basic academic research activities with the teaching, research and patient care activities within the planned hospital. The plan for development of the UCSF hospital generally conforms to the Redevelopment Project Objectives as described in §103 of the Plan, particularly with objective A of eliminating blight and correcting environmental deficiencies, and objective B of retaining and promoting UCSF's research and academic activities within the City and County of San Francisco.

2) Under the MOU, the UCSF hospital development will generally conform to the planning and design controls established pursuant to the Plan, including the street layout, setbacks, and streetscape plan. To accommodate the needs of the hospital, the MOU will include specific adjustments to the existing height and bulk standards of the Commercial Industrial and Commercial Industrial/Retail land use zones of the Mission Bay South Design for Development. These changes will lower the maximum height of a hospital to 105 feet, compared to the existing 160 foot limit, but would allow for somewhat greater bulk in the mid-rise area. These changes have been studied and presented to the public at two well-noticed public meetings. In staff's opinion, the proposed adjustments represent reasonable variation from the existing standards, which will have little if any negative effect on the surrounding community in the context of overall Mission Bay development.

3) The hospital will contain no more development, as calculated under the Plan in leasable square feet, than would have been permitted under the principal uses permitted in these land use districts, and there will be no net increase in the overall size of development within the Redevelopment Area. The hospital will be developed on parcels that would otherwise likely have been developed with commercial office or life science/biotechnology uses. These uses would have been constructed in buildings of reasonably similar size and appearance as the proposed hospital use.

4) The proposed hospital will allow UCSF to continue to provide needed tertiary health care to the residents of San Francisco in a modern seismically safe hospital, and will assist UCSF in furthering its research and academic mission.

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Based on these factors, staff believes that it is appropriate to make the finding of consistency cited above, and recommends that the Executive Director permit the development of the UCSF hospital as a secondary use in Mission Bay, subject to the approval of the MOU by the Commission.

Approved on October 12, 2005:

Marcia Rosen
Executive Director

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November 2, 2015 [2 of 2]

By personal delivery at Nov. 3, 2015, hearing to: Commission on Community Investment and Infrastructure Attn: Claudia Guerra, Commission Secretary Office of Community Investment and Infrastructure 1 South Van Ness Avenue, 5th Floor San Francisco, CA 94103 and email to: claudia.guerra@sfgov.org	By email to: *warriors@sfgov.org*: Ms Tiffany Bohee OCII Executive Director c/o Mr. Brett Bollinger San Francisco Planning Department 1650 Mission Street, Suite 400 San Francisco, CA 94103

Re: Warriors Arena Project: Violation of Variance Requirement.

Dear Ms Bohee and Mr. Bollinger:

This office represents the Mission Bay Alliance ("Alliance"), an organization dedicated to preserving the environment in the Mission Bay area of San Francisco, regarding the project known as the Event Center and Mixed Use Development at Mission Bay Blocks 29-32 ("Warriors Arena Project" or "Project"). The Mission Bay Alliance objects to approval of this Project and certification of the Project SEIR.

I write today regarding the OCII's failure to require a variance or "variation" for this Project under section 305 of the Mission Bay South Redevelopment Plan ("Plan"). The November 2, 2015, letter from Susan Brandt-Hawley, my co-counsel for the Alliance, demonstrates this Project is not an allowable secondary use under the Plan. Thus, a variance is not available because, as shown by Brandt-Hawley, the Project "will change the land uses on this Plan." (Plan, § 305.) However, in the alternative, if the Project is an allowable secondary use under the Plan, then the OCII must process this Project application as a variance and make the findings required by Plan section 305 before Project approval.

Both California and San Francisco planning law provide a process for landowners to obtain a "variance" from the "uniformity" of zoning limits that, while appropriate for the zone district in general, would impose undue hardship due to unique characteristics of a specific parcel. Government Code section 65906 governs the grant of zoning variances by municipalities and prohibits local agencies from granting "special privileges" to individual landowners. Similarly, San

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Francisco Planning Code, section 305, subdivision (a), provides that a variance permit must be approved for any exception to the requirements of the Planning Code. Subdivision (c) thereof mirrors the requirements of state law, and requires a finding that "owing to such exceptional or extraordinary circumstances the literal enforcement of specified provisions of this Code would result in practical difficulty or unnecessary hardship ...."

Similarly, the Plan includes a variance provision that reflects the same substantive requirements as Government Code section 65906 and Planning Code section 305:

> The Agency may modify the land use controls in this Plan where, owing to unusual and special conditions, enforcement would result in undue hardships or would constitute an unreasonable limitation beyond the intent and purposes of these provisions. Upon written request for variation from the Plan's land use provisions from the owner of the property, which states fully the grounds of the application and the facts pertaining thereto, and upon its own further investigation, the Agency may, in its sole discretion, grant such variation from the requirements and limitations of this Plan. The Agency shall find and determine that the variation results in substantial compliance with the intent and purpose of this Plan, provided that in no instance will any variation be granted that will change the land uses on this Plan.

(Plan, § 305.)

Because the Plan's variance provision imposes virtually identical requirements as Planning Code section 305, both apply. (Plan, §'s 101 ["Regardless of any future action by the City or the Agency, whether by ordinance, resolution, initiative or otherwise, the rules, regulations, and official policies applicable to and governing the overall design, construction, fees, use or other aspect of development of the Plan Area shall be (i) this Plan and the other applicable Plan Documents, (ii) to the extent not inconsistent therewith or not superseded by this Plan, the Existing City Regulations and (iii) any new or changed City Regulations permitted under this Plan"]; 304.9.C.(iv)).

Here, the Project creates at least sixteen inconsistencies with the Design for Development (D4D). The OCII now proposes to amend the D4D, the Owner's Participation Agreement (OPA), and other Plan documents to resolve these inconsistencies by, including but not limited to, raising maximum height limits from 90 to 135 feet, allowing a second 160+ foot tower, increasing bulk limits to accomodate the arena, and changing arena setbacks, street wall heights, view corridors, public rights of way, and parking standards. (See e.g., Draft SEIR, pp. 4-7 - 4-9, § 4.2.4; Proposed Resolution 2015, exhibit A; Memorandum to the OCII from Executive Director Tiffany Bohee for Items 5(a), 5(b), 5(c), 5(d) & 5(e) the November 3, 2015, CCII meeting agenda, pp. 4, 22.)

Even if the Project's land uses are allowable secondary uses, these amendments "modify the land use controls in this Plan" as provided in Plan section 305. But the Project Sponsor has made

no showing that due to "unusual and special conditions, enforcement would result in undue hardships or would constitute an unreasonable limitation beyond the intent and purposes of these provisions." (Plan, § 305.)

"Variances are, in effect, constitutional safety valves to permit administrative adjustments when application of a general regulation would be confiscatory or produce unique injury." (Curtin's California Land Use and Planning Law, p. 55.) Variance requirements also implement the State Planning and Zoning Law's requirement of "uniformity" of zoning rules within zoning districts. (See Gov. Code, § 65852 ["All such [zoning] regulations shall be uniform for each class or kind of building or use of land throughout each zone, but the regulation in one type of zone may differ from those in other types of zones;" *Neighbors in Support of Appropriate Land Use v. Cnty. of Tuolumne* (2007) 157 Cal.App.4th 997, 1008 (*Neighbors*).) The State Planning and Zoning Law also requires vertical consistency between local agencies general plans, zoning ordinances, and land use permits. (Gov. Code, § 65860, subd. (c) ["County or city zoning ordinances shall be consistent with the general plan of the county or city... ."]; see *DeVita v. Cnty. of Napa* (1995) 9 Cal.4th 763, 772 ["A general plan is a 'constitution' for future development [citation omitted] located at the top of 'the hierarchy of local government law regulating land use'"].)

California courts have vigorously enforced the requirements for granting a variance, and have developed extensive jurisprudence to corral the many stratagems local agencies have used to avoid its requirements. (See e.g., *Topanga Association v. County of Los Angeles* (1974) 11 Cal.3d 506, 511-12 (*Topanga*); *Orinda Assn. v. Board of Supervisors* (1986) 182 Cal.App.3d 1145, 1166 (*Orinda Assn*) ["A zoning scheme, after all, is similar in some respects to a contract ... If the interest of these parties in preventing unjustified variance awards for neighboring land is not sufficiently protected, the consequence will be subversion of the critical reciprocity upon which zoning regulation rests..."].)

Variance findings must focus on a comparison of the subject property to other properties in the zone district with which the variance is intended to bring it into parity, and the benefits to the community or "public interest" associated with a zoning exception are irrelevant. (*Orinda Assn, supra*, at p. 1166.) By amending the Plan documents to accommodate this Project, the OCII would cast these requirements aside and grant a "special privilege" to this Project Sponsor.

In *Neighbors*, rather than adopt a rezone or grant a variance, the County created a special exception to the zoning ordinance for one landowner by including it in a development agreement adopted under the development agreement law. (*Neighbors, supra*, 157 Cal.App.4th at p. 1003.) In rejecting this stratagem, the Court in *Neighbors* noted that there are limits on the power to rezone: "'The foundations of zoning would be undermined, however, if local governments could grant favored treatment to some owners on a purely ad hoc basis ... [R]ezoning, even of the smallest parcels, still necessarily respects the principle of uniformity." (*Id.* at pp. 1009-10.)

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A similar result occurred in *Trancas Prop. Owners Assn. v. City of Malibu* (2006) 138 Cal.App.4th 172 (*Trancas*). In *Trancas*, the court held an exemption from a city's zoning requirements accomplished by contract functionally resembled a variance, and held that "such departures from standard zoning by law require administrative proceedings, including public hearings ... followed by findings for which the instant [density] exemption might not qualify... Both the substantive qualifications and the procedural means for a variance discharge public interests. Circumvention of them by contract is impermissible." (Id. at p. 182.)

In sum, the OCII's proposed grant of zoning exceptions to this Project by way of amending the Plan documents rather than by variance violates the Plan, the variance requirements of the San Francisco Planning Code and state law, and the uniformity requirement of state law.

Thank you for your attention to this matter.

Very Truly Yours,

Tom Lippe

Thomas N. Lippe

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Office Development Annual Limitation ("Annual Limit") Program

The Office Development Annual Limit (Annual Limit) Program became effective in 1985 with the adoption of the Downtown Plan Amendments to the Planning Code (Sections 320–325) and was subsequently amended by Propositions M (1986) and C (1987). The Program defines and regulates the allocation of any office development project that exceeds 25,000 gross square feet (gsf) in area.

A total of 950,000 gsf of office development potential becomes available for allocation in each approval period, which begins on October 17th every year. Of the total new available space, 75,000 gsf is reserved for Small Allocation projects (projects with between 25,000 and 49,999 gsf of office space), and the remaining 875,000 gsf is available for Large Allocation projects (projects with at least 50,000 gsf of office space). Any available office space not allocated in a given year is carried over to subsequent years.

This document reflects the status of the Annual Limit Program, including current availability and summaries of previously approved and pending projects.

Information in this document was last updated on **September 1, 2015.** Inquiries should be directed to Corey Teague at (415) 575-9081 or corey.teague@sfgov.org.

Summary of Key Figures

Small Allocation Projects (<50,000 gsf of office space)	**Current Availability** **1,188,805 gsf** *Current total square footage available for allocation.*	**Pending Availability** **903,255 gsf** *Currently available square footage less 285,550 gsf of pending* projects.*	**Pipeline Availability** **776,280 gsf** *Currently available square footage less 285,550 gsf of pending* projects and 126,975 gsf of pre-application** projects.*
Large Allocation Projects (>50,000 gsf of office space)	**Current Availability** **1,429,763 gsf** *Current total square footage available for allocation.*	**Pending Availability** **-1,678,791 gsf** *Currently available square footage less 3,108,554 gsf of pending* projects.*	**Pipeline Availability** **-8,529,408 gsf** *Currently available square footage less 3,108,554 gsf of pending* projects and 6,850,617 gsf of pre-application** projects.*

* A 'pending project' is one for which an office allocation application has been submitted but not yet acted upon.
** A 'pre-application' project is one for which an environmental review application, preliminary project assessment application, or other similar application has been submitted but for which no office allocation application has yet been submitted.

EXHIBIT 3

O-MBA28L11

PENDING OFFICE PROJECTS*

*Projects that have submitted an application (B or OFA) pursuant to Planning Code Section 321 (Office Development Annual Limit) but on which no Commission action has yet ocurred.

Small Office Cap					
Case No.	**Address**	**Sq. Ft.**	**Status**	**Staff**	**Comments**
2009.0065	3433 Third Street	49,229	B filed 1/27/09	Julian Banales	New 5-story office building for Carpenter's Union on vacant lot. May be cancelled due to inactivity (2/18/14).
2014.0567	2101 Mission Street	48,660	B filed on 4/17/14	Brittany Bendix	Legalize change of use from retail and warehouse to office. Planning Commission hearing scheduled for 9/3/15.
2012.1410	77-85 Federal Street	49,730	B filed on 6/5/14	Scott MacPherson	Demo two existing office buildings and construct a 5-story building with ground floor retail and office above.
2015-000509	1125 Mission Street	37,944	B filed on 1/15/15	Julian Banales	Change of use from auto repair.
2014.1315	135 Townsend Street	49,995	B filed on 3/11/15	Rich Sucre	Conversion of existing self storage building.
2013.1511	360 Spear Street (aka 100 Harrison St)	49,992	B filed on 4/3/15	Rich Sucre	Partial conversion of existing ISE.
Subtotal		***285,550***			

Large Office					
Case No.	**Address**	**Sq. Ft.**	**Status**	**Staff**	**Comments**
2012.0640	598 Brannan Street	700,456	B filed on 10/24/12	Elizabeth Purl	Demo of 2 industrial buildings; 2 new office buildings (Central SoMa Project).
2013.1545	645 Harrison Street	99,698	B filed on 7/18/13	Kimberly Durandet	LoD confirmed 14,520gsf as existing legal office space. Revised proposal to convert additional 99,698gsf, plus retain 33,758gsf of PDR on first and second floors.
2013.1593	2 Henry Adams	245,697	B filed on 2/6/14	Rich Sucre	Owner-initiated Article 10 Landmark designation and an Office Allocation. Eligible area limited by recent legislation.
2011.0409	925 Mission Street	803,300	B filed on 8/19/14	Kevin Guy	"5M" Project. Planning Commission informational hearing scheduled for 9/3/15.
2006.1523	50 First Street	1,050,000	B filed on 6/4/14	Kevin Guy	Demo and construction of a mixed-use building with two towers.
2014-002701	GSW Development	0	B filed on 12/12/14	David Winslow	Design approval only. Allocation already approved in Alexandria District.
2014.1063	633 Folsom Street	89,804	B filed on 12/23/14	Mark Luellen	Four story office addition to existing seven story building.
2014.0154	1800 Mission Street	119,599	OFA filed on 1/27/15	Rich Sucre	Conversion in the Armory.
Subtotal		***3,108,554***			

PRE-APPLICATION OFFICE PROJECTS*

O-MBA28L11

*Projects that have submitted for initial Department review (e.g. environmental review (EE) or Preliminary Project Assessment [PPA]), but have not submitted an application pursuant to Planning Code Section 321 (Office Development Annual Limit).

Small Office Cap

Case No.	Address	Sq. Ft.	Status	Staff	Comments
2014.1616	1200 Van Ness Ave	27,000	PPA issued 1/14/15.	Mary Woods	Exact office square footage TBD.
2015-010219	462 Bryant Street	49,995	PPA filed on 8/12/15.		An existing single story office building and basement will remain, and five stories of new office space will be added (approximately 49,995 gsf of new office space).
2015-010374	598 Bryant Street	49,980	PPA filed on 8/12/15.	Kansai Uchida	Demo existing gas station and construct a 9-story mixed-use office building with underground parking.
Subtotal		***126,975***			

Large Office Cap

Case No.	Address	Sq. Ft.	Status	Staff	Comments
2005.0759	725-735 Harrison	730,940	PPA letter issued 5/16/2013. Revised EE pending.	Debra Dwyer	"Harrison Gardens" (Central SoMa Project). Original proposal changed to office per 2/21/13 application amendment.
2014.0416	610-620 Brannan Street	561,065	EE filed 6/19/14	Elizabeth Purl	Demo and new 11-story mixed use bldg (Central SoMa Project).
2013.0478	559 6th Street	123,972	PPA issued on 6/17/13. PPA expired on 12/17/14.	Kimia Haddadan	Demolish 3 bldgs and construct a mixed-use project (Central SoMa Project)
2013.0970	Pier 70 (Forest City Only)	1,810,000	EE filed on 11/10/14	Andrea Contreras	SF Port project
n/a	2525 16th Street	60,980	Legitimization request filed 11/30/12	Corey Teague	EN Legitimization
2014.0858	565-585 Bryant Street	188,280	PPA issued on 7/25/14	Jeremy Shaw	Demo four existing bldgs and construct an 11-story mixed-use bldg. 2nd PPA proposes only 46,990sf of office (Central SoMa Project).
2014.0405	330 Townsend Street	394,300	PPA issued on 5/15/14	Steve Wertheim	Demo existing bldg and construct a 21-story office bldg. 2nd PPA proposes only 212,300sf of office (Central SoMa Project).
2013.0208	SWL 337 ("Mission Rock")	1,300,000	EE filed on 6/4/13	Josh Switzky	Large mixed-use project on Port property.
2015-004256	630-698 Brannan St	1,512,260	PPA issued on 7/24/15. EE filed 7/24/15.	Lisa Chen	Flower Mart replacement project (Central SoMa Project). Two Previous PPAs. 2015-001903 analysed proposed 1,492,450gsf. 2013.0370 was under different ownership, only included Lot 5, and analysed 655,150gsf.

