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July 20, 2018

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President Malia Cohen and Supervisors
San Francisco Board of Supervisors
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**Re: 429 Beale Street, 430 Main Street
Opposition to Appeal of the Community Plan Exemption (“CPE”)
Planning Department Case No. 2014.002033DNX
File No. 180697
Our File No.: 7810.07**

Dear President Cohen and Supervisors:

This office represents LCL Global-429 Beale & 430 Main Street, LLC—an affiliate of War Horse Cities and Tidewater Capital (collectively the “Project Sponsor”), the sponsor of a project to construct a mixed-income 9-story residential building featuring 135 dwelling units (the “Project”). Located in the Rincon Hill neighborhood with frontages on Beale and Main Streets, the Project will add much-needed housing—including 18 affordable units—on an ideal infill site currently used as warehouses.

The Project’s Community Plan Exemption (“CPE”) was issued on March 19th, 2018 and the Project approved by the Planning Commission on May 24, 2018. The CEQA process is not meant to be used to revisit an entitlement approval¹. To the extent Appellant has issues with the Section 309.1 approval, this hearing is not the proper forum to raise them.

As discussed in more detail below, the CEQA process was exhaustive, and resulted in a finding that the Project would not have a significant effect on the environment. The City’s use of a CPE for the Project is proper, and the appeal is without merit and should be denied.

¹ As noted in a recent law review article discussing CEQA lawsuits and California’s housing crisis, “Housing can be built, and it is politically supported by majorities of existing residents, including those who are protective of the character, services, and property values in their community across the country. However, CEQA lawsuits provide California’s anti-housing holdouts—the political minority of as few as one anonymous party—with a uniquely effective litigation tool to simply say ‘no’ to change.” *California Environmental Quality Act Lawsuits and California’s Housing Crisis*, Hastings Environmental Law Journal, Winter 2018, pg. 41.

Background

The Project Sponsor acquired 429 Beale Street and 430 Main Street in April 2014 and subsequently embarked on an entitlement process to convert the current light industrial use on the site (which creates one job, generates de Minimis tax revenue for the City and Neighborhood, and provides zero street level activation) to mixed income, multifamily housing. The immediate area around 430 Main is made up of new residential towers along with smaller office and residential buildings. The Rincon Hill Plan dictates that residential development in this area should taper down in height from the top of the hill to the Embarcadero. As such, Project Sponsor's proposed project at 84' fits within the intent of the Plan and allows for Project Sponsor to add a new category of renter to the neighborhood who may not be able to afford to live in the surrounding towers. The Project presents an opportunity to construct dense, mixed-income housing to address the City's shortage while removing what is currently a poor use of transit-served urban land. Through extensive community outreach, we ascertained that most of the project's neighbors agreed this change of use represented a welcome addition to the area.

Sponsor's robust community engagement efforts over the past four years included holding monthly office hours at Ada's Café, attending neighborhood meetings, presenting to neighboring HOAs, and engaging with neighborhood businesses totaling over 200 direct connections with community and neighborhood stakeholders (see **Exhibit A**). This outreach yielded nearly 80 letters of support and over 40 speakers in support of the Project at the Project's Planning Commission hearings.

The Project approved by the Planning Commission contains a number of concessions to the Project's direct neighbor to the north, including a five-foot setback from the lot line (allowing the Neighbor's at-risk windows to be preserved) and a 45' separation in the middle of the building to preserve the neighbor's views and allowing light into their courtyard. These concessions led an overwhelming majority of the residents of the neighboring building who were originally opposed to the Project to cease their opposition. In order to accommodate the separation in the building, the Project's unit count decreased by 9 units (from 144 to 135). Project Sponsor worked tirelessly over the course of the entitlement process to address the neighboring concerns and understands the importance of compromise in the development process.

Project Metrics and Benefits

1. **A mixed income development with BMR rental units.** Like its project at 1028 Market St. in Mid-Market, Project Sponsor is committed to constructing a mixed-income residential development on this site. The Project will provide 18 on-site affordable units in the Project. Consistent with Board of Supervisors Ordinance No. 76-16, 13.5% of the Project's 135 dwelling units will be affordable to households whose total income is below 55% of Area Median Income. Below Market Rate rental units are in particularly high demand due to the lower AMI threshold, which is especially important because those affordable units will be within walking distance or a short transit ride from San Francisco's two biggest employment centers: the Financial District and SOMA.

2. **Project Sponsor's Extensive Community Involvement.** Project Sponsor's level of involvement with the surrounding community goes above and beyond typical outreach efforts and shows a unique level of dedication to the neighborhood. Over the last four years, Project Sponsor has committed to being an active member of the Rincon Hill and South Beach communities. Project Sponsor's overall business philosophy is based on principled and authentic relationships with community leaders, non-profits, and other stakeholders, and being engaged members of the communities in which it operates. Project

Sponsor is proposing to build for-rent housing and expects to own and operate the site if the Project is approved and built, ensuring that its involvement with the neighborhood will continue for the duration of its ownership.

3. **The project is consistent with Rincon Hill's planned urban form and uses.** The Rincon Hill Plan was designed to create a high density transit oriented neighborhood close to jobs. The Plan set forth a carefully crafted set of zoning controls that will support a significant amount of new housing close to downtown, while creating a new community of unique quality for San Franciscans to live. The Project is consistent with the Plan and furthers its goals.