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2014.1208	1500 Mission Street	0	EE filed on 10/23/14	Chelsea Fordham	Demo and new construction of mixed use bldg with 462,800gsf of City office space.
2015-009704	505 Brannan Street	168,820	PPA filed on 7/27/15	Steve Wertheim	"Phase II" addition (165', 11 stories) of office space onto an approved 85' "Phase I" office building approved by the Planning Commission on 12/11/14. With this newly planned addition, total building height would now be 250' and contain a total of 306,266 sf.
Subtotal		***6,850,617***			

ANNUAL LIMIT FOR "SMALL" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,188,805

Approval Period[1]	Unallocated Sq. Ft.[2]	"Small" Office Annual Limit	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
1985-1986	0	75,000	75,000	No Projects	N/A	0	0	
1986-1987	75,000	75,000	150,000	1199 Bush	1985.244	46,645	46,645	
1987-1988	103,355	75,000	178,355	3235-18th Street	1988.349	45,350	45,350	aka 2180 Harrison Street
1988-1989	133,005	75,000	208,005	2601 Mariposa	1988.568	49,850	49,850	
1989-1990	158,155	75,000	233,155	No Projects	N/A	0	0	
1990-1991	233,155	75,000	308,155	No Projects	N/A	0	0	
1991-1992	308,155	75,000	383,155	1075 Front	1990.568	32,000	32,000	
1992-1993	351,155	75,000	426,155	No Projects	N/A	0	0	
1993-1994	426,155	75,000	501,155	No Projects	N/A	0	0	
1994-1995	501,155	75,000	576,155	No Projects	N/A	0	0	
1995-1996	576,155	75,000	651,155	No Projects	N/A	0	0	
1996-1997	651,155	75,000	726,155	No Projects	N/A	0	0	
1997-1998	726,155	75,000	801,155	No Projects	N/A	0	0	
1998-1999	801,155	75,000	876,155	1301 Sansome	1998.362	31,606	31,606	
1999-2000	844,549	75,000	919,549	435 Pacific	1998.369	32,500		
				2801 Leavenworth	200.459	40,000		
				215 Fremont	1998.497	47,950		
				845 Market	1998.090	49,100	169,550	
2000-2001	749,999	75,000	824,999	530 Folsom	2000.987	45,944		
				35 Stanford	2000.1162	48,000		
				2800 Leavenworth	2000.774	34,945		
				500 Pine	2000.539	44,450	173,339	See also 350 Bush Street - Large
2001-2002	651,660	75,000	726,660	No Projects	N/A	0	0	
2002-2003	726,660	75,000	801,660	501 Folsom	2002.0223	32,000	32,000	
2003-2004	769,660	75,000	844,660	No Projects	N/A	0	0	
2004-2005	844,660	75,000	919,660	185 Berry Street	2005.0106	49,000	49,000	
2005-2006	870,660	75,000	945,660	No Projects	N/A	0	0	
2006-2007	945,660	75,000	1,020,660	No Projects	N/A	0	0	
2007-2008	1,020,660	75,000	1,095,660	654 Minnesota	no case number	43,939	0	UCSF
2008-2009	1,095,660	75,000	1,170,660	No Projects	N/A	0	0	
2009-2010	1,170,660	75,000	1,245,660	660 Alabama Street	2009.0847	39,691	39,691	
2010-2011	1,205,969	75,000	1,280,969	No Projects	N/A	0	0	
2011-2012	1,280,969	75,000	1,355,969	208 Utah / 201 Potrero	2011.0468	48,732		EN Legitimization

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ANNUAL LIMIT FOR "SMALL" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,188,805

Approval Period[1]	Unallocated Sq. Ft.[2]	"Small" Office Annual Limit	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
				808 Brannan Street	2012.0014	43,861		EN Legitimization
				275 Brannan Street	2011.1410	48,500		
				385 7th/1098 Harrison	2011.1049	42,039		EN Legitimization
				375 Alabama Street	2012.0128	48,189	231,341	EN Legitimization
2012-2013	1,124,628	75,000	1,199,628	No Projects	N/A	0	0	
2013-2014	1,199,628	75,000	1,274,628	3130 20th Street	2013.0992	32,081		
				660 3rd Street	2013.0627	40,000	72,081	
2014-2015	1,202,547	75,000	1,277,547	340 Bryant Street	2013.1600	47,536		
				101 Townsend Street	2014-002385	41,206	88,742	
					Total	1,105,134		

[1] Each approval period begins on October 17
[2] Carried over from previous year

O-MBA28L11

ANNUAL LIMIT FOR "LARGE" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,429,763

Approval Period[1]	Unallocated Sq. Ft.[2]	"Large" Office Annual Limit[3]	Reduction per Section 321.1	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
1985-1986	0	875,000	(475,000)	400,000	No Projects	N/A	0	0	
1986-1987	400,000	875,000	(475,000)	800,000	600 California	1986.085	318,030		
					235 Pine	1984.432	147,500		
					343 Sansome	1985.079	160,449	625,979	
1987-1988	174,021	875,000	(475,000)	574,021	No Projects	N/A	0	0	
1988-1989	574,021	875,000	(475,000)	974,021	No Projects	N/A	0	0	
1989-1990	974,021	875,000	(475,000)	1,374,021	150 California	1987.813	195,503	195,503	
1990-1991	1,178,518	875,000	(475,000)	1,578,518	No Projects	N/A	0	0	
1991-1992	1,578,518	875,000	(475,000)	1,978,518	300 Howard	1989.589	382,582	382,582	aka 199 Fremont Street
1992-1993	1,595,936	875,000	(475,000)	1,995,936	No Projects	N/A	0	0	
1993-1994	1,995,936	875,000	(475,000)	2,395,936	No Projects	N/A	0	0	
1994-1995	2,395,936	875,000	(475,000)	2,795,936	No Projects	N/A	0	0	
1995-1996	2,795,936	875,000	(475,000)	3,195,936	No Projects	N/A	0	0	
1996-1997	3,195,936	875,000	(475,000)	3,595,936	101 Second	1997.484	368,800	368,800	
1997-1998	3,227,136	875,000	(37,582)	4,064,554	55 Second Street	1997.215	283,301		aka One Second Street
					244-256 Front	1996.643	58,650		aka 275 Saramento Street
					650 Townsend	1997.787	269,680		aka 699-08th Street
					455 Golden Gate	1997.478	420,000		State office building - see also Case No. 1993.707
					945 Battery	1997.674	52,715		
					475 Brannan	1997.470	61,000		
					250 Steuart	1998.144	540,000	1,685,346	aka 2 Folsom/250 Embarcadero
1998-1999	2,379,208	875,000	0	3,254,208	One Market	1998.135	51,822		
					Pier One	1998.646	88,350		Port office building
					554 Mission	1998.321	645,000		aka 560/584 Mission Street
					700 Seventh	1999.167	273,650		aka 625 Townsend Street
					475 Brannan	1999.566	2,500	1,061,322	addition to previous approval - 1997.470
1999-2000	2,192,886	875,000	0	3,067,886	670 Second	1999.106	60,000		
					160 King	1999.027	178,000		
					350 Rhode Island	1998.714	250,000		
					First & Howard	1998.902	854,000		First & Howard bldg #2 (405 Howard), #3 (505-525 Howard) & #4 (500 Howard)
					235 Second	1999.176	180,000		
					500 Terry Francois	2000.127	280,000		Mission Bay 26a
					550 Terry Francois	2000.329	225,004		Mission Bay 28
					899 Howard	1999.583	153,500	2,178,504	
2000-2001	889,382	875,000	0	1,764,382	First & Howard	1998.902	295,000		First & Howard bldg #1 (400 Howard)
					550 Terry Francois	2000.1293	60,150	355,150	Additional allocation (see also 2000.329)
2001-2002	1,409,232	875,000	0	2,284,232	350 Bush	2000.541	344,500		See also 500 Pine Street - Small
					38-44 Tehama	2001.0444	75,000		

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ANNUAL LIMIT FOR "LARGE" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,429,763

Approval Period[1]	Unallocated Sq. Ft.[2]	"Large" Office Annual Limit[3]	Reduction per Section 321.1	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
					235 Second	2000.319	64,000		modify 1999.176
					250 Brannan	2001.0689	113,540		
					555 Mission	2001.0798	549,000		
					1700 Owens	2002.0300	0*	1,146,040	Alexandria District - West Campus (160,100)
2002-2003	1,138,192	875,000	0	2,013,192	7th & Mission GSA	No Case	514,727	514,727	Federal Building
2003-2004	1,498,465	875,000	0	2,373,465	Presidio Dig Arts	No Case	839,301	839,301	Presidio Trust
2004-2005	1,534,164	875,000	0	2,409,164	No Projects	N/A	0	0	
2005-2006	2,409,164	875,000	0	3,284,164	201 16th Street	2006.0384	430,000	430,000	aka 1409/1489 Illinois
2006-2007	2,854,164	875,000	0	3,729,164	1500 Owens	2006.1212	0*		Alexandria District - West Campus (158,500)
					1600 Owens	2006.1216	0*		Alexandria District - West Campus (228,000)
					1455 Third Street/455 Mission Bay South Blvd/450 South Street	2006.1509	0*		Alexandria District - North Campus (373,487)
					1515 Third Street	2006.1536	0*		Alexandria District - North Campus (202,893)
					650 Townsend	2005.1062	375,151		
					120 Howard	2006.0616	67,931		
					535 Mission	2006.1273	293,750	736,832	
2007-2008	2,992,332	875,000	0	3,867,332	100 California	2006.0660	76,500		
					505-525 Howard	2008.0001	74,500		Additional allocation for First & Howard Building #3
					680 Folsom Street	No Case	117,000		Redevelopment - Yerba Buena
					Alexandria District	2008.0850	1,122,980		Establishes Alexandria Mission Bay Life Sciences and Technology Development District ("Alexandria District") for which previously allocated office space and future allocations would be limited to 1,350,000 gsf to be distributed among designated buildings within district.
					600 Terry Francois	2008.0484	0*		Alexandria District - East Campus (312,932)

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ANNUAL LIMIT FOR "LARGE" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,429,763

Approval Period[1]	Unallocated Sq. Ft.[2]	"Large" Office Annual Limit[3]	Reduction per Section 321.1	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments
					650 Terry Francois	2008.0483	0*		Alexandria District - East Campus (291,367)
					1450 Owens	2008.0690	0*	1,390,980	Alexandria District - West Campus (61,581)
2008-2009	2,476,352	875,000	0	3,351,352	No Projects	N/A	0	0	
2009-2010	3,351,352	875,000	0	4,226,352	850-870 Brannan Street	2009.1026	138,580		aka 888 Brannan Street
					222 Second Street	2006.1108	430,650	569,230	LEED
2010-2011	3,657,122	875,000	0	4,532,122	350 Mission Street	2008.1524	340,320		
					Alexandria District	n/a	200,000		under terms of Motion 17709
					Treasure Island	2007.0903	0	540,320	Priority Resolution Only
2011-2012	3,991,802	875,000	0	4,866,802	Alexandria District	n/a	27,020		under terms of Motion 17709
					850-870 Brannan St	2011.0583	113,753		aka 888 Brannan Street
					444 DeHaro St	2012.0041	90,500		
					460-462 Bryant St	2011.0895	59,475		
					185 Berry St	2012.0409	101,982		aka China Basin Landing
					100 Potrero Ave.	2012.0371	70,070		EN Legitimization
					601 Townsend Street	2011.1147	72,600	535,400	EN Legitimization
2012-2013	4,331,402	875,000	0	5,206,402	101 1st Street	2012.0257	1,370,577		Transbay Tower; aka 425 Mission
					181 Fremont Street	2007.0456	404,000		new office/residential building
					1550 Bryant Street	2012.1046	108,399		EN Legitimization
					1100 Van Ness Ave	2009.0885	242,987		CPMC Cathedral Hill MOB
					3615 Cesar Chavez	2009.0886	94,799		CPMC St. Luke's MOB
					345 Brannan Street	2007.0385	102,285		
					270 Brannan Street	2012.0799	189,000		
					333 Brannan Street	2012.0906	175,450		
					350 Mission Street	2013.0276	79,680		Salesforce (No. 2)
					999 Brannan Street	2013.0585	143,292		EN Legitimization - Dolby
					1800 Owens Street	2012.1482	700,000	3,610,469	Mission Bay Block 40
2013-2014	1,595,933	875,000	0	2,470,933	300 California Street	2012.0605	56,459		
					665 3rd Street	2013.0226	123,700		
					410 Townsend Street	2013.0544	76,000		
					888 Brannan Street	2013.0493	10,000		AirBnB - See Also 2011.0583B
					81-85 Bluxome Street	2013.0007	55,000	321,159	
2014-2015	2,149,774	875,000	0	3,024,774	501-505 Brannan Stree	2012.1187	137,446		
					100 Hooper Street	2012.0203	284,471		
					390 Main Street	n/a	137,286		MTC Project - Verified on 4/14/15
					250 Howard Street	2014-002085	766,745		aka Transbay Block 5 (195 Beale St)
					510 Townsend Street	2014.0679	269,063	1,595,011	
						Total	19,082,655		

[1] Each approval period begins on October 17

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ANNUAL LIMIT FOR "LARGE" SAN FRANCISCO OFFICE DEVELOPMENT

Amount Currently Available:	1,429,763

Approval Period[1]	Unallocated Sq. Ft.[2]	"Large" Office Annual Limit[3]	Reduction per Section 321.1	Adjusted Annual Limit	Project Address	Case No.	Project Allocation	Total Allocated	Comments

[1] Carried over from previous year
[3] Excludes 75,000 gsf dedicated to "small" projects per Section 321(b)(4)

SMALL OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
1986-1987	1985.244	1199 Bush	0280-031	46,645	11028	complete	1991	St. Francis Hospital
1987-1988	1988.349	3235-18th Street	001/030	45,350	11451	complete		PG&E, aka 2180 Harrison Street
1988-1989	1988.569	2601 Mariposa	4016-001	49,650	11598	complete	1991	KQED
	1988.387	1501 Sloat	7255-002	39,000	11567	doesn't count	n/a	revoked 12/00
1989-1990								
1990-1991	1990.236	350 Pacific	0165-006	45,718	13114	doesn't count	n/a	revoked 12/00
1991-1992	1990.568	1075 Front	0111-001	32,000	13381	complete	1993	
	1987.547	601 Dubose	3539-001	36,000	13254	doesn't count	n/a	revoked 12/00
1992-1993								No Projects Approved During Allocation Period
1993-1994								No Projects Approved During Allocation Period
1994-1995								No Projects Approved During Allocation Period
1995-1996								No Projects Approved During Allocation Period
1996-1997								No Projects Approved During Allocation Period
1997-1998								No Projects Approved During Allocation Period
1998-1999	1998.362	1301 Sansome	0065-005	31,808	14784	complete	1999	
1999-2000	1998.369	435 Pacific	0175-028	32,500	14971	complete	2003	
	2000.459	2801 Leavenworth	0010-001	46,000	15922	complete	2001	The Cannery
	1998.497	315 Fremont	3738-012	47,950	15939	complete	2002	
	1998.668	38-44 Tehama	3736-111	48,950	15967	doesn't count	n/a	reapproved as large project
	1998.090	545 Market	3705-09/18 into 3705-049	49,100	15949	complete	2006	Bloomingdale's
2000-2001	1999.521	178 Townsend	3788-012	49,002	16025	doesn't count	n/a	18mos exp 8/4/02; 2000.0470; new E & K appl for residential; building permit application no.2000082860851 for residential submitted on 8/29/07; 9/4/08 CPC approves conversion to Residential (M17988) - Revoked on 1/23/09
	2000.567	530 Folsom	3736-017	45,944	16023	complete	2006	
	1998.300	272 Main	3739-006	46,500	16049	doesn't count	n/a	18mos exp 8/7/02; permit 2005021868610 filed 2/05. 10/15/08 - Building Permit Application No. 2008111360470 issued for demolition of two buildings on property. To be used for temp Transbay facility. REVOCATION LETTER ISSUED 3/16/09
	2000.1162	35 Stanford	3788-039	48,000	16070	complete	2007	
	2000.774	2800 Leavenworth	007/008	34,945	16071	complete	2001	The Anchorage
	2000.502	199 Nine Montgomery	3722-021	49,345	16104	doesn't count	n/a	revoked 1/6/05
	2000.1269	3433 Third	5203-23	42,000	16107	doesn't count	n/a	building permit application no. 2000110144657 withdrawn on 11/9/06. REVOCATION LETTER ISSUED 9/25/07 - "

O-MBA28L11

SMALL OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	1999.795	177 Townsend	3784-4,7	48,775	16122	doesn't count	n/a	revoked 1/6/05
	2000.539	500 Pine	259-4 to 9/033	44,458	16113	approved	n/a	18mos exp 9/15/02 - CPC received project status update on 10/15/07 (project is associated with 350 Bush Street - Large Office Approval). Building permit application no. 200011024683 approved by CPB on 9/4/08. Building permit application no. 200806275535 submitted for shoring work (9/4/08 - under review by DPW-BSM)
	2000.986	150 Powell	327-22	39,174	16115/164 23	doesn't count	n/a	time limit for construction extended (see Case No. 2002.0363d). Project converted to residential use (see Case No. 2006.1299)
	1998.281	185 Berry	3803-005	49,500	16143	doesn't count	n/a	new approval 2005
	2000.190	201 Second	3736-097	44,500	16148	doesn't count	n/a	converted to residential use
	2000.860	35 Hawthorne	3735-047	40,350	16174	doesn't count	n/a	converted to residential use - see 2004.0802 and building permit application no. 200509062369
	2000.122	48 Tehama	3736-084/085	49,500	16235	doesn't count	n/a	revoked at Planning Commission hearing on 8/9/11
	2000.723	639 Second	3789-055/857/871	49,500	16241	doesn't count	n/a	revoked 1/6/05
	1999.423	699 Second	3789-054/857/871	49,500	16240	doesn't count	n/a	revoked 1/10/05
2001-2002	2001.0059	3251 18th Street	3591-018	49,500	16451	doesn't count	n/a	6/26/07 - building permit application no. 2007062854S0 submitted to revise project and reduce office space to approx. 19,000 gsf. - REVOCATION LETTER ISSUED 8/16/07
2002-2003	2002.0223	501 Folsom Street	3749-001	32,000	16516	complete	2006	
2003-2004								No Projects Approved During Allocation Period
2004-2005	2005.0106	185 Berry Street	3803-005	49,000	17070	complete	2008	
2005-2006								No Projects Approved During Allocation Period
2006-2007	No Case	654 Minnesota	4042-003 & 00	43,939	none	complete	2009	confirmed by UCSF via 7/13/2007 letter from UCSF and associated LoD
2007-2008								No Projects Approved During Allocation Period
2008-2009	2006.1294	110 The Embarcadero	3715-002	41,940	17804	doesn't count	n/a	18mos exp 7/14/10 - E appealed to BoS and overturned on 3/17/09. Application withdrawn and case closed on 12/30/09.
2009-2010	2009.0847	660 Alabama Street	4020-002	39,691	17973	complete	2011	CFC for building permit application no. 201001144798 issued on 3/23/11
2010-2011								No Projects Approved During Allocation Period
2011-2012	2011.0468	208 Utah / 201 Potrero	3932-017	48,732	18608	complete	2012	BPA No. 201205090093
	2012.0014	808 Brannan Street	3780-004D	43,881	18559	complete	2013	BPA No. 201201031584
	2012.0128	375 Alabama Street	3966-002	48,189	18574	complete	2013	BPA No. 201209010308
	2011.1049	385 7th / 1098 Harrison	3754-017	42,039	18700	complete	2013	BPA No. 201212115895
	2011.1410	275 Brannan Street	3789-008	48,500	18672	complete	2013	BPA No. 201207194925
2012-2013								No Projects Approved During Allocation Period
2013-1014	2013.0992	3130 20th Street	4083-002	32,081	19188			BPA No. 201403297604 for change of use approved by Planning on 1/6/15 and now awaiting changes from architect as requested by DBI as of 2/3/15.
	2013.0627	660 3rd Street	3788-008	40000	19234	complete	2015	BPA No. 201411252480 issued on 2/24/15.

O-MBA28L11

SMALL OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
2014-2015	2013.1600	340 Bryant Street	3764-061	47536	19311	under construction		BPA 201305177189 issued 7/15/15.

O-MBA28L11

LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
UNDER CONSTRUCTION
AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
1986-1987	1986.085	600 California	0241-003 into 0241-027	318,030	11077	complete	1992	
	1984.432	235 Pine	0267-015	147,500	11075	complete	1991	
	1984.274	33 Columbus	0195-004	61,300	11070	doesn't count	n/a	revoked 12/00
	1985.079	343 Sansome	0239-002	160,449	11076	complete	1991	
1987-1988								No Projects Approved During Allocation Period
1988-1989	1984.199	524 Howard	3721-013	199,965	11683	doesn't count	n/a	reapproved in 1998 under Case No. 1998.843.
1989-1990	1987.613	150 California	0236-003 into 0236-019	195,503	11828	complete	2001	
1990-1991	1989.589	300 Howard	3719-005 into 3719-018	382,582	13218	complete	2001	aka 199 Fremont Street
1991-1992								No Projects Approved During Allocation Period
1992-1993								No Projects Approved During Allocation Period
1993-1994								No Projects Approved During Allocation Period
1994-1995	1994.105	101 Second Street	3721-072	366,655	13886	doesn't count	n/a	Reapproved in 1997 under Case No. 1997.484.
1995-1996								No Projects Approved During Allocation Period
1996-1997	1997.484	101 Second Street	3721-72.75 into 3721-089	368,800	14454	complete	2000	
1997-1998	1997.215	55 Second Street	3708-019A/033/034 into 3708-096	283,301	14542	complete	2002	aka One Second Street
	1996.643	244-256 Front	0236-018	58,650	14601	complete	2001	aka 275 Sacramento Street
	1997.787	650 Townsend	3783-009	269,680	14520	complete	2001	aka 699-08th Street
	No Case	455 Golden Gate	0765-002/003	420,000	none	complete	1998	State office building. See also case no. 1993.707.
	1997.674	945 Battery	0135-001	52,715	14672	complete	1998	
	1997.470	475 Brannan	3787-031	61,000	14685	complete	2001	
	1998.144	250 Steuart	3741-028 into 3741-035	540,000	14604	complete	2002	aka 2 Folsom/250 Embarcadero
1998-1999	1998.135	One Market	3713-006	51,822	14756	complete	2000	
	1998.843	524 Howard	3721-013	201,989	14801	doesn't count	n/a	revoked 6/11 under Case No. 2011.0603
	1998.646	Pier One	9900-001	88,350	none	complete	2003	Port office building

O-MBA28L11

LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
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18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
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AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	1998.321	554 Mission	3708-015/017/018 into 3708-095	645,000	14893	complete	2003	aka 560/584 Mission
	1999.167	700 Seventh	3799-001 into 3799-008	273,650	14895	complete	2006	aka 625 Townsend
	1999.566	475 Brannan	3787-031	2,500	14884	complete	2001	addition to previous approval - 1997.470
	1998.268	631 Folsom	3750-090	170,000	14750	doesn't count	n/a	project converted to residential - allocation revoked 12/00.
1999-2000	1999.106	670 Second	3788-043/044	60,000	14907	complete	2001	
	1999.027	160 King	3794-025	176,000	14956	complete	2002	
	1998.714	350 Rhode Island	3957-001	250,000	14988	complete	2004	
	1998.902	First & Howard	3721; 3736; 3737	854,000	15006	complete/approved	405 Howard - 2005; 505-525 Howard - under review; 500 Howard - 2003	18 mos exp 9/2/01. Includes 3 of 4 buildings at First & Howard (see bldg #1 - 400 Howard - below): bldg #2 - 405 Howard (3737-030) - 460,000 gsf office - 200002172133 - complete); bldg #3 - 505-525 Howard (3736-121/114) - 178,000 gsf office - 200610316514 currently (8/4/08) under review by Planning (see also 2008.0001 for additional allocation); bldg #4 -500 Howard (3721-119) - 216,000 gsf office - 200006172952 - complete).
	1999.176	235 Second	3736-061 into 3736-123	180,000	15004	complete	2002	

O-MBA28L11

LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
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18 MOS. EXPIRED
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AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	2000.127	500 Terry Francois	3838; 3839 into 8721-001/010	280,000	15010	complete	2008	MB 26a
	1998.766	535 Mission	3721-068	252,000	15027	doesn't count	n/a	revoked and reapproved as residential
	1998.635	2101 Bryant	4080-007	148,000	15044	doesn't count	n/a	project converted to residential - allocation revoked 1/10/05
	2000.329	550 Terry Francois	3839; 3840 into 8721-001/011	225,004	15055	complete	2002	MB 28
	1999.583	899 Howard	3733-079	153,500	15062	complete	2005	
2000-2001	1998.902	First & Howard	3720-008	295,000	16069	complete	2008	First & Howard - Building #1 (400 Howard)
	2000.1293	550 Terry Francois	3839; 3840 into 8721-001/011	60,150	16110	complete	2002	addition to 2000.329.
	2000.1295	Mission Bay 26/2	3840; 3841 into 8721-001-012	145,750	16111	doesn't count	n/a	AKA MB 26 East. returned to cap for approval of 2002.0301
	1999.603	555 Mission	3721-69,70,78,...	499,000	16130	doesn't count	n/a	project revised - allocation revoked and reapproved under Case No. 2007.0798.
	2000.277	801 Market	3705-48	112,750	16140	doesn't count	n/a	project abandoned per letter from sponsor
2001-2002	2000.541	350 Bush	269-2,2a,3,22,...	344,500	16273	approved	n/a	18mos exp 5/8/03 - CPC received project status update on 10/11/07 (associated with 500 Pine Street - Small Office Approval). Sponsor email reports that 18-month period expired May 22, 2005 due to appeals. Building permit application no. 200708078938 currently under review by DBI/FD/DPW.
	2001.0444	38-44 Tehama	3736-111	75,000	16280	complete	2003	
	2000.319	235 Second	3736-61,62,64-67	64,000	16279	complete	2002	modify 1999.176 - convert warehouse from PDR to office.
	2001.0689	250 Brannan	3774-25	113,540	16285	complete	2002	
	2001.0798	555 Mission	3721-69,70,78-81, 120	549,000	16302	complete	2008	
	2002.0301	Mission Bay 42/4	8709-10	80,922	16397	doesn't count	n/a	revoked and reapproved as 2002.1216 (1600 Owens)
	2002.0300	1700 Owens	8709-007	0*	16396	complete	2007	Alexandria District (160,100). West Campus. 164,828
2002-2003	No Case	7th/Mission GSA	3702-15 ...	514,727	none	complete	2007	Federal Building
	2002.0691	499 Illinois/201-16th Street	3940-001	429,542	16483	doesn't count	n/a	revoked and reapproved as 2006.0384 (201 16th Street) MB Block X4

O-MBA28L11

LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
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18 MOS. EXPIRED
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Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
2003-2004	2001.1039	55 9th Street	3701-063	268,000	16760	doesn't count	n/a	200408111247 issued 5/19/05 - Authorization REVOKED by Planning Commission Motion Nos. 17521 and 17522 for proposal to convert project to residential use.
	2000.1229	Pier 30-32	3770-001	370,000	none	doesn't count	n/a	E, K & I Cases created, no B case created. BCDC permit approved in 2003 and allocation made for accounting purposes, but permit never acted upon. 2/09 - 370,000 added back to cap because project does not appear to be moving forward.
	No Case	Presidio - Letterman Digital Arts		839,301	none	complete	2006	
2004-2005								No Projects Approved During Allocation Period
2005-2006	2006.0384	201-16th Street	3940-001	430,000	17223	complete	2008	aka 1409-1499 Illinois/MB Block X-4. 18 mos exp 10/6/07. Project (200607186938) complete 11/19/08
2006-2007	2006.1212	1500 Owens	8709-006	0*	17333	complete	2009	Alexandria District - West Campus (158,500); 200611298694 issued 5/24/07 (aka MBS Blk 41-43, Parcel 5). Under construction. Estimated completion in March 2009.
	2006.1216	1600 Owens	8709-004/010	0*	17332	approved	n/a	Blk 41-43, Parcel 4. 200711097802 issued 6/3/08. Piles driven, no further work performed. Not currently active 5/18/2011
	2006.1509	Alexandria District - North Campus (MB 26/1-3; 1455 Third Street/455 Mission Bay South Blvd/450 South Street)	8721-012/8720-011/016/017	0*	17401	complete/approved	n/a	MBS Blk 26, Parcels 1-3, project proposes 3 buildings - building permit application no. 200704279921 (455 Mission Bay South Blvd.) COMPLETE on 11/17/09 for 5 story office/lab; 200705090778 (450 South Street) COMPLETE on 10/23/09 for "parking garage with 7 stories new building." 200806104062 filed on 6/10/08 for new 10-story office building - Issued 4/23/10, but not under construction.
	2006.1536	1515 Third Street	8721-012	0*	17400	approved	n/a	MBS Blk 27, Parcel 1 see also 2006.1509. 200806265407 filed 6/26/08 for 6-story office building - currently (9/29/08) being reviewed by SFFD. Sold to salesforce.com with 202,983 sf allocation as of April 2011.
	2005.1062	650 Townsend	3783-009	375,151	17440	complete	2009	18 mos exp 12/7/08. 200705151356 issued 2/20/08 - Conversion of existing structure into office - no major construction required. Final Inspection (3/16/09)

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LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

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Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	2006.0616	120 Howard	3717-019	67931	17466	complete	n/a	Construction completed in 2012
	2006.1273	535 Mission	3721-068, 083	293,750	17470	approved	n/a	18 mos exp 2/2/09; 2/12/08 - 200508049463 issued by CPB on 8/21/08. Appealed to Board of Permit Appeals on 8/29/08 (Appeal No. 08-137) - appeal withdrawn and permit reinstated on 8/29/08. Separate permits issued for pile indicators, site cleanup and fencing. 10/24/08 - Construction started in early 2013.
2007-2008	2006.0660	100 California	0236-017	76,500	17544	approved	n/a	18 mos exp 7/31/09. No building permit on file as of 5/18/11. Beacon Capital started the process and then allegedly sold to Broadway Partners, who are reputed to be current owners- no current status 6/16/14 update - Broadway Partners website lists the property as theirs. No building permits relating to project on file. Site visit on 6/17/14 shows no signs of upcoming construction activity.

O-MBA28L11

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Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	2008.0001	505-525 Howard	3736-001;004/114/121	74,500	17641	approved	n/a	18 mos exp 12/26/09. 200610316614 for new construction COMPLETED on 3/11/14. "First & Howard" bldg 3 - see 1998.902, 2005.0733 on file to legalize existing surface parking lot.
	No Case	680 Folsom Street	3735-013	117,000	none	approved	n/a	Redevelopment (Yerba Buena)
	2008.0850	Alexandria District	various	1122980	17709	approved	n/a	Establishes Alexandria Mission Bay Life Sciences and Technology Development District ("Alexandria District") to consolidate previous and future allocations.
	2008.0484	600 Terry Francois	8722-001	0*	17710	approved	n/a	Alexandria District - East Campus (312,932) - schematic design.
	2008.0483	650 Terry Francois	8722-001	0*	17711	approved	n/a	Alexandria District - East Campus (291,367) - schematic design.
	2008.0690	1450 Owens	8709-006	0*	17712	approved	n/a	Alexandria District - West Campus (61,581) - schematic design as of 4/2011
2008-2009								No Projects Approved During Allocation Period
2009-2010	2009.1026	850-870 Brannan Street	3780-008/007/007A/072	138,580	18095	complete	2013	aka 888 Brannan Street
	2007.0946	Candlestick Point - Hunter's Point	Candlestick Point and Hunter's Point Shipyard	800000	18102	approved	n/a	NO ALLOCATION GRANTED YET. First 800,000 gsf of office development within the Candlestick Point - Hunter's Point Project Area to receive priority office allocation over all projects except the Transbay Transit Tower or those within Mission Bay South.
	2006.1106	222 Second Street	3735-063	430,650	18170	approved	n/a	BPA No. 200711309386
2010-2011	No Case	Alexandria District	various	200000	17709	approved	n/a	additional allocation per terms of Motion 17709 by Letter of Determination
	2006.1524	350 Mission Street	3710-017	335,000	18268	approved	n/a	
	2007.0903	Treasure Island	1939-001/002	0	18332	approved	n/a	Priority Resolution Only for 100,000gsf.
2011-2012	No Case	Alexandria District	various	27020	17709	approved	n/a	additional allocation per terms of Motion 17709 by Letter of Determination
	2011.0583	850-870 Brannan Street	3780-006, 007, 007A, and 072	113,753	18527	approved	2013	aka 888 Brannan Street
	2011.1147	601 Townsend Street	3799-001	72,600	18619	approved	n/a	BPA No. 201408063120 approved by Planning on 8/8/14, but not yet issued by DBI.
	2009.0885	1100 Van Ness Ave	0694-010	242,987	18599	doesn't count	n/a	CPMC - Cat Hill MOB; rescinded & reallocated in 2013 cycle
	2011.0895	460-462 Bryant St	3763-015A	59,475	18685	under construction	n/a	BPA No. 201312194664 issued on 5/22/14.
	2012.0041	444 DeHaro St	3979-001	90500	18653	under construction	2013	BPA No. 201312194626 issued on 12/31/13.
	2012.0409	185 Berry St	3803-005	101,982	18690	under construction	n/a	aka China Basin Landing.

O-MBA28L11

LARGE OFFICE APPROVALS - STATUS OF ALL PROJECTS

COMPLETE
REVOKED
18 MOS. EXPIRED
NO INFORMATION / NOT APPLICABLE
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AWAITING ADDITIONAL INFORMATION

Date	Case No.	Address	APN	Size	Motion	Status	Completion	Comments
	2012.0371	100 Potrero Ave.	3920-001	70070	18704	complete	2013	EN Legitimization. BPA No. 201212286973 issued 5/6/13.
	2009.0886	3615 Cesar Chavez	6576-021	99,848	18595	doesn't count	n/a	CPMC - St. Luke's MOB; rescinded & reallocated in 2013 cycle
2012-2013	2012.0257	101 1st Street	3720-001	1,370,577	18725	under construction	n/a	Transbay Tower; aka 425 Mission St. BPA No. 201303132080.
	2007.0456	181 Fremont Street	0308-001	361038	18764	under construction	n/a	BPA No. 201305015894 issued 12/26/13.
	2012.1046	1550 Bryant Street	3923-006	108,399	18732	complete	2013	EN Legitimization. BPA No. 201302069627
	2012.1482	1800 Owens	8727-005	700000	18807	approved	n/a	currently under review at OCII, DBI and SFFD. Approved 2/14/13
	2009.0885	1100 Van Ness Ave	0694-010	242987	18890	under construction	n/a	CPMC - Cat Hill MOB
	2009.0886	3615 Cesar Chavez	6576-021	94,799	18886	approved	n/a	CPMC - St. Luke's MOB
	2007.0385	345 Brannan Street	3788-039	102285	19000	under construction	n/a	Construction started in early 2014.
	2012.0799	270 Brannan Street	3774-026	189000	18988	under construction	n/a	BPA No. 201312174402 issued on 4/25/14. Foundation and Superstructure Addendum approved. Architectural Addendum under review by DBI/DPW/PUC. "Groundbreaking" in August 2014.
	2012.0906	333 Brannan Street	3788-042	175,450	18952	under construction	n/a	BPA No. 201306280744 issued 1/5/14. Planning approved Arch addendum on 2/20/14.
	2013.0276	350 Mission Street	3710-017	79,680	18956	under construction	n/a	Salesforce (No. 2). BPA No. 201108011461 issued 9/5/12. Planning approved Arch addendum on 9/11/14.
	2013.0585	999 Brannan Street	3782-003	143292	18950	complete	2014	EN Legitimization. BPA No. 201306280728 issued 4/28/14.
2013-2014	2012.0605	300 California Street	0238-002	56459	19034	approved	n/a	Approved 12/5/13. No BPA filed.
	2013.0226	665 3rd Street	3788-041	123,700	19012	complete	2013	BPA No. 201311222636 issued on 12/31/13 to legalize office space.
	2013.0544	410 Townsend Street	3785-002A	76000	19062	approved	n/a	BPA No. 201306260587 approved by Planning on 7/30/14, but now "in hold" at DBI as of 12/3/14.
	2013.0493	888 Brannan Street	3780-006, 007, 007A, and 072	10000	19049	complete	2014	AirBnB (No. 2) to convert GF parking to office.
	2013.0007	81-85 Bluxome Street	3786-018	55,000	19088	under construction	n/a	BPA No. 201404072588 issued 12/17/14. Arch addendum approved by all agencies except Planning.
2014-2015	2012.1187	501-505 Brannan Street	3786-038	137446	19295	approved	n/a	No BPA filed. The approved six-story office building project recently submitted a PPA to Planning proposing a "Phase II" for an additional 11 stories and 168,820 sf of office space.
	2012.0203	100 Hooper Street	3808-003	284471	19315	approved	n/a	BPA Nos. 201410239758 and 201410208377 approved by Planning on 4/13/15, approved by DBI 6/24/15. Currently under review by SFFD and SFPUC.