The Property's 84-foot height limit is consistent with the Rincon Hill Plan's proposed urban form, which located taller buildings higher on the hill, tapering off height limits towards Rincon Hill's base. The Project complies with the height limit designated for the site, which is significantly less than the 105-foot height limit on the site immediately north of the Property, and the 150-foot to 400-foot height limits on the block north of Harrison Street.

4. **Other Benefits.** The Project will make a wide-ranging contribution to the San Francisco and Rincon Hill community, in addition to providing on-site affordable units. Among other benefits, it will pay impact fees that will go towards public transit, childcare, community infrastructure, and other public services. Based on current rates, the Project will contribute approximately \$5.7 million towards neighborhood and citywide improvements. It is also estimated to generate \$14 million in real estate taxes over the next 10 years supporting a range of public services provided by the City of San Francisco.

The Project is also expected to provide economic opportunity across many sectors. Construction of the Project is expected to create approximately 170 jobs. The Project Sponsor is using a union signatory general contractor to ensure that jobs created will come with livable wages and benefits. The Project Sponsor is committed to local hiring and is in conversation with several groups regarding the training and hiring of local workers.

Issue on Appeal

Appellants raise a single issue in their initial appeal filing. They state that "the planning department was presented with credible peer review of the departments air quality review and they abused their discretion by failing to address this substantial evidence in the formation of their findings."

Appellant makes reference to the January 19, 2018 peer review prepared by Trinity Consultants. While Trinity appears to disagree with some of the Ramboll conclusions relied on by the Planning Department staff and Commission in approving the project, such a disagreement is simply not a basis for any additional review under CEQA.

Other than attaching the Trinity report and claiming that the Commission "abused their discretion by failing to address this substantial evidence in the formation of their findings" there is no explanation at all as to what these alleged failures are.

Because the analysis in the CPE is supported by substantial evidence, the appeal should be denied.

The Commission's Decision Must Be Upheld If Supported by Substantial Evidence

When considering the adequacy of any CEQA analysis, it is the lead agency's job to weigh the evidence relating to the accuracy and sufficiency of the information and analysis and to decide whether to accept it. In this case, the lead agency is the San Francisco Planning Department.

It is long established law that the lead agency may adopt the environmental conclusions reached by the experts that do the analysis even though others may disagree with the underlying data or conclusions. *Laurel Heights Improvement Ass'n v Regents of Univ. of Cal.* (1988) 47 C3d 376, 408; *State Water Resources Control Bd. Cases* (2006) 136 CA4th 674, 795. Discrepancies in results arising from different methods for assessing environmental issues do not undermine the validity of the analysis as long as a reasonable explanation supporting the analysis is provided. *Planning & Conserv. League v Castaic Lake Water Agency* (2009) 180 CA4th 210, 243.

There is consistent CEQA case law in the area of "expert opinions." The existence of differing opinions arising from the same set of facts is not a basis for finding any CEQA analysis to be inadequate; the lead agency need not resolve a dispute among experts about the accuracy of any analysis. The following cases are examples of this accepted doctrine:

- *Eureka Citizens for Responsible Gov't v City of Eureka* (2007) 147 CA4th 357 (city could accept expert's findings on noise impacts despite disagreement over methodology used);
- *Save Cuyama Valley v County of Santa Barbara* (2013) 213 CA4th 1059, 1069 (county could rely on expert's conclusions regarding hydraulic impacts despite differing opinions by EPA and petitioner's expert);
- *Cadiz Land Co. v Rail Cycle* (2000) 83 CA4th 74, 102 (county appropriately relied on expert opinions that further geologic trenching not necessary);

Appellant's arguments disputing the scope of the analysis, the validity of the methodology used, or the accuracy of data, involve factual issues. The issue before the Board is whether the air quality analysis and conclusions are supported by substantial evidence. *North Coast Rivers Alliance v Marin Mun. Water Dist.* (2013) 216 CA4th 614, 622. Appellant has offered nothing new and simply complains that the Planning Department should have accepted Trinity's opinion and not Ramboll's. This argument should be rejected.

An appellate body should resolve any disputes regarding the adequacy of the CEQA analysis in favor of the lead agency if there is **any substantial evidence in the record supporting the analysis**. See, e.g., *Laurel Heights Improvement Ass'n v Regents of Univ. of Cal.* (1988) 47 C3d 376, 409; *San Diego Citizenry Group v County of San Diego* (2013) 219 CA4th 1, 11; *Eureka Citizens for Responsible Gov't v City of Eureka* (2007) 147 CA4th 357, 372; *Anderson First Coalition v City of Anderson* (2005) 130 CA4th 1173; *Association of Irrigated Residents v County of Madera* (2003) 107 CA4th 1383, 1397; *Chaparral Greens v City of Chula Vista* (1996) 50 CA4th 1134, 1143.

The Analysis in the CPE Is Supported by Substantial Evidence

In approving the Project, the Commission relied on a large body of substantial evidence (based on a scope of work developed by the Planning Department in consultation with the Bay Area Air Quality Management District (“BAAQMD”)) in connection with the air quality issue.

Of the 73 pages of environmental analysis in the Initial Study for the Project, 11 pages—approximately 15 percent of the analysis in the Initial Study—are devoted to an analysis of air quality impacts from the Project. (See **Exhibit B.**) This analysis engaged in a robust discussion of air quality issues related to the project.

Appellant submitted a 5 page critique of the air quality analysis in the Initial Study authored by Trinity Consultants (“Trinity”). Of the 5 pages in the Trinity critique, only 3 pages are devoted to an analysis of air quality impacts.