O-MBA28L11

BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

November 2, 2015

Tiffany Bohee
Executive Director
Office of Community Investment and Infrastructure
One S. Van Ness Ave., 5th Floor
San Francisco, CA 94103

ALAMEDA COUNTY
Tom Bates
Margaret Fujioka
Scott Haggerty
Nate Miley

CONTRA COSTA COUNTY
John Gioia
David Hudson
Karen Mitchoff
Mark Ross

MARIN COUNTY
Katie Rice

NAPA COUNTY
Brad Wagenknecht

SAN FRANCISCO COUNTY
John Avalos
Edwin M. Lee
Eric Mar
(Vice-Chair)

SAN MATEO COUNTY
David J. Canepa
Carole Groom
(Chair)

SANTA CLARA COUNTY
Cindy Chavez
Liz Kniss
(Secretary)
Jan Pepper
Rod G. Sinks

SOLANO COUNTY
James Spering

SONOMA COUNTY
Teresa Barrett
Shirlee Zane

Jack P. Broadbent
EXECUTIVE OFFICER/APCO

Subject: Response to Comments on the DSEIR for the Event Center & Mixed-Use Development at Mission Bay Blocks 29-32 (Project).

Dear Ms. Bohee:

The Bay Area Air Quality Management District (Air District) is willing to assist the City and County of San Francisco (City) by administering an off-site mitigation program to reduce this Project's significant air quality impacts to the extent feasible. As we have discussed extensively with City staff, the $321,646 identified in M-AQ-2b is not sufficient to achieve the 17 tons per year of ozone precursor emission reductions needed for this Project. Due to the nature of air quality impacts that need to be mitigated, comparison of the Air District off-site mitigation program identified for this Project to other air district programs is inappropriate and incorrect.

The amount of funds required to reduce 4.4 tons of reactive organic gases (ROG) and 12.6 tons of oxides of nitrogen (NOx), including a 5 percent administration fee, is $620,922. This amount is based on a study of the Air District's Vehicle Buy Back (VBB) program funds spent over the last 3 years and represents the average cost of reducing ROG and NOx during that three year period. Only through the VBB program can the Air District achieve the contemporaneous emission reductions and other conditions set forth in M-AQ-2b.

Air District staff continues to be willing to assist the City in implementing an off-site mitigation program. However, the Final Environmental Impact Report Response to Comments includes the following statement: "Acceptance of this fee by the BAAQMD shall serve as an acknowledgement and commitment by the BAAQMD to: (1) implement an emissions reduction project(s) within one year of receipt of the mitigation fee to achieve the emission reduction objectives specified above [i.e. 17 tons of ozone precursors per year]". Given this language, unless the City amends M-AQ-2b to fund this feasible mitigation measure at the $620,922 level previously discussed with City staff, the Air District will be unable to participate in offsetting this Project's air quality impacts.

EXHIBIT 4

O-MBA28L11

If you have any questions, please contact Alison Kirk, Senior Environmental Planner, at (415) 749-5169 or akirk@baaqmd.gov.

Sincerely,

Jean Roggenkamp
Deputy Executive Officer

cc: BAAQMD Vice Chair Eric Mar
BAAQMD Director John Avalos
BAAQMD Director Edwin M. Lee

O-MBA28L11

OCII
office of
COMMUNITY INVESTMENT
and INFRASTRUCTURE

DATE: November 2, 2015

TO: Tiffany Bohee, OCII Executive Director

FROM: Chris Kern, City Planning Department
Sally Oerth, OCII Staff

SUBJECT: BAAQMD November 2, 2015 letter re Ozone Precursors Offset Mitigation Fee

The City Planning Department and the staff of the Office of Community Investment and Infrastructure (OCII) have reviewed the November 2, 2015 letter from the Bay Area Air Quality Management District regarding the Warriors Event Center and Mixed Use Development Subsequent Environmental Impact Report (SEIR). The letter states that the $18,030 per weighted ton per year plus a 5% administrative fee mitigation fee identified in Mitigation Measure M-AQ-2b of the SEIR is insufficient to achieve the required reduction of 17.0 tons per year of ozone precursors. The letter proposes that the mitigation fee should be based on the BAAQMD's Vehicle Buy Back Program, at a cost of $620,922 (or approximately $36,525 per weighted ton per year) to achieve the required emissions reduction.

As discussed in the Draft SEIR (pages 5.4-41 through 5.4-42) and the Responses to Comments document (pages 13.13-65 through 13.13-69), the offset fee identified in Mitigation Measure M-AQ-2b is based on the California Air Resources Board (CARB) Carl Moyer program cost-effectiveness criteria. These criteria were developed by CARB to establish the upper limit for emissions offset projects eligible to receive funding through the Carl Moyer program.

Planning staff has been in communication with BAAQMD with regard to its suggestion that a higher fee may be warranted to offset project emissions to a less than significant level and found that BAAQMD could not establish that an increased rate beyond that of the Carl Moyer Program plus a five percent administrative fee could meet the "rough proportionality" standard required under CEQA. The Carl Moyer fee structure was reviewed and updated by CARB in March of 2015 and became fully implemented on July 1, 2015. The offset costs cited in Mitigation Measure M-AQ-2b Emission Offsets are consistent with those of the CARB and other operating California air districts. For example, in the Sacramento Metropolitan Air Quality Management District, the off-site construction mitigation fee rate is $18,030 per ton of excess NOx emissions as of July 1, 2015 (plus an administrative fee of 5 percent) and is based on the cost effectiveness formula established in California's Carl Moyer Incentive Program. In the San Joaquin Valley Air Pollution Control District, the Indirect Source Review (ISR) program requires that an offsite reduction fee of $9,350/ton plus a 4 percent administration fee be applied

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EXHIBIT 5

O-MBA28L11

for NOx emission reductions that cannot be achieved through onsite emission reduction measures. Furthermore, the offset costs in Mitigation Measure M-AQ-2b is consistent or even higher than comparable offset programs in the SFBAAB.[1]

The BAAQMD's November 2, 2015, letter does not establish that the CARB cost-effectiveness criteria are inappropriate for determining the offset costs under Mitigation Measure M-AQ-2b. Based on the information and analysis presented in the Draft SEIR, the Responses to Comments and supporting technical analyses, Planning Department and OCII staffs continue to believe that the offset fee established in Mitigation Measure M-AQ-2b is sufficient to achieve the required emissions offsets. In addition, as discussed in the Responses to Comments document, Mitigation Measure M-AQ-2b has been revised since publication of the Draft SEIR to allow the project sponsor to directly implement an emissions offset project as an alternative to entering into an agreement with the BAAQMD.

Therefore, for the reasons summarized above and discussed in greater detail in the SEIR and Responses to Comments, the November 2, 2015, letter from the BAAQMD does not alter the analysis or conclusions reached in the SEIR.

[1] Keinath, Michael, Rambol Environ, 2015. Analysis of the Proposed Offset Program for the Golden State Warriors. October 19, 2015.

O-MBA29L12

SMITH ENGINEERING & MANAGEMENT

November 13, 2015

Mr. Tom Lippe
Law Offices of Thomas N. Lippe, APC
201 Mission Street, 12th Floor
San Francisco, CA 94105

Subject: Subsequent Environmental Impact Report for Event Center and Mixed Use Development at Mission Bay Blocks 29-32. SCN:2014112045

P15003

Dear Mr. Lippe:

This is an addendum to my November 2, 2015 comments of the Responses to Comment ("the RTC") on the Subsequent Environmental Impact Report (hereinafter "the SEIR") on the above referenced Project in the City and County of San Francisco (hereinafter "the City"). This addendum focuses on additions to the Project that were not addressed in the DSEIR

My qualifications to perform this review were thoroughly documented in my letter of comment on the DSEIR dated July 26, 2015 and are incorporated herein by reference.

Central Subway/ T Third Electrical Power Distribution System Expansion

The Central Subway / T Third electrical power distribution system expansion is included in the proposed Project to provide additional traction power for expanded frequencies of LRT service associated with new special event operations. This traction power expansion feature would provide two new circuits from the existing King Street substation for the inbound and outbound circuits of the Central Subway / T Third. Providing duct banks for the new electrical connection for King Substation and the Central Subway line would involve trenching in the eastbound and westbound travel lanes of King Street between Second and Fourth Streets. This trenching would take place over a 6-month

1
[LC-TR-14]

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O-MBA29L12

period and would require lane closures while trenching and duct installation is actively taking place. Although the power distribution system expansion had previously been identified by SFMTA as a desirable long-term action, it is now incorporated in the subject Event Center and Mixed Use Development Project.

As noted in the third paragraph of SEIR Volume 4, page 12-11, the trenching work and duct installation on King Street associated with the electrical power distribution system expansion was not analyzed in the DSEIR.

Under CEQA, if the project changes after publication of the Draft EIR, and these changes create a new significant impact not identified in the Draft EIR, or a substantial increase in severity of a significant impact that was identified in the Draft EIR, the lead agency must recirculate the draft EIR for public comment. (CEQA section 21092.1.). Although the FEIR makes the conclusory statement that this would not result in new or more severe impacts than previously disclosed, there is no analysis to support this conclusion, which defies logic that this always busy boulevard would be unimpacted by lane closures over a period of six months.

1
[LC-TR-14]
cont.

Sincerely,

Smith Engineering & Management
A California Corporation

REGISTERED PROFESSIONAL ENGINEER
DANIEL T SMITH, JR.
No. 0938
Exp. 6-30-16
TRAFFIC
STATE OF CALIFORNIA

Daniel T. Smith Jr., P.E.
President

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I-Templeton

From: Warriors, PLN (CPC)
To: Basketball
Subject: FW: T"eedUP: GSW Arena a disaster for environmental justice and transit equity; ignores BART/Oakland Airport Connector precedents
Date: Monday, November 02, 2015 4:05:52 PM
Attachments: TeedUpTechnicalFoulsNov1.pdf

From: john@zenviba.com [mailto:john@zenviba.com]
Sent: Monday, November 02, 2015 8:30 AM
To: Warriors, PLN (CPC); Secretary, Commissions (CPC); Boomer, Roberta (MTA); mtaboard@sfmta.com; Jared Blumenfeld Jared; Derrin.jourdan@dot.gov; Amber.ontiveros@dot.gov; croberts@sfexaminer.com; matierandross@sfchronicle.com; sfburo@nytimes.com; Wayne Futak Bay City News Wayne Futak; John Templeton; Bohee, Tiffany (CII); jgarofoli@sfchronicle.com; cmarinucci@sfchronicle.com
Subject: T'eedUP: GSW Arena a disaster for environmental justice and transit equity; ignores BART/Oakland Airport Connector precedents

Dear Public Servants,

Please accept my attached submission with regard to the Subsequent Environmental Impact Statement concerning GSW Arena LLC's proposal to build an 18,000 seat arena, two office buildings, retail and open space in the Mission Bay redevelopment area.

After seeing the despicable comments by Planning Commissioner Michael Antonini last week, I was compelled to examine through critical race theory why the statement fails to comply with state and federal law and advisory opinions to address the profound environmental justice issues from the cumulative effects of decades of pollution centered on southeast San Francisco. The precedent for compliance was established firmly in the case of BART's Oakland Airport Connector.

Antonini wrote, as reported:

*Tech and Airbnb have saved San Francisco.

"Their effect has bought many new residents to San Francisco and helped to provide vitality to many of our neighborhoods that were heretofore economically depressed, unsafe, dirty areas of San Francisco to which few would travel to shop, dine and -much less-live... The population of the neighborhoods have changed dramatically. "

*Airbnb is better than... brothels?

"It's better to have short term renters sharing homes with owners, even in RH1 and RH2 neighborhoods, than to have multiple families living in a single family home or for such homes to be used for illegal criminal activities, often pretending to be message [sic] establishments."

For a decade, I engaged with the Excelsior and Bayview Hunters Point communities during the highly successful Branch Library Improvement Program as a board member of the Friends of the San Francisco Public Library, testifying before the Library Commission for the $1 million to build the Bayview Linda Brooks Burton Branch Library instead of just a remodeling. I found those people in the forgotten parts of the City to be hard-working,

1 [LC-GEN-2]

I-Templeton

determined to raise their families and hopeful that they would share in the blessings that San Francisco has to offer. I also spent a lot of nights coming from evening meetings, particularly on Third Street, waiting for the T-Line in the cold, dark of night for as much as an hour.

Now that we have the Bayview Linda Brooks Burton Branch Library open for public programs as a magnet for the neighborhood, it troubles me that potential visitors would not be able to attend because their access would be blocked by the substantial and unmitigated impacts from placing such a gargantuan arena at the choke point of the $2.2 billion investment of federal, state and local bond and property tax funds to build the T-Line, purportedly to finally link southeast to the rest of the City.

Unfortunately, Mr. Antonini's words are reflected in this EIR, because it assumes that the families of southeast San Francisco are much less valuable than the well-heeled luxury box purchasers who would enrich the owners of the Arena. Sports teams have morphed into a shell for real estate speculation. However, the desire to make windfall profits collides with the mandates of California's pioneering law in environmental justice, continually affirmed by the legislature since 1999 and most recently in advisory opinions by Atty. Gen. Kamala Harris.

It flies in the face of sustainable planning policy to move a large venue from a site which has access from an airport, Amtrak, BART, ACTransit and hundreds of acres of parking to rely on a single stop on the T-Line, which has failed to meet its promised service goals for the past eight years. The only conceivable reason is Antonini's assertion that certain types of people are more desirable. In the past year, two NBA franchises have changed hands because owners made similar admissions.

When the USF Dons had the opportunity in 1951 to play in the Cotton Bowl, only if they left their black players behind, the university and the players turned their back on the bowl, leading to their being labeled "the greatest college football team of all time." It is now time for our City officials to assert the primacy of justice over profit and reject this Arena.

1 [LC-GEN-2] cont.

I-Templeton

T'eedUP: Technical Fouls Make GSW Arena Bad for Environmental Justice Nov. 1, 2015

EXECUTIVE SUMMARY

A critical race theory analysis of the proposed Golden State Warriors Event Center in Mission Bay indicates that the Subsequent Environmental Impact Report falls short of the standards on the California Environmental Protection Act and the Executive Order 12898 because:

1. It does not address the cumulative effects of a Superfund site, proximity to a highway with more than 200,000 vehicles per day, two power plants and an open air waste water treatment plant and decades of governmental disinvestment on the largest concentration of affordable family housing in the nation's most expensive city for housing.
2. It breaks promises made to African-Americans throughout the city and Bayview-Hunters Point specifically about the T-Line being the artery to enhance access to the city' s economy.
3. It values wealth and race in land use decision-making to the financial, health and civic detriment of African-American, Latino and Chinese citizens.
4. It does not supply the stated objective of the General Plan to provide middle class jobs to a community which has 43 percent of the city median income.
5. Technically, it makes assertions that fly in the face of reality about transit. Narrative testimony from young people throughout the city describe a segregated transit system in which race and income determine how quickly one moves across the city.
   a. This project would block for more than 200 days per year the primary artery from Bayview-Hunters Point during peak hours.
   b. MUNI has a history of missing construction deadlines. The T-Line was 18 months late. The Central Subway was planned to open in 2009.
   c. This project would endanger children forced to use the Muni system to attend public schools and foster truancy or inability to participate in afterschool events.
   d. Utilization of the 22-Fillmore would impact African-American and Latino transit riders.
6. The Subsequent Environmental Impact Statement fails to include any consideration of Environmental Justice nor does it include an Equity Analysis.
7. Expert opinion indicates that it would be easier for most San Franciscans and other citizens throughout the Bay Area to reach the current location (a 15 minute BART trip) than to reach the new facility.
8. The Event Center will raise housing prices, increase real estate speculation, short-term leasing activity and displace minority home owners already having faced the most severe predatory lending activity in the country.
9. A much more effective use of the land would be the development of research and development geared to addressing health disparities, particularly in honor of the late Dr. B. Nathaniel Burbridge.

1 [AR-GEN-2] cont.

I-Templeton

T'eedUP

Profound Environmental Justice Issues with the Golden State Warriors Event Center EIR

- The T-Line currently is on time less than half of its scheduled runs; compared to the predecessor 15 bus line, it carries 20 percent more passengers, but operates 60 percent slower.
- GSW Event Center worsens the race and poverty related stress factors for the highest concentration of affordable housing in the City.
- The City and County of San Francisco has denied southeast San Francisco needed investment for 60 years, according to a 2004 civil grand jury report.
- The Draft Subsequent EIR contradicts the General Plan and the 1998 EIR for the Third Street Light Rail by ignoring the negative impact on Bayview-Hunters Point.
- The 30-Stockton line serving Chinatown is a proxy for the expected demand along the Central Subway. It also fails to achieve on-time operation half of the time. The proposed arena is right at the choking point where the current T-Line and additional Central Subway riders would intersect.
- A critical race theory analysis of the proposal indicates a long history of sports owners using African-American communities to gain public benefits but giving little in return in the Bay Area
- Open air waste treatment in Bayview Hunters Point would lift the smells from 18,000 event center patrons using the toilet into the homes of Bayview-Hunters Point residents, undoing gains in air pollution from closure of power plants.

1 [LC-GEN-2] cont.

John William Templeton

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T'eedUp

Technical Fouls Make Proposed Warriors Arena Bad for Environmental Justice

*By John William Templeton**

DEFINING ENVIRONMENTAL JUSTICE

Attorney General Kamala D. Harris defines environmental justice as "…the fair treatment of people of all races, cultures and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies," in an advisory for local and regional governments.[1]

The U.S. Department of Transportation requires that its grantees:

"avoid, minimize or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations;
"ensure the full and fair participation by all potentially affected communities in the transportation decision-making process;
"prevent the denial of, reduction in or significant delay in the receipt of benefits by minority and low-income populations.."[2]

***Templeton is co-founder of National Black Business Month and architect of Our10Plan, the African-American economic fairness plan. Given a lifetime achievement award in February 2015 by the S.F. Public Utilities Commission Celebrating Black Achievement program, he served six years on the board of the Friends of the San Francisco Public Library and was active in the Excelsior and Bayview branch campaigns. Author of context statements on African-American history in San Francisco and San Jose, he is creator of the California African-American Freedom Trail. He has presented on environmental justice to Region 9 of the Environmental Protection Agency, the National Park Service, California Historical Resources Commission and U.S. Army Corps of Engineers, Sacramento district. Conservator of the 20,000 image Clarence Gatson Collection and the Wesley Johnson Collection, he convenes the annual Preserving California Black Heritage conference.**

[1] Harris, The Honorable Kamala D. "Environmental Justice at the Local and Regional Level Legal Background, Department of Justice, State of California, (p. 1) 2012
[2] Transportation, U.S. Dept. of "Revised DOT EJ Strategy, March 2012 http://www.fhwa.dot.gov/environment/environmental_justice

1 [LC-GEN-2] cont.

In a 2012 regional videoconference[3] to Region 9 of the Environmental Protection Agency, this writer described southeastern San Francisco as a bellwether for the practice of environmental justice. Community members began addressing a variety of health and environmental factors in the 1940s, soon after World War II, and became famous in 1968 for sitting in at the office of the Secretary of the new Department of Housing and Urban Development until it received $50 million as one for the first two Model Cities initiatives.[4]

1 [LC-GEN-2] cont.

[3] Templeton, John William "The History of Environmental Justice," video conference, Region 9, Environmental Protection Agency, San Francisco, February 2012

[4] Templeton*, op. cit. Come to the Water: Sharing the Rich Black Experience in San Francisco, (ASPIRE SAN FRANCISCO) 2010*

CRITICAL RACE THEORY AND ENVIRONMENTAL JUSTICE

Critical race theory emerged as a scholarly field from the recognition that embedded practices in society lead to disparate outcomes. Foster[5] wrote:

> "Consider the problem of environmental racism, understood as the disproportionate distribution of environmentally harmful substances (such as lead) and land uses (such as hazardous waste facilities) in communities of color. As with most adverse racially disparate outcomes across a spectrum of social contexts and goods, there is no clear perpetrator or encompassing theory of causation that explains these outcomes. Indeed, as I have argued, these outcomes are best understood as yet another manifestation of the racism and discrimination that exists throughout our social structure-in housing discrimination, political disenfranchisement, and lack of access to health care and other social amenities."

Decisions for public infrastructure, in this analysis, can have long-lasting generational impacts such as the decision by the New Deal-era Federal Housing Agency to insist on racial covenants as a condition for federal mortgage insurance[6]. It took a 1946 Supreme Court decision to overturn the rule, but the effects for residential segregation have endured for more than 70 years.[7]

1 [LC-GEN-2] cont.

When the Bay Area attracted major league sports franchises in the 1950s and 1960s, it located all the facilities in African-American neighborhoods of San Francisco or Oakland.[8] Through the 1990s, all the major league teams played in Bayview Hunters Point or East Oakland, with combined football/baseball stadiums and basketball arenas attracting more than 150 events per year.

In the same year that Willie Mays arrived from New York with the San Francisco Giants, Roy Clay Sr. arrived in the Bay Area as a computer programmer on the most advanced such device in the world, at the Lawrence Radiation Lab in Livermore.[9] His contributions to programming

[5] Foster, Sheila D. "Critical Race Lawyering: Foreword," 73 Fordham L. Rev. 2027 (2005). Available at: http://ir.lawnet.fordham.edu/flr/vol73/iss5/1

[6] Fair Housing and Equal Opportunity, National Commission on "The Future of Fair Housing" http://www.civilrights.org/publications/reports/fairhousing/historical.html

[7] Ibid.

[8] Candlestick Stadium, Oakland/Alameda County Stadium and Coliseum, Cow Palace for the San Francisco Giants, Oakland A's, Oakland Raiders, San Francisco 49ers and Golden State (San Francisco) Warriors

[9] Clay, Roy, Sr. interviewee "Freedom Riders of the Cutting Edge," documentary, producers William Hammond and John William Templeton, Feb. 2009, KMTP-32 San Francisco

and technology led to his naming as a Silicon Valley Engineering Hall of Fame member in 2002.

Also in 1957, the Santa Clara County Board of Supervisors, in a racially-motivated decision, chose not to join the Bay Area Rapid Transit District (BART), choosing instead to spend its transportation resources on highway construction.[10]

That decision would increase pollution to the north along US. 101 and I-280, built through the same neighborhoods as Candlestick Park and make lucrative defense contractor jobs relatively inaccessible to thousands of African-Americans who had worked in defense industries in the East Bay and southeastern San Francisco since World War II.

In 2015, the ramifications which those decisions set in motion have created a community severely impacted by a variety of air and ground pollutants without the employment base to maintain middle class communities.

A critical race theory analysis of environmental justice must address the long-standing inequities that go beyond the project in question. Although the project sponsors are ignorant of these inequities and may claim no role in causing them, they are the beneficiaries of these decisions and should be held accountable for not worsening already dire circumstances.

The question San Francisco decision-makers should ask is "*Why take the risk of increasing pollution to the most severely impacted community in the city and worsening transit access in order to move a sports arena away from another low-income, minority community?*"

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cont.

In another decision of regional, long-lasting importance, the City and County of San Francisco now encourages, if not requires, its homeless or poverty-stricken African-American residents to use housing choice vouchers outside the city as far away as Fresno and Bakersfield, moving them even further away from opportunity.[11]

The consequences of its land use decisions must also take the same regional approach. A critical race theory approach is called upon to examine why the Subsequent Environmental Impact Report ("EIR") completely ignored the Bayview-Hunters Point General Plan, the Environmental Impact Report for the Third Street Light Rail and a long history of environmental racism towards the residents of southeastern San Francisco.

For example, the Subsequent EIR acknowledges:

> "significant and unavoidable impacts in the areas of transportation and circulation (traffic impacts at multiple intersections and freeway ramps, and transit demand on regional transit providers exceeding capacity), noise (substantial permanent

[10] Templeton, *op. cit.* "Historical Resource Evaluation," African-American Service Center development, San Jose for Stevens and Associates Architects 2010
[11] Morenek, Toshio "Affordable Housing Programs Affordable Only to the Affluent" http://america.aljazeera.com/articles/2015/2/3/san-francisco-affordable-housing-is-unaffordable.html

> increase in roadway noise and crowd noise affecting sensitive receptors); air quality (construction and operational emissions or ozone precursors exceeding thresholds) wind, (substantial increase in wind hazard hours at off site public areas and utilities (construction of new or upgrader wastewater facilities and determination by the San Francisco Public Utilities Commission that it currently has inadequate capacity to serve the project's wastewater demand."

For the City and County of San Francisco to accept such outcomes is an act of environmental racism comparable to the restrictive covenants of the New Deal federal housing agency and the Santa Clara County supervisors who rejected BART (only to welcome it in 2015 at a much higher cost).

Ironically, the Santa Clara County employers who turned their back on workers from the East Bay and San Francisco have now gained approval to have their private shuttle buses stop at public transit stops, blocking the regular MUNI lines for a minimal fee without seeking any remediation for the impact on the 60 percent of MUNI riders who are minorities.

For the second time in 50 years, a county government is using transit infrastructure to promote employment segregation. As Goldman writes:

> "Lower-income people should not bear the brunt of the negative externalities of economic development. "[12]

1
[LC-GEN-2]
cont.

The disparity in the response to the concerns of the affluent and powerful neighbors of Mission Bay speaks volumes in contrast to the complete avoidance of the environmental injustice to be heaped on the long-suffering residents of Bayview-Hunters Point.

See these comments by Planning Commissioner Michael Antonini:[13]

> *Tech and Airbnb have saved San Francisco.
>
> "Their effect has bought many new residents to San Francisco and helped to provide vitality to many of our neighborhoods that were heretofore economically depressed, unsafe, dirty areas of San Francisco to which few would travel to shop, dine and - much less-live... The population of the neighborhoods have changed dramatically. "
>
> *Airbnb is better than... brothels?
>
> "It's better to have short term renters sharing homes with owners, even in RH1 and RH2 neighborhoods, than to have multiple families living in a single family home or for such homes to be used for illegal criminal activities, often pretending to be message [sic] establishments."

[12] Goldman, Alexandra "The Google Shuttle Effect: Gentrification and San Francisco's Dot Com Boom 2.0" submitted in satisfaction of masters in city planning, UC-Berkeley, Spring 2013 p. 3
[13] Roberts, Chris, "Socialists," "Racism," And "The American Way": Planning Commissioner Has Hot Takes On Election " San Francisco Weekly, Oct. 29, 2015 http://m.sfweekly.com/thesnitch/2015/10/29/socialists-racism-and-the-american-way-planning-commissioner-has-hot-takes-on-election

Critical race theory highlights the importance of narratives to balance numerical processes which focus on the minutiae of individual projects without understanding how they affect people in the real world.

Talking to people in their own environment produces insights not available from outside "experts" with no cultural competency and different from what can be gathered through the typical public hearing format, with time limits on comments.

A process which says that notice was given in the legally proscribed way without any specific outreach into a community which has 43 percent of the median income of the city in general does not take into account financial and transportation pressures which can preclude participation in meetings, and the community's lack of resources to analyze massive amounts of data.

San Francisco's activists were legendary as relatively uneducated persons to take the time to study land use documents during the 1940s through the 1990s as the likes of Geraldine Johnson, Dr. Hannibal Williams and Mary Helen Rogers became more expert that the city officials they tormented.

A generation of health practitioners and scholars such as Dr. Arthur Coleman, a joint J.D./M.D. and Dr. Carlton B. Goodlett, an M.D. and Ph.D and dentists like Drs. Dan Collins and Zuretti Goosby also gave the community the capability to speak authoritatively to the powerful.

Just recently, residents near Candlestick stopped the plan to implode the stadium to prevent dust pollution.[14]

Fortunately, the activists group POWER has created an excellent narrative summary of the impact of race, poverty and transportation in San Francisco. Alicia Garza, the catalyst behind the Black Lives Matter movement, was co-director of POWER.

The new generation of activists also includes the web site Color of Change, founded by Van Jones.

With such visible activists and the history of public involvement, it is quite inconceivable that an Environmental Impact Statement affecting Bayview-Hunters Point and secondarily, the Mission, Chinatown and the Western Addition would omit the issue of environmental justice.

However, the Candlestick implosion idea was handled in the same backdoor fashion until the community found out about it.

Additionally, this writer has conducted more than 400 oral history interviews of African-Americans in San Francisco since 2003 and catalogued the artifact collections of Dr. Carlton B. Goodlett, former publisher of the San Francisco Sun Reporter; Clarence Gatson, photo editor of the Sun Reporter and Wesley Johnson Sr., and Dr. Wesley Johnson III, owners of nightclubs and pharmacies from the 1940s through the 1970s.

For the past nine years, the community has been encouraged to tell their stories through the Preserving California Black Heritage conference each September. The 2015 conference led to

1 [LC-GEN-2] cont.

[14] NBC Bay Area "Developers Don't Live Here: Bayview Resident says" Jan. 5, 2015 http://www.nbcbayarea.com/news/local/Developers-Ddont-Live-Here-SF-Resident-on-Demolition-of-Candlestick-Park-287552431.html

coverage by CNN, KGO and KPIX along with a Datebook article in the San Francisco Chronicle by uncovering an abandoned Sargent Johnson carving in the Western Addition neighborhood.

While raising funds for the Excelsior and Bayview branch library campaigns over the past ten years, this writer has had extensive experience catching public transit in the southeast part of the city after late night meetings. It has been apparent that there was a segregated transit system at work in the city, with different reliability standards based on the racial makeup of the neighborhood.

Reading about the proposed transit improvements offered to the basketball team caused him to explore the hypothesis in more detail.

Since 80 acres of Bayview were dedicated to slaughterhouses in the late 1880s, the community has borne the brunt of the city's progress, without sharing in it.

The customized treatment of the Event Arena is comparable to the difference between the city's two waste water treatment plants. The one in southeast San Francisco has been open air for 50 years, with smells apparent for miles and homes just feet away, contributing in no small way to profound health disparities and abridged mental health. The one at the Great Highway is completely contained with no smells.

Antonini's slip of the email, like the video of Donald Sterling and the memo from the Atlanta Hawks owner, are just glimpses into the mindset behind the policy decisions at work for professional athletics.

Critical race theory is designed to ferret out those ramifications without such clear-cut instances. It doesn't take a police shooting to determine whether "Black Lives Matter." The choices that governments and businesses make are even clearer indicators.

1 [LC-GEN-2] cont.

CRITICAL RACE THEORY AND SPORTS

It is not an accident that the most visible breakthroughs to end segregation in American society in the early and middle 20th century first came in sports. The Olympic victories of Jesse Owens and Joe Louis in the 1936 Berlin Olympics and the successful entry of Jack Roosevelt Robinson as the first black player in major league baseball were pivotal, according to UC-Santa Cruz sociologist Anthony Pratkanis.[15]

San Francisco was pivotal to the integration of sports because of breakthroughs dating back to the 1890s. In the field of horse racing, Alonzo Clayton won the California Derby at Ingleside Race Track and later won the Kentucky Derby.[16] Rube Foster brought the Chicago American Giants beginning in 1908 to play in the Pacific Winter League, the first integrated professional baseball league, a decade before he started the Negro National League in 1929.[17]

The University of San Francisco's first black athlete, Earl Booker, won the intercollegiate boxing championship in 1934. By 1951, Ollie Matson and Burl Toler led the team to an undefeated record and a Cotton Bowl berth[18]. Their teammates turned down the bid when informed that the black players could not compete, leading to a reputation as the "greatest college football team in history" with four future NFL Hall of Famers.

William Felton Russell and K.C. Jones, both graduates of McClymonds High School in Oakland, led USF basketball to consecutive NCAA championships along with an Olympic gold medal performance in 1956. Russell and Jones would continue their championship run for ten seasons in the National Basketball Association as part of the most successful franchise ever, helping to enhance the popularity of the sport and attract television viewers.

Major league sports, particularly football and basketball, have an important responsibility to protect the historic character of the neighborhoods which sacrificed years of pollution, disruption and slow growth to help those leagues achieve their current financial success through the help of public assets, in the long view of the critical race theory perspective.

The relevant question to answer is whether there is a corresponding benefit to the people of southeast San Francisco, who have already hosted the Warriors for almost a decade at the Cow Palace in the 1970s and hosted the Giants and 49ers for 50 years at Candlestick.

1 [LC-GEN-2] cont.

[15] Pratkanis, Anthony and Turner, Marlene "The Year Cool Papa Bell Lost the Battling Title: Branch Rickey and the First Affirmative Action Program," Chap. 22 in Our Roots Run Deep: the Black Experience in California, Vol. 2, 1900-1950 (ed.) Templeton, John William (ASPIRE SAN FRANCISCO)
[16] Templeton, op. cit. *Come to the Water,*
[17] Ibid. p.
[18] Ibid. p.

No evidence is offered to suggest that the arena would have any benefit to this community, such temporary event jobs have been available for decades. Any such jobs would be simply transferred from the East Bay into San Francisco with no net gain in opportunity.

Would Bayview-Hunters Point residents get to enjoy the facility as fans? POWER indicates that the most likely result is that San Francisco Police Department would step up enforcement of fare violations to actually discourage its residents from mingling with event center riders[19]. They note the shooting of a young man on the T-Line platform by two officers seeking to cite him for fare evasion

It is also noteworthy that two NBA owners lost their teams in the last year, in Los Angeles and Atlanta, for suggesting that their games attracted too many African-Americans (even if they were rich former NBA players).

It is profound evidence that the specter of race is at the heart of the decision-making to leave what BART director and transit expert Tom Radulovich calls the optimum transit location in its current site.[20]

Sports sociologist Harry Edwards suggests that a sports facility is the absolute worst investment to make near an impacted community:

> "…there is no option but to recognize that for increasing legions of black youths, the issue is neither textbooks nor playbooks—the issue is survival, finding a source of hope, encouragement, and support in developing lives and building legitimate careers and futures.
>
> Without question, the ultimate resolution to this situation must be the overall institutional development of black communities and the creation of greater opportunity for black youths in the broader society.

The current Warriors owners join a long array of sports entrepreneurs—Bob Lurie, Al Davis, Eddie DeBartolo, Larry Ellison, Lew Wolff and Jed York—who have played sports monopoly with Bay Area governments. In every case, the owners win.

1 [LC-GEN-3] cont.

[19] Bialick, Aaron, "Warriors Arena Moving to Mission Bay: A Win for Transit Accessibility?" SFStreetsblog, April 23, 2014
[20] Edwards, Harry "Crisis of Black Athletes on the Eve of the 21st Century," from Society, March/April pp. 9–13. Copyright © 2000 by Springer-Verlag New York Inc.

THE PROJECT

The Office of Community Infrastructure and Investment has prepared an EIR[21] on the plan by GSW Arena LLC, an affiliate of the National Basketball Association team Golden State Warriors, to build an 18,000 seat arena, two office buildings, retail and parking spaces on an 11-acre parcel across from the UCSF Mission Bay campus.[22]

Moved from an initial proposal to site the arena on Pier 32, the project takes the current strategy for sports facility development of relying on additional real estate properties to help underwrite the cost. It was also calculated to attempt to avoid the potential for a voter referendum on projects which exceeded height limits on the waterfront.

In addition to the 41 home games, the facility would be in use for as many as 200 events throughout the year, becoming an adjunct to existing convention venues. A memorandum of understanding between the chancellor of UCSF and the Warriors has been touted to address concerns that the arena would hamper traffic to the three new adjacent hospitals.[23]

If completed, the facility would move the franchise from the Oracle Arena in Oakland, which has nearby access to Oakland International Airport, a BART and Amtrak station, a bus yard and Interstates 580 and 880, in addition to parking for the adjacent baseball and football stadium.

The new site would be accessible directly by a station on the Muni T-Line as well as surface streets.