On March 26, 2018, Ramboll submitted a point-by-point response to the Trinity critique. (See **Exhibit C.**) The Ramboll response shows that Trinity advanced misleading or flatly incorrect data and assumptions, and provides further substantial evidence supporting the Commission’s approvals, which is summarized below:

BUILDING DOWNWASH MODELING

Trinity incorrectly asserts that the less-refined regulatory model should have been used in place of a sophisticated computational fluid dynamics analysis which can accurately predict complex wind flows around structures.

OFFSITE IMPACTS

Trinity incorrectly asserts that the Project is required to further assess and mitigate its PM2.5 emissions. The Project will not increase pollutant concentrations above the incremental project thresholds and already takes into account the significance standards relevant to areas with high existing pollutant concentrations.

CONSTRUCTION IMPACTS

Trinity asserts that a construction air quality analysis is needed to complete CEQA requirements, even though construction impacts for the Proposed Project have already been analyzed in the Rincon Hill Plan and these impacts will be discussed further in the Community Plan Exemption.

DIESEL PARTICULATE MATTER

Trinity incorrectly asserts that acute health impacts should have been evaluated for components of diesel exhaust for the emergency generator, in contradiction to BAAQMD recommendations and practice.

PROJECT TRAFFIC IMPACTS

Trinity incorrectly concludes that an analysis of Project traffic emissions and impacts using 2014 and 2017 data is warranted, even though the Proposed Project risk results are well below thresholds using a conservative screening approach.

METEOROLOGICAL DATA

Trinity incorrectly asserts that the use of the meteorological data approved by the District for use in the citywide San Francisco Community Risk Reduction Plan likely would not satisfy the 2015 OEHHA Guidelines.

There was no follow up on the part of Appellant to further challenge the Ramboll responses during the entitlement process. Notwithstanding these responses being available since March 26, 2018, Appellant has not pursued this issue and simply asks the Board to rely on the original Trinity critique that has already been debunked. Even the Grassetti letter, submitted to the Board this week and dated July 20, 2018 (and discussed below), ignores the Ramboll follow up. Appellant has provided the Board with no new facts, evidence or analysis.

Ramboll's response to Trinity's response is attached as Exhibit C and a presentation prepared by Ramboll to simplify the explanation of their findings is attached as **Exhibit D**.

The Grassetti Letter

On July 20, 2018, Grassetti Environmental Consulting submitted a letter on behalf of the appellant, allegedly adding several new and creative arguments, but no new evidence. The Grassetti letter adds nothing of substance to the discussion. Each issue raised by Grassetti can be dispensed with quickly:

"There is no such thing as a Community Plan Exemption." This battle was fought and decided long ago. The CPE has become a well-worn path in the last decade in San Francisco, and furthers the stated goal of CEQA to reduce paperwork and redundant analysis. Reliance on a Plan level EIR in this context is completely appropriate and in fact encouraged by CEQA. CEQA clearance of land use projects using this process satisfies the requirements of the law. This argument should be rejected.

"Failure to Consider Substantial Evidence." As stated above and pursuant to established CEQA case law, there is literally a mountain of substantial evidence supporting the Planning Department's conclusions. The air quality analysis alone went above and beyond any CEQA requirements. The claim that a biased "peer review" paid for by Appellants must override the work done by the City should be rejected.

"Air Quality/Health Risk Issues." Grassetti continues to claim that the Trinity Consultants peer review of Ramboll's work somehow invalidates the analysis and triggers yet more CEQA review. As summarized above and discussed in detail in the Ramboll March 26, 2018 document, none of Trinity's claims or arguments stand up to close scrutiny. And finally, it does not appear that Grassetti even bothered to review the March 26 Ramboll response to the Trinity peer review. Each of Trinity's claims, as summarized above, is easily debunked by Ramboll. There is ample substantial evidence in record supporting the City's conclusions.

"View Blockage and Shadow." Grassetti mistakenly argues that CEQA requires additional analysis of blocked views and shadows on privately owned open space. Aesthetic considerations relating to residential infill projects within transit priority areas are not considered impacts as a matter of law. (CEQA § 21099(d)(1).) Further, the analysis of shadow impacts is grounded not in "arbitrary criteria of significance" as Grassetti suggests, but rather grounded in substantial evidence as found in Section 295 of the Planning Code, adopted by the voters in 1984 through Proposition K.

“*Construction Noise.*” In the Initial Study, the Planning Department correctly summarized both the applicable Rincon Hill EIR mitigation measures as well as the local Noise Ordinances that all must be complied with and which collectively reduce construction noise. It is well-settled that a reviewing agency can rely on other generally-applicable laws and regulations to determine that impacts will be less than significant. (See *San Francisco Beautiful v. City & Cty. Of San Francisco*^[1] [“An agency may rely on generally applicable regulations to conclude an environmental impact will not be significant and therefore does not require mitigation.”].) Further, under CEQA Guidelines section 15183, construction noise effects need not be analyzed if uniformly applied development policies, like the Noise Ordinance, will substantially mitigate the effects. In this case, local controls and regulatory schemes apply to the Project and will avoid these impacts. This argument should be rejected.