The proposed arena is an addition to expanded use of the T-Line resulting from current construction of the Central Subway to North Beach. [25] This subway, using $1 billion in federal transit funds, will stop at Union Square, and the Moscone Center with an anticipated 20,000 new riders.

Before voters on Nov. 3 is a proposal to create Mission Rock[26], a mixed use housing and retail development on the site of the Giants parking lot. More than 6,500 units of housing has been

1 [LC-GEN-2] cont.

[21] Planning, Dept. of "Draft Subsequent Environmental Impact Report", Volume 1, p 1-1
[22] Ibid.
[23] Golden State Warriors-UCSF Memorandum of Understanding 10-7-2015
[25] Planning, Dept. of "Draft Environmental Impact Statement Third Street Light Rail April 3, 1998 p. S-1
[26] "Mission Rock Affordable Housing, Jobs and Historic Preservation Initiative," ballot argument for Nov. 3 election http://sfgov2.org/ftp/uploadedfiles/elections/candidates/Nov2015/MissionRock_Text.pdf

built at Mission Bay adjacent to the UCSF campus.[27] Long-awaited plans for the development of Pier 70 with three million square feet of commercial space are in motion. [28] Sixteen hundred housing units are set for the former Schlage Lock site in Visitacion Valley[29] and the first homes are occupied of an eventual 10,500 (twice the current number of units in Mission Bay) in the Shipyard development on the former Hunters Point Naval Shipyard.[30]

1 [LC-GEN-2] cont.

[27] Dineen, J.K. "Last part of Mission Bay North gets under way," *San Francisco Chronicle* May, 24, 2015 http://www.sfchronicle.com/bayarea/article/Last-part-of-Mission-Bay-North-housing-6284483.php
[28] Port of San Francisco, Pier 70 Preferred Master Plan, p. 1
[29] Planning, Dept. of Schlage Lock Project Fact Sheet, Public Benefits and Features
[30] Fimrite, Peter, "Housing blooms at last at once toxic Hunters Point shipyard site," June 8, 2015 *San Francisco Chronicle*

TECHNICAL FOULS IN THE ENVIRONMENTAL IMPACT PROCESS

The proposed Warriors event center would strangle the only transit lifeline for the largest concentration of affordable housing in San Francisco, increase pollution from waste water and auto emissions and drive up housing costs.

POWER's *Next Stop: Justice: Race and Environment at the Center of Transit Planning* report found:

"Bus riders in the core communities of color in San Francisco are impacted by long waits and overcrowded buses. Comparing the MTA's data on the core lines that POWER members ride with the MTA's recorded system average we found that overwhelmingly, the on-time performance on each of these lines in southeast San Francisco is significantly worse than the system average."

Quoting rider Lorren Dangerfield:

"The T-train at night usually means at least 20-30 minutes waiting. Then often when the train does come, it's only running from downtown to 23rd St. It turns around before it even gets to Bayview. The buses that affect the poorest communities are the ones that run the slowest and least often."[31]

The T-Line in 2012 was the city's second most used light rail line, according to Next Stop: Justice, with 30,033 daily riders. It was only on-time 58 percent of the time with headway adherence (scheduled time between trips) on 45.3 percent of trips. At peak evening hours, 17 percent of the trips were overcrowded.[32]

1 [LC-GEN-2] cont.

This compares with the performance of the 15-Third bus line that it replaced in 2007:

"15 - Third Street. This is MUNI's primary bus route in the Corridor. The route is operated using articulated motor coaches and serves City College of San Francisco, Downtown, Chinatown, North Beach and Fisherman's Wharf via Third Street, Kearny and Montgomery Streets, and Columbus Avenue. Within the Corridor, the route primarily follows Third Street and Geneva Avenue. It provides regional connections with the Caltrain Terminal at Fourth and Townsend Streets and comes within two blocks of Caltrain's station at Paul Avenue. The route also connects with the BART and MUNI Metro subway systems at both the Montgomery and Embarcadero BART Stations, as well as with BART's Balboa Park Station. The route operates every five minutes during the a.m. peak period, every six to seven minutes during the p.m. peakperiod, and every ten minutes between these periods. Approximately 33 percent of the route's 24,200 daily boardings occur north of Market Street. [33]

The inherent bias towards approval of projects once they reach the stage of Environmental Impact Statement is demonstrated by the No Action option in the 1998 EIR. The same objective of the Third Street Light Rail could have been met by purchasing 40 more articulated

[31] POWER "Next Stop: Justice: Race and Environment at the Center of Transportation Planning," 2012 p. 4
[32] Ibid. p. 6
[33] Planning, Op. cit. Third Street Light Rail p. 3-2

buses. Yet, as the civil grand jury notes, the Third Street Light Rail went forward despite costing ten times the originally budgeted amount. The cost overruns would compromise MUNI's ability to conduct scheduled maintenance on its fleet for a decade.

Like a trick shot in pool, it would also impact low-income communities in the Western Addition, Mission and Chinatown as the 22-Fillmore is anticipated to serve the arena and the current 30-Stockton would see its riders use the Central Subway. Additionally, once the Central Subway is completed in 2019, T-Line riders will no longer connect with Muni Metro.

In 2019, the T-Third/Central Subway will become an independent train system with no direct connection to the rest of Muni Metro, BART and the ferry system. [34]

The Memorandum of Understanding between UC-SF and the Warriors is only the latest instance of this project ignoring the principles of environmental justice. Repeatedly, the potential impacts on the people of southeast San Francisco are ignored at every stage of the process. Within more than 2,500 pages, the topic never comes up.[35]

In addition, the Arena's siting and proposed operation is likely to contribute to the dramatic outmigration of African-Americans from San Francisco. Studies of similar sports arenas using the real estate investment strategy show such an effect.[36]

1 [LC-GEN-2] cont.

The Failure of the T-Line

In 1998, a similar environmental impact statement described the T-Line as "a key infrastructure improvement to help support the economic and physical revitalization of the Bayview Hunters Point commercial core and the planned development in Mission Bay."[37]

The Bayview-Hunters Point general plan labels the T-Line as [38]

> ".. the nucleus for public transit improvements and socio-economic revitalization efforts in the corridor, and prioritize the efficient movement of the light rail by reducing conflicts with automobile and truck traffic."

In 2005, this writer presented an exhibition at the Bayview Branch Library called SFSoul: Taste the Excitement. It documented the role of the two dozen African-American nightclubs

[34] Civil Grand Jury, Op. cit. p. 22
[35] Ibid. p. 6
[36] Messmer, Patrick D. "Inner Cities, Private to Private Eminent Domain Transfers and Public Financing of Stadiums, Seton Hall Law School http://scholarship.shu.edu/cgi/viewcontent.cgi?article=1269&context=student_scholarship
[37] Planning, Op. Cit. Draft Environmental Impact Statement, Third Street Light Rail, p. S-1
[38] Planning, Dept. of "San Francisco General Plan-Bayview-Hunters Point Policy 4.3 http://www.sf-planning.org/ftp/general_plan/Bayview_Hunters_Point.htm#BHP_TRA_4_3

between the 4000 and 6700 block of Third Street, the longest continuous black business district in California.[39]

Those clubs were bases for athletic leagues and charitable drives as the social centers of a majority African-American neighborhood.

The construction of the T-Line for three years created a significant hurdle for those businesses.

However, the benefit to the community was a link which would make the isolated community integrated with the city's main employment centers.

> "Buses caught in Corridor traffic often provide unreliable service south of Downtown. Currently, passengers may experience overcrowding and extended waiting times between buses, as well as slower operating times and increased travel times. This situation is projected to worsen as traffic in Downtown and along the Corridor increases to 2015 levels."[40]

In 2015, the Controller's Office found in its 2015 biennial survey of citizen satisfaction with city services that residents of Supervisorial District 10, which is bisected by the T-Line had the lowest satisfaction of any residents in the City with Muni services.[41]

1 [LC-GEN-2] cont.

[39] Johnson, Jason "New look at black restaurateurs: photo exhibit highlights diversity of cuisine, culture," *San Francisco Chronicle,* Aug. 13, 2005
[40] Planning, Op. Cit. Third Street Light Rail 1998 p. S-4
[41] Controller, City and County of San Francisco Biennial City Performance Survey http://sfcitysurvey.weebly.com/muni.html

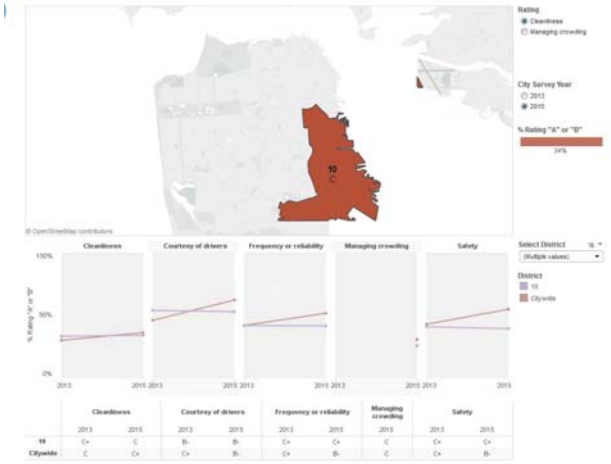
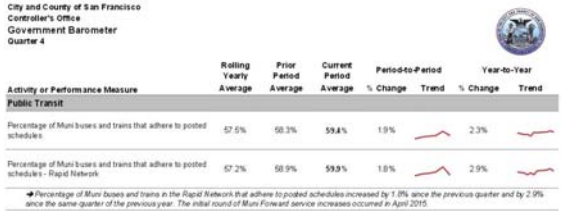


Figure 1. 2015 Citizen responses to question on Muni on-time performance in District 10. Source, Controller

The Controller's performance review of all city departments found that MUNI overall achieved less than 80 percent of the goal spelled out in the City Charter.[42]

The August 20 report from the Controller showed that citywide, MUNI reliability declined from the previous year.[43]



City and County of San Francisco
Controller's Office
Government Barometer
Quarter 4

Activity or Performance Measure	Rolling Yearly Average	Prior Period Average	Current Period Average	Period-to-Period % Change	Period-to-Period Trend	Year-to-Year % Change	Year-to-Year Trend
Public Transit							
Percentage of Muni buses and trains that adhere to posted schedules	57.5%	58.3%	59.4%	1.9%		2.3%	
Percentage of Muni buses and trains that adhere to posted schedules - Rapid Network	57.2%	58.9%	59.5%	1.0%		2.9%	

→ Percentage of Muni buses and trains in the Rapid Network that adhere to posted schedules increased by 1.0% since the previous quarter and by 2.9% since the same quarter of the previous year. The initial round of Muni Forward service increases occurred in April 2015.

Figure 2. Muni performance on Charter goals April-June 2015 from Quarterly Government Barometer. Source, Controller City Services Auditor

1 [LC-GEN-2] cont.

[42] Controller, Quarterly Government Barometer, April-June 2015 http://sfcontroller.org/Modules/ShowDocument.aspx?documentid=6693
[43] Controller, *Ibid.*

The 1998 EIR for the Third Street light rail projected a 39 percent increase in corridor population and a 35 percent increase in corridor employment by 2015.[44]

> "As a result of the projected population and employment growth in the Corridor, traffic congestion on major highways and arterials, particularly Highway 101 and Third Street, is expected to increase substantially. Highway 101 at Cesar Chavez is expected to be Level of Service (LOS) F (excessive delays) and LOS E at intersections of Third and Cesar Chavez and at Bayshore and Arleta."

The first goal of the project was "Improve transit service to from and within the Corridor, thereby enhancing the mobility of Corridor residents, business people and visitors."[45]

In 1997-98, the 15 Line provided six minute schedules. The No Build alternative would have reduced its schedule to five minute increments. The promise that light rail would improve that performance has proven false. Only 34 percent of District 10 residents give MUNI an A or B grade for on-time performance, one in three.[46]

For the first EIR of the T-Line, the City and County of San Francisco underestimated the 2015 population of San Francisco by 40,000, with much of the unforeseen growth happening along the T-Line corridor.[47]

The Civil Grand Jury also noted that the T-Line Light Rail came in at $678 million for construction, overwhelming the $200 million bond passed to address the entire city's transportation needs.[48]

There is no reason to believe that a hastily done EIR for a second-choice site, without any of the four years of community input which the T-Line conducted from 1993-97, will address the serious issues raised by the original construction of the Third Street Light Rail Line.

> Anyone who was using Muni regularly around the time of the T-Third rollout should remember the process as being anything but smooth. One of the reasons cited for the bumpy rollout was the internal decision to use outdated ridership models. The original ridership models forecasted a 2005 opening for the line. However, the line did not open until 2007.[49]

1 [LC-GEN-2] cont.

[44] Planning, Op. Cit. Third Street Light Rail 1998 p. S-2
[45] Planning. Ibid. p. S-2
[46] Controller, City Survey 2015, Muni http://sfcitysurvey.weebly.com/muni.html
[47] Planning, Op. Cit. Third Street Light Rail 1998 p. S-2
[48] Civil Grand Jury, Superior Court "Central Subway: Too Much Money for Too Little Benefit," 2010-2011 term.
[49] Ibid. p. 15

A Spur for Gentrification

Compared to the relative racetrack pace for the Warriors arena, it took from 1993 to 2007 for the merchants and residents of Third Street to finally see the light rail line which had been promised to them.[50]

> The five segments that make up the Corridor between Visitacion Valley and the Caltrain Terminal have a high proportion of minority residents. According to the 1990 Census, 50 percent of this portion of the Corridor is Black, 31 percent is Asian, 15 percent is White, and 10 percent is Hispanic. These proportions contrast with the racial distribution of San Francisco residents, who are less than 1 percent Black and 53.6 percent White. The highest proportion of Black residents is found in Segments 2 and 3 (58 and 67 percent, respectively), while most of the Hispanic population resides in Segments 1 and 2. Asians from the predominant population group in Segment 1; whereas, Segments 4 and 5 have mostly White populations. [51]

In 1992, the San Francisco Human Rights Commission published Unfinished Agenda, a report which described the unequal conditions of African-Americans in San Francisco, then still ten percent of the population of 750,000.[52]

In 1962, poet James Baldwin toured Bayview Hunters Point with a National Educational Television crew describing conditions not unlike Mississippi along the hillside.[53]

The next year, young people from the community launched the most successful civil rights campaign of the 1960s, the United San Francisco Freedom Movement. [54] Led by Bill Bradley Jr., a Marine veteran and law student; and Tracy Sims, a Berkeley High graduate, the

1 [LC-GEN-2] cont.

[50] Polaris Research and Development "The Unfinished Agenda: The Economic Status of African-Americans in San Francisco, 1964-1990
[51] Planning, Op. cit. "Third Street Light Rail EIR," 4-26
[52] National Educational Television "Take This Hammer," featuring James Baldwin (1963) produced by KQED https://vimeo.com/13175192
[53] Ibid.
[54] Templeton, John William (curator) "Students and Scholars Marching for Civil Rights exhibition of the 50th anniversary of the United San Francisco Freedom Movement, San Francisco Fairmont, Civic Center Holiday Inn public program featuring Dr. Oba T'Shaka, emeritus professor of black studies, San Francisco State University (Bill Bradley Jr)

campaign married the resources of the Congress of Racial Equality, NAACP and the Crispus Attucks Clubs of Bayview-Hunters Point, led since 1948 by Mrs. Ardith Nichols.[55]

Highpoints included the Palace Hotel sit-in on March 5, 1964 and the Auto Row sit-ins in May of that year. Eventually, 375 companies signed employment agreements, including all of the Big Three automakers.

Lawyers for the movement, Terry Francois and Willie L. Brown Jr. were elected to the Board of Supervisors and California Assembly. Despite relocation from the building of U.S. 101 and redevelopment activities in South of Market, Western Addition and Hunters Point, the bulk of the black community settled into middle class enclaves of home ownership throughout Bayview and Ocean-Merced-Ingleside. Subsidized apartments in the Western Addition and Hunters Point provided affordable renter space.

As late as 2000, San Francisco had 35 percent of its black labor force in management and professional jobs, the highest percentage in the country.[56]

Disparate policies began to break apart a community that produced the likes of Maya Angelou, Johnny Mathis and Danny Glover in the 1960s. The extended denial of public transit coupled with pollution from U.S. 101 combined with the residue of the Hunters Point Shipyard to create some of the most toxic pollution in the country.

Despite the problems, isolation from the rest of the city allowed the workers from the Butchertown slaughterhouse district and longshoremen to live in stable middle class communities.

"Singing" Sam Jordan, "the mayor of Butchertown", used those workers as a power base to actually run for mayor of San Francisco in 1963. The former boxer opened his namesake club Sam Jordan's at 4004 Third Street in 1959.[57]

The Long Island Club became a magnet for entertainers and athletes as the highest paid professional players in baseball and basketball, Willie Mays and Wilt Chamberlain, both competed in San Francisco.

Presence of the Candlestick football and baseball stadium and Cow Palace basketball and boxing arena helped sustain the clubs and bars along Third Street.

However, a series of changes in the sports business would remove those amenities. Although a $100 million bond to refurbish Candlestick for the 49ers was passed in 1997, the team declined

1 [LC-GEN-2] cont.

[55] Bayview's Last Stand, third annual Preserving California Black Heritage conference at Southeast campus, City College, September 2009 featured community artifacts day at Sam Jordan's Bar
[56] Ibid.
[57] Ibid.

to take the offer.[58] As the Los Angeles Times noted, only ten percent of the 49ers fans actually lived in San Francisco.

The year before, the Giants followed in the wake of Baltimore's Camden Yards to build a stadium at Third and King Streets. With the presence of the California Institute for Regenerative Medicine, the stadium would spark a nearby real estate boom.[59]

Construction of the Third Street light rail line would not deliver the promised gains for the longtime residents of this area, but a source of construction dust and decay for the Bayview-Hunters Point business district.

When interviewed in 2005 for the SFSoul exhibition, long time owners said they were just barely hanging on with a fraction of their normal customers.[60]

Unlike the EIR for the GS Warriors Arena, the Third Street light rail EIR of 1998 contained a section of "Environmental Justice Considerations" citing Executive Order 12898, signed by President Bill Clinton in Feb. 1994. A memorandum issued with the order said that a National Environmental Protection Act (NEPA) analysis must include "effects on minority communities and low-income communities."[61]

For the purposes of the analysis, South Bayshore was 91 percent minority in 1998.