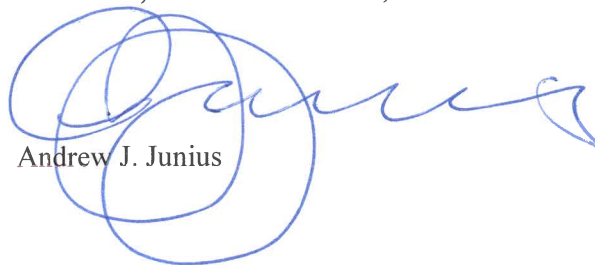
Conclusion

Appellant has not met its burden to show that the Planning Department analysis is not supported by substantial evidence. Requiring further environmental review to be conducted for the Project is unnecessary and unsupported by the law. It would discourage both this beneficial mixed-income housing project and similar projects in any part of the City that conduct CEQA review using a Community Plan Exemption, further exacerbating the shortage of housing of all income types in San Francisco. We respectfully request that you deny the appeal.

Thank you.

Sincerely,

REUBEN, JUNIUS & ROSE, LLP



Andrew J. Junius

cc: Supervisor Sandra Lee Fewer
Supervisor Catherine Stefani
Supervisor Aaron Peskin
Supervisor Katy Tang
Supervisor Vallie Brown
Supervisor Jane Kim
Supervisor Norman Yee
Supervisor Rafael Mandelman
Supervisor Hillary Ronen
Supervisor Ahsha Safai
Angelia Calvillo, Clerk of the Board

^[1] (2014) 226 Cal. App. 4th 1012, 1033.

San Francisco Board of Supervisors

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Michael Li, Environmental Planner, Planning Department

Joy Navarrete, Environmental Planner

Wade Wietgreffe, Environmental Planner

Lisa Gibson, Environmental Review Officer, Planning Department

Tidewater Capital

List of Exhibits

- A - Community Outreach
- B - Air Quality Section – Initial Study
- C - Ramboll March 26, 2018 Memo
- D - Ramboll Summary Air Quality Materials

EXHIBIT A

430 MAIN STREET COMMUNITY OUTREACH

Sponsor engaged in extensive community outreach since their acquisition of the site in 2014

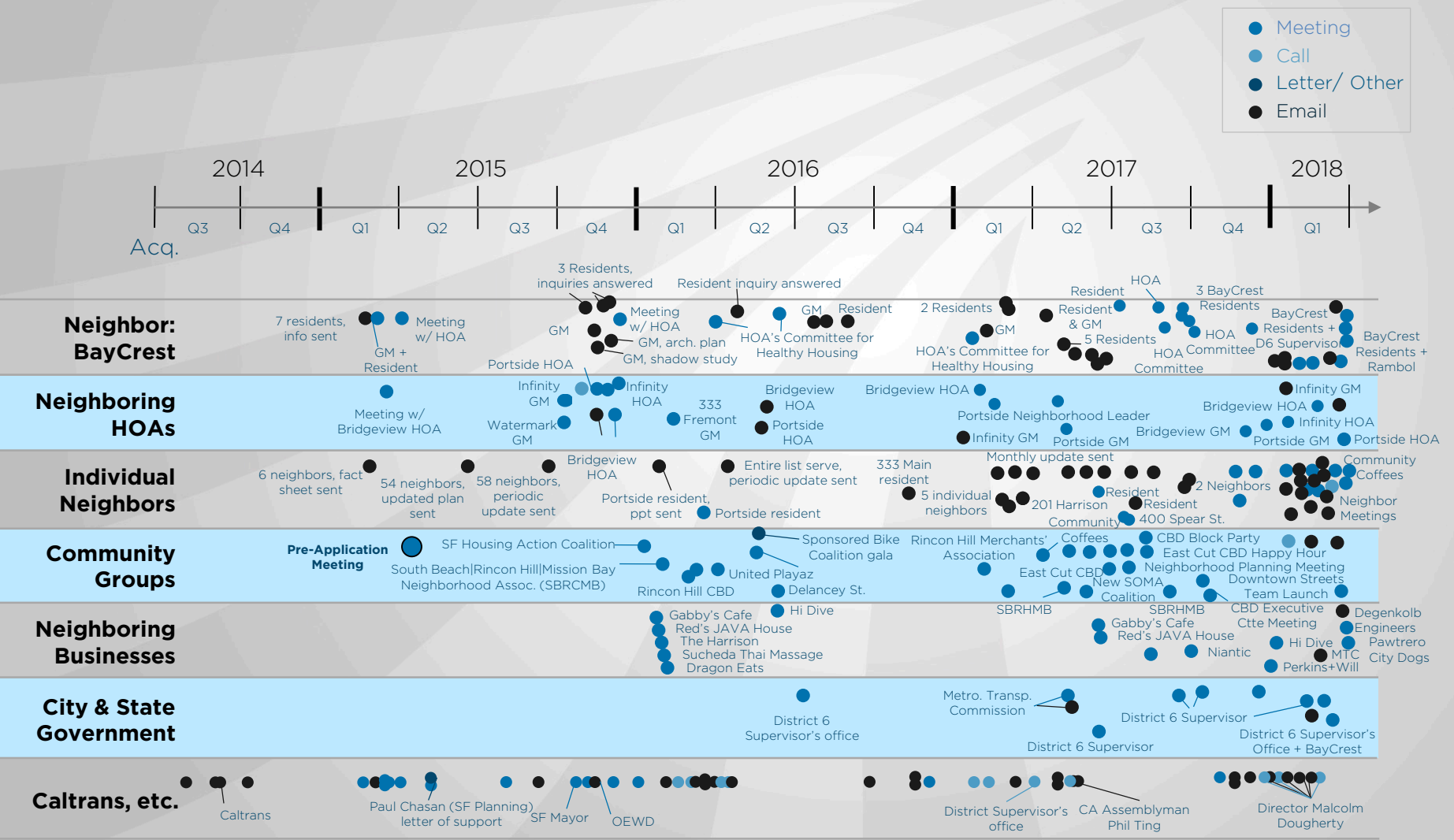


EXHIBIT B



SAN FRANCISCO PLANNING DEPARTMENT

Initial Study – Community Plan Evaluation

Case No.: 2014-002033ENV
Project Title: 429 Beale Street and 430 Main Street
Zoning/Plan Area: RH-DTR (Rincon Hill Downtown Residential) District
84-X Height and Bulk District
Rincon Hill Area Plan
Block/Lot: 3767/305 and 306
Lot Size: 18,906 square feet
Project Sponsor: LCL Global-429 Beale Street & 430 Main Street, LLC
c/o Mark Loper – Reuben, Junius & Rose
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PROJECT DESCRIPTION

The project site, which is in San Francisco's Rincon Hill neighborhood, is on the block bounded by Beale Street on the west, Harrison Street on the north, Main Street on the east, and Bryant Street on the south (see Figure 1). The project site extends from Beale Street to Main Street and consists of two adjacent parcels: Assessor's Block 3767, Lots 305 and 306. Lot 305, the western parcel, fronts on Beale Street and is occupied by a one-story building that was constructed in 1951. Lot 306, the eastern parcel, fronts on Main Street and is occupied by a two-story building that was constructed in 1929. Both buildings are currently occupied by a retail self-storage use. The project site has two existing curb cuts: one on Beale Street and one on Main Street. The project site slopes up from west to east; the western property line is about eight feet lower than the eastern property line.

The proposed project consists of merging the two existing lots into a single 18,906-square-foot lot, demolishing the existing buildings, and constructing a nine-story, 84-foot-tall building containing 144 dwelling units and 73 parking spaces (72 residential spaces and one car-share space). There would be a 15-foot-tall solarium and a 15-foot-tall mechanical penthouse on the roof, resulting in a maximum building height of 99 feet. The parking garage would be on the basement level. Due to the slope of the project site, the parking garage would be about 18 feet below grade on the Main Street side of the project site and about nine feet below grade on the Beale Street side of the project site. The garage door and a new driveway would be provided on Beale Street. The existing 20-foot-wide curb cut on Beale Street would be retained and reduced in width to 11 feet, and the existing curb cut on Main Street would be removed. A total of 119 bicycle parking spaces would be provided; 111 Class 1 spaces would be provided in a storage room on the basement mezzanine level, and eight Class 2 spaces would be provided on the Beale Street and/or Main Street sidewalk adjacent to the project site. Usable open space for the residents of the proposed project would be provided in the form of a ground-level yard, private balconies, and a roof deck. See Exhibit 2 for a complete set of project plans (site plan, floor plans, elevations, sections, and renderings).

The full Initial Study is available in the Planning Department File.

The following pages 18 – 32 from the Initial Study summarize the Air Quality analysis.

<i>Topics:</i>	<i>Significant Impact Peculiar to Project or Project Site</i>	<i>Significant Impact not Identified in PEIR</i>	<i>Significant Impact due to Substantial New Information</i>	<i>No Significant Impact not Previously Identified in PEIR</i>
6. AIR QUALITY—Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal, state, or regional ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The Rincon Hill PEIR identified potentially significant air quality impacts related to construction activities that may cause wind-blown dust and pollutant emissions; roadway-related air quality impacts on sensitive land uses; and the siting of uses that emit diesel particulate matter (DPM) and toxic air contaminants (TACs) as part of everyday operations. The Rincon Hill PEIR identified two mitigation measures that would reduce air quality impacts to less-than-significant levels.

Rincon Hill PEIR Mitigation Measure E.1: Construction Air Quality, requires individual projects that include construction activities to include dust control measures and maintain and operate construction equipment so as to minimize exhaust emissions of particulates and other pollutants.

Rincon Hill PEIR Mitigation Measure E.2, Operational Air Quality, requires project sponsors to implement various transportation control measures to reduce the rate of increase in the number of passenger vehicle trips and VMT, thus reducing the operational air quality impacts from implementation of the *Rincon Hill Area Plan*. The transportation control measures include but are not limited to: constructing transit facilities (bus turnouts, bulbs, and shelters); providing shuttle service to and from work sites, commercial areas, and transit stations; providing locker and shower facilities for employees who bicycle or walk to work; providing services (banks, cafeterias, childcare, dry cleaners, etc.) to employees at or near their places of employment.

Two types of air quality impacts are generally evaluated: regional air quality impacts to the air basin (criteria air pollutant analysis), and localized impacts (health risk analysis). Project-related air quality effects from short-term construction activities and long-term operational activities are evaluated to determine both the regional and local impact of the project on air quality. A project-specific analysis was conducted for the proposed project and the results of this analysis are discussed below.

Construction Dust Control

Subsequent to the certification of the Rincon Hill PEIR, the Board of Supervisors approved amendments to the San Francisco Building and Health Codes, referred to as the Construction Dust Control Ordinance (Ordinance No. 176-08, effective August 29, 2008). The intent of this ordinance is to reduce the quantity of

fugitive dust generated during site preparation, demolition, and construction work in order to protect the health of the general public and of on-site workers, to minimize public nuisance complaints, and to avoid orders to stop work by the DBI. Project-related construction activities would result in construction dust, primarily from ground-disturbing activities. In compliance with the Construction Dust Control Ordinance, the project sponsor and contractor responsible for construction activities at the project site would be required to control construction dust on the site through a combination of watering disturbed areas, covering stockpiled materials, sweeping streets and sidewalks, and other measures.