The example of the Barclays Center in Brooklyn, opened two years ago, indicates how the new model of sports facility, as a development spur instead of an event venue, worked against the interests of impacted communities.

Messmer analyzed its impact on the population of Brooklyn[62]:

> "While NYC as a whole saw a net loss of nonhispanic whites of -2.8, Brooklyn saw a 4.5 percent increase in the number of nonhispanic whites. "

The study also reported a 5.8 percent drop in Brooklyn's black population.

"As the Barclay Center drove up real estate values, it began pricing economically disadvantaged minorities out of the market," wrote Messmer.

Since 1992, the date of the Unfinished Agenda report, the black population of San Francisco has fallen from 10 percent to 5.8 percent in 2013.[63]

1 [LC-GEN-2] cont.

[58] Simers, T.J. THE NFL / T.J. SIMERS : 'Ours' for the Taking? : If Stadium Referendum in San Francisco Fails Today, the L.A. 49ers Might Not Be as Crazy as It Sounds Los Angeles Times June 3, 1997 http://articles.latimes.com/1997-06-03/sports/sp-65243_1_san-francisco-49ers
[59] Dineen, Op. Cit. San Francisco Chronicle, May 24, 2015
[60] Johnson, Op. Cit., San Francisco Chronicle, Aug. 13, 2005
[61] Planning, Op. Cit. Third Street Light Rail EIR p. 5-13
[62] Messmer, Op. Cit.
[63] Census, U.S. American Community Survey 2015

An outmigration task force in 2010 produced a list of recommendations to address the decline, which were ignored.[64]

In 2014, the San Francisco African-American Chamber of Commerce issued a call for a tourism boycott of San Francisco's $9 billion industry. An agreement with city officials to remove that call has also been forgotten.[65]

The Golden State Warriors Arena would be the third attempt by Mayor Ed Lee to place a sweetheart deal in the hands of billionaires for the waterfront. The city lost $11 million on the America's Cup at the hands of Larry Ellison;[66] and the voters blocked the 8 Washington luxury development.

In contrast to the $11 million to Ellison and the $34 million in tax breaks to Uber, Twitter, et.al.[67] in Mid-Market, the city has spent less than $1 million with businesses on Third Street as three-fourths of the historic black restaurants present in 2005 are still in business despite decades of previous success.

The oldest black bookstore in the country, a landmark of black literary genius, was sold at auction because the City refused to extend $1 million in loans to the business.[68]

These incidents and many others speak to the continuing failure of the City and County of San Francisco to comply with community benefit agreements and to incorporate environmental justice into its land use decision making.

1 [LC-GEN-2] cont.

Community? What Community?

The precedent for environmental justice litigation rests with a train line which runs adjacent to the current site of the Golden State Warriors.

As Public Advocates describes[69]:

[64] Human Rights Commission, "Report of the San Francisco Mayor's Task Force on African-American Outmigration" 2009
[65] O'Conner, Lydia "Black Business Leaders Call for Boycott of San Francisco Tourism," Huffington Post Dec. 23, 2013 http://www.huffingtonpost.com/2013/12/23/black-boycott-san-francisco-tourism_n_4494850.html
[66] Budget and Legislative Analyst, Board of Supervisors "Analysis of the Impact of the 34th America's Cup to the City" Feb. 10, 2014
[67] Lang, Marissa "Companies avoid $34 million in city taxes thanks to "Twitter tax break," San Francisco Chronicle Oct. 19, 2015
[68] Holloway, Lynette "Doors shuttered at Nation's Oldest Black Bookstore," The Root, May 11, 2014 http://www.theroot.com/articles/culture/2014/05/marcus_books_the_nation_s_oldest_black_bookstore_closes.html

"In September 2009, Public Advocates filed a successful civil rights administrative complaint with the Federal Transit Administration (FTA) on behalf of our partners Urban Habitat, Genesis, and TransForm. The complaint challenged Bay Area Rapid Transit's (BART's) controversial Oakland Airport Connector (OAC) project, alleging that in BART's rush to build the OAC, the agency violated federal rules implementing Title VI of the Civil Rights Act of 1964 — rules that require transit agencies to analyze whether their projects have a disproportionately negative impact on low-income and minority populations.

Why We Advocated Against the OAC

"The $492 million OAC was conceived as a three-mile elevated tramway connection from the BART Coliseum station to the Oakland International Airport, and would eliminate the existing cost-effective AirBART shuttle service.

"It would provide little, if any, transit mobility benefits to the area's overwhelmingly low-income and minority residents due to its prohibitive $12 roundtrip fare and its lack of intermediate stops along the job-rich Hegenberger corridor. BART's own analysis predicts that less than 3 percent of the OAC riders will come from the immediate East Oakland neighborhoods surrounding the project.

1 [LC-GEN-2] cont.

Victory! The FTA Acts to Enforce Civil Rights

"In response to our complaint, in October 2009 the FTA began conducting a sweeping on-site compliance review of BART, finding many civil rights deficiencies.

"Based on BART's failure to conduct an equity analysis of the OAC, in February 2010 the FTA pulled $70 million in American Recovery and Reinvestment Act funds from the project — the first action of its kind in the nation. The strong action underscored a promise made in President Obama's State of the Union address to continue "prosecuting civil rights violations."

"The federal stimulus funds were recaptured by Bay Area transit agencies, including AC Transit, and used to maintain existing transit service and jobs. To remedy the many civil rights deficiencies identified by the FTA, BART was also required to implement a corrective action plan, which we and our allies have been monitoring, and which we responded to in May 2010.

[69] Public Advocates "BART/Oakland Airport Connector" Sept. 3, 2009 http://www.publicadvocates.org/bartoakland-airport-connector-oac

Not only the City and County of San Francisco, but also the Warriors should have been aware of this precedent. Yet neither the EIR or MOU addresses the transit needs of the South Bayshore community, 91 percent minority in 1998.

According to the San Francisco Housing Element:

Since 2010, the percentage of San Franciscans claiming white racial affiliation increased, totaling nearly 51% of the city's population according to the 2012 American Community Survey (ACS). San Francisco's African-American population continues to decline, dropping from 6.1% in 2010 to 6% in 2012. San Franciscans of Chinese origin declined from 21.4% of the total population in 2010 to 21.2% by 2012. The proportion of San Franciscans identifying with Hispanic origins (of any race) has increased from 14.1% in 2010 to 15.1% in 2012.

1 [LC-GEN-2] cont.

HACK THE IMPACTS

The Hack a Shack strategy in professional basketball slows down the pace by intentionally fouling a poor free throw shooter. The proposed Golden State Warriors Arena intentionally fouls a low-income, minority community by mischaracterizing impacts which were previously spelled out in the 1998 EIR.

The previous discussion shows that all three tenets of federal environmental justice policy are compromised. Below, impact determinations in the EIR for the project are shown to ignore impacts on low-income and minority communities.

Impact TR-4: The proposed project would not result in a substantial increase in transit demand that could not be accommodated by adjacent Muni transit capacity such that significant adverse impacts to Muni transit service would occur under Existing plus Project conditions without a SF Giants game at AT&T Park LS No mitigation required is described as less than significant effect with mediation when it should be correctly characterized as significant.

The service standards proposed in 1998 have not been met; residents of District 10, the poorest area of the city are dissatisfied with service. There is a significant case to be made that the current sports facility, AT&T Park, is the primary reason for poor service to the current population. This determination is not credible based on the current difficulties of the T-Line.

Two of the busiest transit lines in the city, both serving heavily minority populations, would be impacted. The T-Line only serves twenty percent more passengers than the previous 15 bus line, but provides 40 percent slower service. The 30-Stockton runs the same route as the Central Subway under construction. It's 33,000 passengers would be added to the load of the T-Line, which means that the subway would be at capacity with just current riders.[70]

Impact TR-13: The proposed project could result in a substantial increase in transit demand that could not be accommodated by adjacent Muni transit capacity such that significant adverse impacts to Muni transit service would occur under Existing plus Project conditions with an overlapping SF Giants evening game at AT&T Park.

The only mitigation proposed is use of shared car services, which are much less likely to be available in low-income areas or to be accessible to low-income residents.

1 [LC-GEN-2] cont.

[70] POWER, Op. cit. Next Stop: Justice pg.8

MUNI demand peaks at 5 p.m. with increases of as much as 100 percent. A recent early evening game at the Levi's Stadium indicates the problems with placing a sports stadium in the midst of a busy commercial/industrial area.[71]

Impact TR 14: The proposed project would result in a substantial increase in transit demand that could not be accommodated by regional transit such that significant adverse impacts to regional transit service would occur under Existing plus Project conditions with an overlapping SF Giants evening game at AT&T Park. SUM

Paradoxically, the EIR admits that the regional transit system can be overwhelmed but asserts that MUNI, with a fraction of the capacity currently servicing the basketball arena, would not be.

The Dept. of Public Health's Climate Action and Health Co-Benefits report states:

> *In order to balance the burdens of our transportation system with the benefits placed on certain communities, special efforts should be made to target service improvements to particularly benefit low income residents, communities of colors, the elderly, and neighborhoods that have a historical legacy of dealing with higher levels of environmental exposures.*

Impact TR20: Without implementation of the Muni Special Event Transit Service Plan, the proposed project would result in a substantial increase in transit demand that could not be accommodated by adjacent Muni transit capacity such that significant adverse impacts to Muni transit service would occur under Existing plus Project conditions. SUM

The design of the T-Line took multiple lanes away from Third Street, reducing the capacity for additional transit service without blocking throughput to other areas. The level of MUNI service traditionally available to 49ers games at Candlestick would be compressed into a much smaller area.

Impact TR-21: Without implementation of the Muni Special Event Transit Service Plan, the proposed project would result in a substantial increase in transit demand that could not be accommodated by regional transit capacity such that significant adverse impacts to regional transit service would occur under Existing plus Project conditions.

The additional auto traffic on U.S. 101 from the gridlock from events would bring additional sources of pollution into an area which already has to suffer from the city's wastewater treatment plant and dust from Shipyard construction.[72]

Impact TR 22: Without implementation of the Muni Special Event Transit Service Plan, the proposed project could result in a substantial overcrowding on public sidewalks, nor create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility on the site and adjoining areas under Existing plus Project conditions.

1 [LC-GEN-2] cont.

[71] Evangelista, Benny "Tech employees work from home to avoid 49ers-Seahawk traffic," *San Francisco Chronicle*, Oct. 22, 2015 http://www.sfgate.com/business/article/Tech-employees-work-from-home-to-avoid-6585010.php
[72] Ibid.

Congestion would make it difficult for residents of Bayview-Hunters Point to walk or ride to downtown amenities, the complete opposite of the goals of the T-Line.[73]

Impact PH-1: Construction of the proposed project would not induce substantial growth in the area, either directly (for example, by constructing new homes or businesses)) or indirectly (for example, through extension of roads or other infrastructure).LS No mitigation required

San Francisco has the highest rental costs in the nation.[74] *This arena would not create any additional jobs, but would attract absentee residents to bid up nearby properties so that they could be near the arena, a trend already seen in the city.*[75] *It would also reduce the supply of housing due to services like AirBnb renting spaces near the arena for 200 days of events.*[76] *Google's shuttle bus service grew from 155 passengers at two stops in 2004 to 100 buses daily with 10,000 passengers.*

Impact PH -2: Construction of the proposed project not displace existing housing units or create substantial demand for additional housing LS No mitigation required

The City and County of San Francisco is 7,000 units short of replacing housing removed by redevelopment activity according to the Housing Element. Section 8 applicants are currently referred to sites outside the city and homeless African-American women are given tickets to leave the area in return for assistance.[77]

Impact PH-4: Operation of the proposed project would not induce substantial population growth in the area, either directly (for example, by constructing new homes or businesses) or indirectly (for example, through extension of roads or other infrastructure) LS No mitigation required.

Not a credible statement given the rapid growth of Mission Bay. The 1998 Third Street Light Rail EIR underestimated the city's population by 40,000, more than its daily passenger load.[78]

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1 [LC-GEN-2] cont.

[73] Ibid.
[74] Zumper National Rent Report San Francisco remained the most expensive market in the United States for the ninth straight month, with median 1-bedroom rents rising to $3,460, the highest ever recorded. The gain was particularly notable considering that NYC, the second most expensive market, saw rents plateau in February, even after a slight drop of 3.2% https://www.zumper.com/blog/2015/03/zumper-us-rent-report-february-2015/
[75] Dai, Danielle, Weinzimmer, David "Riding First Class: Impacts of Silicon Valley Shuttles on Commute and Residential Location Choice" working paper, UC-Berkeley Department of City Planning
[76] Said, Carolyn "The AirBnb Effect" *San Francisco Chronicle* July 12, 2015 http://www.sfchronicle.com/airbnb-impact-san-francisco-2015/#1
[77] Phelan, Sarah "Saving the southeast" *San Francisco Bay Guardian* May 13, 2009
[78] Planning, *Op. cit*. "Third Street Light Rail EIR, p. S-3

Environmental Justice Legal Issues

The proposed MUNI service changes would fly in the face of decades of case law and regulations for environmental justice. For instance, BART is currently conducting an analysis of its new extension in Fremont.

> "Federal Transit Administration (FTA) Title VI Circular (Circular) 4702.1B, Title VI Requirements and Guidelines for Federal Transit Administration Recipients(October 1, 2012), the District is required to conduct a Title VI Service and Fare Equity Analysis" [79]

This has not occurred for the proposed transit changes. The BART report had to make the following determination:

> "The travel assessment compares the estimated travel time for riders affected by the service change before and after the new service. The results of the travel time assessment found that the Project would benefit all populations, including minority and low-income, within the Project Catchment area. With project service, all populations are expected to experience the same time savings of 11.85 Minutes between Warm Springs and the Fremont Station, a 55.8% reduction in travel time. [80]

"With the exception of Option 3, staff also found that travel times are not expected to change for riders of existing stations, as a result of the proposed options. As proposed in the FY2016 Preliminary Budget, additional cars would be added to the Green and Blue lines, which will lessen peak period crowding. As a result, the study found that minority populations will not experience a disparate impact and low -income populations will not experience a disproportionate burden on their travel times with the new service." [81]

In the courts, the aforementioned BART connector case set a precedent by showing that the Metropolitan Transportation Commission spent $9 for every $0.50 spent on buses for low-income persons.[82] The service designed specifically for an arena to a high-income arena flies in the face of that precedent.

1 [LC-GEN-2] cont.

[79] BART "Warm Springs Extension Title VI Equity Analysis and Public Participation Report" May 7, 2015 p. 5
[80] Ibid.
[81] Ibid.
[82] Public Advocates, *Op. cit.*

In San Diego, Atty. Gen. Harris vision of environmental justice was upheld when a court found that cumulative effects must be considered. A petition to intervene in the case Cleveland National Forest Foundation vs. San Diego Association of Governments in 2012 insisted that government agencies consider environmental justice.[83]

The attorney general warned the regional body in a comment letter that it failed to study the impact of increased pollution on minority communities.

"…the Attorney General is effectively putting lead agencies across the state on notice that a failure to address EJ considerations in the implementation of climate change policies will risk challenges to the legal sufficiency of their environmental impact documents."

The legislative foundation for environmental justice comes from AB32 in 2006, which established an advisory committee on the issue.[84]

There is also an emerging standard on community participation.

> "According to the EPA, "meaningful involvement" in environmental decision making means that: "(1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected." However, members of affected communities may lack the technical resources, English language proficiency, access to quality legal representation, or simply the time to participate effectively."

Similar standards have been enacted by the California Air Resources Board.[85] Its 2001 document asserts:

> Local land-use agencies are directly responsible for the siting of new air pollution sources, and local air districts also play an important role by issuing permits for new sources of air pollution. We are committed to working as partners with these agencies to improve the available information that local agencies use to make planning and permitting decisions. [86]

The Air Resources Board also addresses cumulative impacts:

1 [LC-GEN-2] cont.

[83] Hsiao, Peter, et.al. "Environmental Justice as Environmental Impact: the Intersection of Environmental Justice, Climate Change and the California Environmental Quality Act" Bloomberg BNA World Climate Change Report Vol. 2012 No. 48 March 12, 2012 p.

[84] Bonoris, Steven (ed.) *Environmental Justice for All: A Fifty State Survey of Legislation, Policies and Cases (fourth ed.)* American Bar Association 2010 p. iv

[85] Air Resources Board, California "Policies and Actions for Environmental Justice" 2001
[86] Ibid. p. 1

> It shall be the ARB's policy to work with local land-use agencies, transportation agencies, and air districts to develop ways to assess, consider, and reduce cumulative emissions, exposures, and health risks from air pollution through general plans, permitting, and other local actions.[87]

The landmark global warming act and subsequent legislation, plus legal opinions from the attorney general and court cases all underscore the importance of addressing potential impacts from the prism of environmental justice.

A DOT Title VI analysis of BART in 2009 found deficiencies in its environmental justice performance.

> "FTA recipients should seek out and consider the viewpoints of minority, low-income, and LEP populations in the course of conducting public outreach and involvement activities. An agency's public participation strategy shall offer early and continuous opportunities for the public to be involved in the identification of social, economic, and environmental impacts of proposed transportation decisions."[88]

Based on those state and federal standards, the failure to address environmental justice in the Subsequent Environmental Impact Statement is problematic.

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[LC-GEN-2]
cont.

[87] Ibid. p. 10
[88] Federal Transit Administration "BART Title VI Final Draft 2009" 2009

The Demographics of the Impacted Area

Activist Marie Harrison described Bayview Hunters Point as the epicenter for environmental injustice in a 2003 report:

> "The neighborhood is home to approximately 34,800 people, and more than 500 heavy and light industrial companies, retail stores, and commercial establishments. According to U.S. 2000 census data, approximately 48% of residents in Bayview Hunters Point are African American, 1.3% American Indian, 23% are Asian and Pacific Islanders, 17% are Hispanic and 10% are White. Income levels are significantly lower, and unemployment rates significantly higher for this small community, than for San Francisco as a whole: Nearly 40% of Bayview Hunters Point residents have annual incomes below $15,000, while only 20% of the City's population as a whole have income that low, and the unemployment rate is 13% in Bayview Hunters Point, more than twice as high as the City as a whole."