The regulations and procedures set forth in the Construction Dust Control Ordinance would ensure that construction dust impacts would not be significant. Therefore, the portion of PEIR Mitigation Measure E.1 that addresses construction dust is not applicable to the proposed project.

Criteria Air Pollutants

In accordance with the state and federal clean air acts, air pollutant standards are identified for the following six criteria air pollutants: ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead. These air pollutants are termed criteria air pollutants because they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. In general, the San Francisco Bay Area Air Basin (air basin) experiences low concentrations of most pollutants when compared to federal or state standards. The air basin is designated as either in attainment or unclassified for most criteria pollutants with the exception of ozone, PM_{2.5}, and PM₁₀, for which these pollutants are designated as non-attainment for either the state or federal standards.

The air district's *2017 CEQA Air Quality Guidelines* (guidelines)²⁸ provide methodologies for analyzing air quality impacts. The guidelines also provide screening criteria and thresholds of significance for those criteria air pollutants for which the air basin is in non-attainment. The guidelines and supporting documents²⁹ provide substantial evidence for the criteria air pollutant thresholds (as shown in Table 2: Daily Project Construction Emissions, below), and are therefore used by the City.

Construction

Construction activities from the proposed project would result in the emission of criteria air pollutants from equipment exhaust, construction-related vehicular activity, and construction worker automobile trips. Construction of the proposed project would occur over an approximately 24-month period and would require excavation to depths ranging from about 10 feet to about 25.5 feet below ground surface and the removal of about 12,052 cubic yards of soil. Construction-related criteria air pollutants generated by the proposed project were quantified using the California Emissions Estimator Model (CalEEMod) and provided in an air quality memorandum.³⁰ The model, including default data (e.g., emission factors, meteorology, etc.), was developed in collaboration with staff from California's air districts. Default assumptions were used where project-specific information was unknown. Emissions were converted from tons/year to pounds/day using the estimated construction duration of 487 working days. As shown

²⁸ Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, updated May 2017, pp. 2-1 to 2-4.

²⁹ Bay Area Air Quality Management District, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009,

³⁰ San Francisco Planning Department, *Air Quality Memorandum, 429 Beale Street and 430 Main Street*, March 8, 2018.

in Table 2, unmitigated project construction emissions would be below the thresholds of significance for reactive organic gases (ROG), oxides of nitrogen (NO_x), exhaust PM₁₀, and exhaust PM_{2.5}.

Table 2: Daily Project Construction Emissions

	Pollutant Emissions (Average Pounds per Day)			
	ROG	NO _x	Exhaust PM ₁₀	Exhaust PM _{2.5}
Unmitigated Project Emissions	4.63	7.43	0.28	0.26
Significance Threshold	54.0	54.0	82.0	54.0

Emissions over threshold levels are in **bold**.

SOURCE: Air District, 2017; San Francisco Planning Department, 2018

As shown in Table 2, the proposed project would not exceed the construction-related significance thresholds developed by the air district. As such, the proposed project would not result in significant construction-related criteria air pollutant impacts.

Operation

As discussed above, the air district's guidelines also contain screening criteria that can be used to determine whether a proposed project requires a more detailed air quality analysis. If a proposed project meets the screening criteria, then the project would result in less-than-significant criteria air pollutant impacts. The *CEQA Air Quality Guidelines* note that the screening levels are generally representative of new development on greenfield sites³¹ without any form of mitigation measures taken into consideration. In addition, the screening criteria do not account for project design features, attributes, or local development requirements that could also result in lower emissions. The proposed project, with a total of 144 dwelling units, is well below the operational screening criterion of 510 dwelling units for the "apartment, high-rise" land use type. Therefore, the proposed project would not have a significant impact related to criteria air pollutants, and a detailed air quality assessment is not required for operational emissions related to criteria air pollutants.

As discussed above, the proposed project would result in a less-than-significant impact related to operational criteria air pollutant emissions. Therefore, Rincon Hill PEIR Mitigation Measure E.2, which requires project sponsors to implement various transportation control measures to reduce the rate of increase in the number of passenger vehicle trips and VMT, is not applicable to the proposed project. Furthermore, the proposed project is subject to the Transportation Demand Management (TDM) Ordinance, which requires the project sponsor to implement various measures to reduce VMT. The measures specified in the TDM Ordinance are similar to many of the transportation control measures identified in PEIR Mitigation Measure E.2. The proposed project would provide the following TDM measures: bicycle parking, a bicycle repair station, car-share parking and membership, on-site affordable housing, unbundled parking, and parking in an amount below the maximum permitted by the Planning Code.³²

³¹ A greenfield site refers to agricultural or forest land or an undeveloped site earmarked for commercial, residential, or industrial projects.

³² *Transportation Demand Management Plan Application, 429 Beale & 430 Main.*

Health Risk

In addition to criteria air pollutants, individual projects may emit toxic air contaminants (TACs). TACs collectively refer to a diverse group of air pollutants that are capable of causing chronic (i.e., of long-duration) and acute (i.e., severe but short-term) adverse effects to human health, including carcinogenic effects. Human health effects of TACs include birth defects, neurological damage, cancer, and mortality. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

Unlike criteria air pollutants, TACs do not have ambient air quality standards but are regulated by the air district using a risk-based approach to determine which sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.³³

Air pollution does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Land uses such as residences, schools, children's day care centers, hospitals, and nursing and convalescent homes are considered to be the most sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress or, as in the case of residential receptors, their exposure time is greater than that for other land uses. Therefore, these groups are referred to as sensitive receptors. Exposure assessment guidance typically assumes that residences would be exposed to air pollution 24 hours per day, 7 days a week, for 30 years.³⁴ Therefore, assessments of air pollutant exposure to residents typically result in the greatest adverse health outcomes of all population groups.

Exposures to fine particulate matter (PM_{2.5}) are strongly associated with mortality, respiratory diseases, and lung development in children, and other endpoints such as hospitalization for cardiopulmonary disease.³⁵ In addition to PM_{2.5}, diesel particulate matter (DPM) is also of concern. The California Air Resources Board (California air board) identified DPM as a toxic air contaminant in 1998, primarily based on evidence demonstrating cancer effects in humans.³⁶ The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other TAC routinely measured in the region.

In an effort to identify areas of San Francisco most adversely affected by sources of TACs, San Francisco partnered with the air district to conduct a citywide health risk assessment based on an inventory and assessment of air pollution and exposures from mobile, stationary, and area sources within San Francisco. Areas with poor air quality, termed the "Air Pollutant Exposure Zone," were identified based on health-

³³ In general, a health risk assessment is required if the air district concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk. The applicant is then subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, estimating the increased risk of cancer as a result of exposure to one or more TACs.

³⁴ California Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spot Program Risk Assessment Guidelines*, February, 2015, pp. 4-44, 8-6

³⁵ SFPDPH, *Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review*, May 2008.

³⁶ California Air Resources Board (ARB), Fact Sheet, "The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines," October 1998.

protective criteria that consider estimated cancer risk, exposures to fine particulate matter, proximity to freeways, and locations with particularly vulnerable populations. The project site is located within the Air Pollutant Exposure Zone. Existing excess cancer risk at the closest off-site receptor is about 130 per one million persons exposed, and the existing PM_{2.5} concentration at this receptor point is 9.1 µg/m³. The Air Pollutant Exposure Zone criteria are discussed below.

Excess Cancer Risk. The Air Pollution Exposure Zone includes areas where modeled cancer risk exceeds 100 incidents per million persons exposed. This criterion is based on United States Environmental Protection Agency (EPA) guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale level.³⁷ As described by the air district, the EPA considers a cancer risk of 100 per million to be within the “acceptable” range of cancer risk. Furthermore, in the 1989 preamble to the benzene National Emissions Standards for Hazardous Air Pollutants rulemaking,³⁸ the EPA states that it “...strives to provide maximum feasible protection against risks to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately one in one million and (2) limiting to no higher than approximately one in ten thousand [100 in one million] the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years.” The 100 per one million excess cancer cases is also consistent with the ambient cancer risk in the most pristine portions of the Bay Area based on air district regional modeling.³⁹

Fine Particulate Matter. In April 2011, the EPA published *Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards*, “Particulate Matter Policy Assessment.” In this document, EPA staff conclude that the then current federal annual PM_{2.5} standard of 15 µg/m³ should be revised to a level within the range of 13 to 11 µg/m³, with evidence strongly supporting a standard within the range of 12 to 11 µg/m³. The Air Pollutant Exposure Zone for San Francisco is based on the health protective PM_{2.5} standard of 11 µg/m³, as supported by the EPA’s Particulate Matter Policy Assessment, although lowered to 10 µg/m³ to account for uncertainty in accurately predicting air pollutant concentrations using emissions modeling programs.

Proximity to Freeways. According to the California air board, studies have shown an association between the proximity of sensitive land uses to freeways and a variety of respiratory symptoms, asthma exacerbations, and decreases in lung function in children. Siting sensitive uses in close proximity to freeways increases both exposure to air pollution and the potential for adverse health effects. As evidence shows that sensitive uses in an area within a 500-foot buffer of any freeway are at an increased health risk from air pollution,⁴⁰ parcels that are within 500 feet of freeways are included in the Air Pollutant Exposure Zone.

Health Vulnerable Locations. Based on the air district’s evaluation of health vulnerability in the Bay Area, those zip codes (94102, 94103, 94105, 94124, and 94130) in the worst quintile of Bay Area health vulnerability scores as a result of air pollution-related causes were afforded additional protection by

³⁷ BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, p. 67.

³⁸ 54 Federal Register 38044, September 14, 1989.

³⁹ BAAQMD, *Clean Air Plan*, May 2017, p. D-43.

⁴⁰ California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005. Available online at: <http://www.arb.ca.gov/ch/landuse.htm>.

lowering the standards for identifying parcels in the Air Pollutant Exposure Zone to: (1) an excess cancer risk greater than 90 per one million persons exposed, and/or (2) PM_{2.5} concentrations in excess of 9 µg/m³.⁴¹

The above citywide health risk modeling was also used as the basis in approving amendments to the San Francisco Building and Health Codes (Ordinance No. 224-14, effective December 7, 2014), referred to as Health Code Article 38: Enhanced Ventilation Required for Urban Infill Sensitive Use Developments (Article 38). For sensitive-use projects within the APEZ as defined by Article 38, such as the proposed project, the ordinance requires that the project sponsor submit an Enhanced Ventilation Proposal for approval by the Department of Public Health (DPH) that achieves protection from PM_{2.5} (fine particulate matter) equivalent to that associated with a Minimum Efficiency Reporting Value 13 filtration. The DBI will not issue a building permit without written notification from the Director of the DPH that the applicant has an approved Enhanced Ventilation Proposal. In compliance with Article 38, the project sponsor submitted an initial application to the DPH.⁴² The regulations and procedures set forth in Article 38 would protect the project's proposed sensitive receptors from substantial outdoor pollutant concentrations.