Community victories to close the Hunters Point power plant have had the effect of opening up the area for new migrants. The African-American population of the neighborhood has dropped by 50 percent since 2000.

Stress Factors Based on Race, Income and Unequal Opportunity. For the purposes of the critical race theory analysis of environmental justice, the affected population must be viewed through the lens of the traumatic events which have occurred over the past 50 years. Each of these stress factors is known to, or reasonably should be expected to be known to the preparers of the Draft Subsequent Environmental Impact Statement. The civil grand jury wrote in 2004:

> "There are deeply rooted social problems that result in part from systematic negligence dating back to World War II. The City of San Francisco has failed to invest significantly in this community for over 60 years."

Loss of industry in Bayview-Hunters Point. The General Plan discusses the impact of the closure of the Hunters Point Shipyard, but does not mention the decision to move to containerized shipping, which reduced jobs in the commercial maritime industry. There is a significant history of biomedical innovation in the black community. Dr. Nathaniel Burbridge was a pharmacologist and professor at UCSF, but became known for leading the NAACP during the United San Francisco Freedom Movement.

Eric Williams, the son of Ruth Williams, the namesake for the Ruth Williams Memorial Theater in the Bayview Opera House, holds 20 patents for cardiac stents. A proposal to mark the 50th anniversary of the United Freedom Movement with a Nathaniel Burbridge Center for Innovation and Diversity located in the India Basin area has been ignored by city officials despite the evidence from the similar Impact Hub in Oakland, which has spawned close to 1,000 businesses in two years.

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[LC-GEN-2]
cont.

Kevin Epps, producer of the documentary Straight Outta Hunters Point, was also unable to gain city support for an incubator to develop media and online businesses. Other entrepreneurs seeking to provide clean renewable power have had a lack of interest from city officials.

The biggest need is to provide 5,000 industrial/assembly/distribution/construction jobs for residents of the area, not temporary event positions.

Health Disparities

Blackwell wrote:

> "Health surveys have shown that Bayview Hunters Point residents suffer from rates of cervical and breast cancer that are double those found in the other parts of the Bay Area, an asthma rate that is three times higher than in the rest of the state, and rates of hospitalization for congestive heart failure, hypertension, diabetes and emphysema that have been determined to be more than three times the statewide average. In addition, children living in the Bayview are far more likely to contract illnesses than children in the rest of the city, and infants are more likely to die.[89]

Income inequality is a significant factor for those health disparities, according to the San Francisco Dept. of Public Health's Community Health Assessment.

> "Although the median household income in San Francisco seems relatively high at $70,040, San Francisco has the largest income inequality of the nine Bay Area counties... Income inequality is directly related to health inequality, with higher income linked to better health: the greater the gap between the richest and poorest people, the greater the differences in health."

1 [LC-GEN-2] cont.

[89] Blackwell, Savannah Environmental Justice "Real World" Pathfinder: Bayview Hunters Point, San Francisco UC-Berkeley School of Law Jan. 26, 2009 savannahblackwell.com

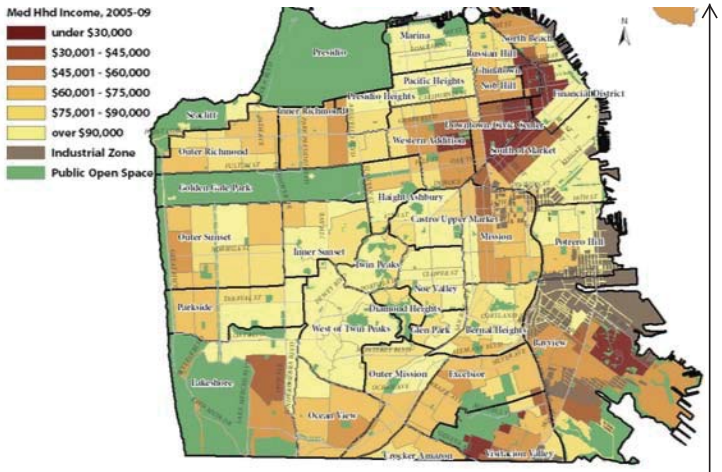

Figure 3 Income Inequality concentrated in District 10. Source San Francisco Dept. of Public Health

Reduction of Home Ownership.

According to Sen. Diane Feinstein, California had the highest rate of mortgage fraud in the nation, [90]and the problem was concentrated in the Bay Area, with southeast San Francisco, particularly targeted.

This is particularly problematic because the South Bayshore planning district has the third highest percentage of single family homes in the city, with 66 percent. By contrast, downtown has only two percent single family homes.

"Larger households of four or more persons are generally found in the south- eastern neighborhoods of the Mission, Bayview, Visitacion Valley, and the Excelsior where typical housing units have two or more bedrooms. "

According to the 2014 Housing Element, the City has a responsibility to create more affordable housing:

"San Francisco's share of the regional housing need for 2015 through 2022 has been pegged at 28,870 new units, with almost 60% to be affordable."

1 [LC-GEN-2] cont.

[90] Feinstein, Sen. Diane "Mortgage Fraud and America's Foreclosure Crisis" 2010 p. 7

However, the city's affordable housing policies are not as useful as one might think for African-Americans. The maximum income to qualify for low-income housing allotments in San Francisco at 70 percent of the median income is 50 percent higher than the median income for African-Americans.[91] That means African-Americans are outbid for subsidized housing because their income is significantly less on average than any other group. Developments actually constructed by African-American churches and lodges find themselves hard pressed to accommodate long-time black residents due to the intense competition.

Foul Air

In 1997, the asthma hospitalization rate for Bayview-Hunters Point African-American children was 820 per 10,000, the highest rate in California.

Air pollution has been linked to asthma, allergies, cardiovascular and respiratory diseases, cancer, neurological and reproductive disorders, and premature death (CARB 2009). In San Francisco, approximately 102,000 children and adults are currently diagnosed with asthma, with children and the elderly having significantly higher rates of asthma (CDPH 2011).[92]

The unavoidable impact of 18,000 persons using the toilet, along with potentially another 45,000 baseball fans smells to high heaven for the residents of southeast San Francisco.

> "Sophie Maxwell, the member of the San Francisco Board of Supervisor's whose district includes Bayview Hunters Point, lives within a few blocks of the Southeast sewage plant. In 2006, she told San Francisco Bay Guardian reporter Sarah Phelan that "every time [she] come[s] home and get[s] off the freeway, [she is] constantly reminded the plant is there."
>
> "You can smell it day and night," Maxwell told Phelan. "It's unacceptable."
>
> Originally constructed in 1952 with most of its operations placed outdoors, the plant was expanded in 1987 after a series of public hearings. To overcome residents' resistance to the plans, the city agreed to construct a community college campus in the neighborhood. In addition, officials promised that the facility's increased operations would not be noticeable and would result in "no odors." The fact that those promises have not been kept is impossible to ignore on hot days when the aroma of fecal matter becomes especially repugnant."

The Southeast Waste Treatment Plant uses 11 open air tanks and nine digesters compared to the Oceanside plant on the Great Highway, which is 1.5 miles from the nearest residence and uses an underground tunnel to send waste out into the ocean. Its operations can not be smelled outside

1 [LC-GEN-2] cont.

[91] Planning, Op. Cit. Housing Element
[92] Public Health, Dept. of "Climate Action and Health Co-Benefits"

Conclusion

During the first game of the 2015 NBA Finals, this writer visited restaurants featured in his 2005 exhibit to watch the series. Leaving Paul and San Carlos after the conclusion, he walked approximately 20 blocks to 4000 block of Third Street without having a single T-Line train pass.

After visiting at the historic Sam Jordan's, he then went to the Third and Evans station to wait for a train. It took 67 minutes to arrive, close to two hours without service.

It was consistent with his experience in the previous decade attending community meetings in the Excelsior district for the branch library campaign and in Bayview Hunters Point for the campaign for the brand new library opened last year. Like the young lady in the POWER report, waiting for the T-Line at Third and Revere always takes a lot of patience, particularly at night in the cold.

Since then, he has observed the patterns for other MUNI light rail lines, observing that they adhere to posted schedules. The T-Line is subject to switchback at Marin Street, dumping dozens of riders to a crowded sidewalk at the busy Cesar Chavez intersection.

A review of available evidence confirms the reasoned suspicion that the placement of an event arena and entertainment complex at Third and Sixteenth Street with a single MUNI stop serving it, not directly connected to the rest of the MUNI Metro system, would inexcusably impact a community which has traditionally caught the short end of City policy.

1 [LC-GEN-2] cont.

PH2

bicycle valet parking at the Giants Stadium, which has 150 spaces, we routinely have to turn people away. So, it's a very popular option.

The bike valet parking, along with the improved bike network and robust encouragement programs will help make this the single most bicycle-friendly professional sporting venue in the country upon completion. So, it could be a real feather in the City's cap.

We also acknowledge that the growing number of bicycle trips to a venue like this takes an ongoing effort over time, so we are looking forward to continued partnership with the Warriors to ensure this project and the City meet their goals to make this a great place to bike to.

Thank you.

CHAIRPERSON ROSALES: Thank you.

TOM LIPPE: Good morning, Members of the Commission. My name is Tom Lippe. I represent the Mission Bay Alliance.

And a couple of points. First of all, on the secondary use finding, Susan Brandt-Hawley, my cocounsel, has sent a letter by E-mail yesterday, contesting the secondary use -- the appropriateness of finding that this as an allowable secondary use under

Lippe-1 [LC-PP-1]

PH2

the Redevelopment Plan. So, I would encourage you to take a look at that. She's also going to speak today to flesh out the reasons for that.

If it turns out that it is a proper secondary use, then you actually need a variance under the Redevelopment Plan. You can't just amend the Design for Development.

And I have a letter on that point, which I'd like to submit to you today, which I also E-mailed yesterday, and that is here.

(Letter submitted to staff.)

With respect to your finding that the EIR complies with CEQA, it turns out it doesn't for lots of reasons. One of those reasons has to do with the fact that the EIR took the position that compliance with the City's NPDES permit, which is a water-quality permit, would ensure no water-quality impacts of significance.

Well, I objected and said you have to prove that you comply. And the Response to Comments said, Well, we comply.

So, we got the Water Board enforcement files, which are five binders of ten years of noncompliance by the City. So, that simply is not a proper basis to find that there would be no significant effect on water quality. So, I'd like to give you those binders.

Lippe-1 [LC-PP-1] cont.

Lippe-2 [LC-HYD-1]

(Binders submitted to staff.)

There's also my comment letter on the EIR, which is in two binders, with Exhibits A through S.

(Binders submitted to staff.)

CHAIRPERSON ROSALES: So, is this the first time you're giving us this?

TOM LIPPE: It is.

And just on that point, we only had 11 days after your staff of 58 people had two months.

Two quick points. The Bay Area Air Quality Management District is not participating in your offset mitigation for ozone precursor pollution; therefore --

CHAIRPERSON ROSALES: Continue.

TOM LIPPE: -- that mitigation measure is no longer effective to reduce -- we never thought it was, but even on your own terms, it's not effective to reduce those impacts to less than significant, because the agency to do the offset program is no longer agreeing to the price.

And that is a mitigation measure that the project sponsor apparently has refused to adopt, and that's a trigger for recirculating the EIR as a draft so that people can comment on this development. And this is a development that occurred yesterday, apparently, based on the letter that was on the table this morning.

Lippe-2 [LC-HYD-1] cont.

Lippe-3 [LC-ERP-4]

Lippe-4 [LC-AQ-1]

Lippe-4 [LC-AQ-1] cont.

And then, finally, I have a letter from my co-counsel, Soluri Meserve, on the noncompliance of the EIR by CEQA.

(Letter submitted to staff.)

Thank you.

JIM LAZARUS: Commissioners, Jim Lazarus, San Francisco Chamber, also our partner in labor and other civic organizations, the Alliance for Jobs.

Our visitor economy will benefit greatly from this facility. This is a transit-rich location, one that can accommodate not only the great growth that we all appreciate at Mission Bay, but the growth of our visitor industry through the development of this facility.

I urge people to look at the ballot handbook from 1996, when the ballpark was on the ballot, challenged by early residents of Mission Bay and China Basin.

That ballpark said the world as we know it -- or, that ballot argument said the world as we knew it at the time would end with the development of AT&T Park -- congestion, driving jobs and tax revenues away from the City, gridlock -- opposed the ballpark. We know that didn't happen.

The privately built AT&T Park is one of the

Lippe-5 [LC-PP-1]

Potrero Hill Neighborhood House. I am here to support this project with the Warriors.

I've worked with the Warriors for a long time. They've given us tickets so I could bring my youth to games. They've supported our educational efforts with the youth in our communities, and they've just -- this is a wonderful, wonderful opportunity to bring a championship team here to San Francisco.

I am here to say ditto to all of those who support this project, and look forward to welcoming the Warriors here to our community.

Thank you.

CHAIRPERSON ROSALES: Does the baby want to say something?

COMMISSION SECRETARY GUERRA: I'm calling, for the last time, Oscar James, Stuart Canning, D.J. Brookter, and Ramon Hernandez.

SUSAN BRANDT-HAWLEY: Good afternoon, Members of the Commission. I am Susan Brandt-Hawley, and it's hard to follow a baby sleeping in a Warriors' jersey, but I'll do my best.

We all support the Warriors. That's not the issue here today, but the public looks to this Commission to follow the environmental laws in every way before approving this project or considering approval.

Hawley-1 [LC-PP-1]

You've received a number of letters from me and others regarding environmental problems, and yet the Final EIR that we just received a little over a week ago, with thousands of pages, the approvals are being rushed through, which is unfair to the Commission and unfair to the public, because a lot of the environmental questions have not been solved.

I would like to turn in, for the record, just a few letters that I've sent to you. But these are hard copies, in case you don't have them yet.

(Letters submitted to staff.)

I'd like to focus, in just this very short amount of time, on a really critical underlying issue and problem here that needs to be solved that we brought up in the Draft EIR comments in July -- that the EIR declined to study in any way the land-use consistency of this plan.

The South Mission Bay Redevelopment Plan sets out a very careful, planned community in these classic bare blocks to allow development of the biotech industry and other compatible uses.

The EIR did not study land use, claiming that this qualified as a secondary nighttime entertainment. And as I explained in my letter, none of the secondary uses -- nighttime entertainment, that's supposed to be

Hawley-1 [LC-PP-1] cont.

for bars and small evening establishments; a recreation building, which is being claimed, when this is actually entertainment, which is not an active recreation, but it's, in fact, something that people watch; or a public structure or use, which, in fact, this is not, because it's not a public building.

You can fix this problem by considering amendment of the Redevelopment Plan. But right now, this project is directly inconsistent and does not qualify for -- as a secondary, much less a primary use.

So, we'd ask you to take some more time, look as the EIR comments that we've submitted, and, in particular, take a hard look at these findings that are not supportable regarding the secondary use.

I'm not sure. Do I have more time here?

CHAIRPERSON ROSALES: I'll allow more time just to finish.

SUSAN BRANDT-HAWLEY: Okay.

Well, thank you very much for your attention. And we ask that you continue this, look at all the issues that have been raised.

And, again, the public is looking to you to make sure whatever is approved -- we believe, should be at a -- certainly, at another location -- is fully resolved and not go forward and create environmental

Hawley-1 [LC-PP-1] cont.

Hawley-2 [LC-ALT-1]

problems.

Thank you.

CHAIRPERSON ROSALES: Thank you.

COMMISSION SECRETARY GUERRA: Are there any others that would like to speak?

(No response)

Madam Chair, I have no further speakers.

CHAIRPERSON ROSALES: Okay. And there's no one in the overflow rooms?

There's two overflow rooms.

COMMISSION SECRETARY GUERRA: We checked.

CHAIRPERSON ROSALES: Okay.

We will close the Public Comment. Thank you, everyone, for speaking.

The time is 12:16.

I think my fellow Commissioners and I are a little tired, and I think we need a little break. So, if we can take a 30-minute break, I think that's fine, so that we can stretch our legs and come back for the balance of the calendar.

(Luncheon recess taken at 12:17 p.m.)

---oOo---

Hawley-2 [LC-ALT-1] cont.

here to ask for your support.

I'm David Wong. I'm Bay Area Deputy Sheriff Charitable Foundation executive director. We work with you, and once a year, we have a shop with the Deputy Sheriff program where we take 300 to 500 disadvantaged children to do Christmas shopping. And out of those -- out of that program, we ask a pro sport athlete to accompany -- to do the shopping, where we guide the kids to a better direction.

I'm a retired Deputy sheriff in San Francisco, and if we can prevent kids when they're young, we can prevent a lot of crime. And that's what I do.

So, just imagine when Coach Al Attles, accompanied with a couple of kids to shop, their parent is so amazingly shocked that, you know, Coach Al Attles would shop with them.

Just imagine if we could tell the parents and the children that Warriors is -- their home is with us. And that will be world-class decision. And I hope you can make that world-class decision.

Thank you.

JOHN WILLIAM TEMPLETON: John William Templeton. I'm historian and creator of the California: "African American Freedom Trail."

The Subsequent EIR violates, procedurally and

Templeton-1 [LC-UD-1]

substantively, every tenet of California's pioneering Environmental Justice Law and a 1994 federal executive order.

I've submitted a 40-page document that spells out the many ways that the characterization of impacts fails to take into account the cumulative effects of 70 years of land use inequity.

When I heard Planning Commissioner Ed Maley's (phonetic) objectionable remarks last week, I conducted a critical race theory analysis of this EIR to see that it substantially -- in trying to assemble this into a document, that certain groups of people are more valuable than others -- this measure breaks a covenant with the people of southeast San Francisco that $2.2 billion spent on their T Lines would link them to the rest of the City, and negatively impacts them for a generation to come.

In 1951, U.C.S.F. had the opportunity to play in the Cotton Bowl with the condition that they had to leave their black players behind. They turned down the invitation.

We shouldn't leave our impacted communities behind in order to approve this ill-conceived project.

CHAIRPERSON ROSALES: Thank you.

PAT VALENTINO: Good afternoon -- good

Templeton-1 [LC-UD-1] cont.