In addition, projects within the Air Pollutant Exposure Zone require special consideration to determine whether the project's activities would add a substantial amount of emissions to areas already adversely affected by poor air quality. The following addresses the project's construction and operational health risk impact.

Construction Health Risks

In terms of construction emissions, off-road equipment (which includes construction-related equipment) is a large contributor to diesel particulate matter emissions in California, although since 2007, the California air board has found the emissions to be substantially lower than previously expected.⁴³

Additionally, a number of federal and state regulations are requiring cleaner off-road equipment. Specifically, both the EPA and California air board have set emissions standards for new off-road equipment engines, ranging from Tier 1 to Tier 4. Tier 1 emission standards were phased in between 1996 and 2000, and Tier 4 Interim and Final emission standards for all new engines were phased in between 2008 and 2015. To meet the Tier 4 emission standards, engine manufacturers will be required to produce new engines with advanced emission-control technologies. Although the full benefits of these regulations will not be realized for several years, the EPA estimates that by implementing the federal Tier 4 standards, NO_x and PM emissions will be reduced by more than 90 percent.⁴⁴

In addition, construction activities do not lend themselves to analysis of long-term health risks because of their temporary and variable nature. As explained in the air district's *CEQA Air Quality Guidelines*:

⁴¹ San Francisco Planning Department and San Francisco Department of Public Health, *2014 Air Pollutant Exposure Zone Map (Memo and Map)*, April 9, 2014. These documents are part of San Francisco Board of Supervisors File No. 14806, Ordinance No. 224-14; Amendment to Health Code Article 38.

⁴² *Application for Article 38 Compliance Assessment, 429 Beale Street & 430 Main Street*, submitted March 1, 2018.

⁴³ ARB, Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements, p. 1 and p. 13 (Figure 4), October 2010.

⁴⁴ USEPA, "Clean Air Nonroad Diesel Rule: Fact Sheet," May 2004.

“Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations. Concentrations of mobile-source diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (ARB 2005). In addition, current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. This results in difficulties with producing accurate estimates of health risk.”⁴⁵

Therefore, project-level analyses of construction activities have a tendency to produce overestimated assessments of long-term health risks. However, within the Air Pollutant Exposure Zone, as discussed above, additional construction activity may adversely affect populations that are already at a higher risk for adverse long-term health risks from existing sources of air pollution.

The proposed project would require construction activities for the approximate 24-month construction period. Project construction activities would result in short-term emissions of DPM and other TACs. The project site is located in an area that already experiences poor air quality, and project construction activities would generate additional air pollution, affecting nearby sensitive receptors and resulting in a significant impact. As discussed above, the Rincon Hill PEIR determined that construction emissions from subsequent projects constructed in the Area Plan would result in a significant impact and identified Rincon Hill PEIR Mitigation Measure E.1: Construction Air Quality to reduce impacts to less than significant levels. PEIR Mitigation Measure E.1 requires individual projects that include construction activities to include dust control measures and maintain and operate construction equipment so as to minimize exhaust emissions of particulates and other pollutants. Project Mitigation Measure 2: Construction Air Quality, has been identified to implement the portion of PEIR Mitigation Measure E.1 related to emissions exhaust by requiring engines to meet higher emission standards on certain types of construction equipment. Project Mitigation Measure 2 is discussed on pp. 49-51.

Implementation of Project Mitigation Measure 2 would reduce the magnitude of this impact to a less-than-significant level. While emissions reductions from limiting idling, educating workers and the public, and properly maintaining equipment are difficult to quantify, other measures, specifically the requirement for equipment with Tier 2 engines and Level 3 Verified Diesel Emission Control Strategy (VDECS) can reduce construction emissions by 89 to 94 percent compared to equipment with engines meeting no emission standards and without a VDECS.⁴⁶ Emissions reductions from the combination of

⁴⁵ BAAQMD, *CEQA Air Quality Guidelines*, May 2017, p. 8-7.

⁴⁶ PM emissions benefits are estimated by comparing off-road PM emission standards for Tier 2 with Tier 1 and 0. Tier 0 off-road engines do not have PM emission standards, but the United States Environmental Protection Agency's *Exhaust and Crankcase Emissions Factors for Nonroad Engine Modeling – Compression Ignition* has estimated Tier 0 engines between 50 hp and 100 hp to have a PM emission factor of 0.72 g/hp-hr and greater than 100 hp to have a PM emission factor of 0.40 g/hp-hr. Therefore, requiring off-road equipment to have at least a Tier 2 engine would result in between a 25 percent and 63 percent reduction in PM emissions, as compared to off-road equipment with Tier 0 or Tier 1 engines. The 25 percent reduction comes from comparing the PM emission standards for off-road engines between 25 hp and 50 hp for Tier 2 (0.45 g/bhp-hr) and Tier 1 (0.60 g/bhp-hr). The 63 percent reduction comes from comparing the PM emission standards for off-road engines above 175 hp for Tier 2 (0.15 g/bhp-hr) and Tier 0 (0.40 g/bhp-hr). In addition to the Tier 2 requirement, ARB Level 3 VDECSs are required and would reduce PM by an additional 85 percent. Therefore, the mitigation measure would result in a

Tier 2 equipment with Level 3 VDECS is almost equivalent to requiring only equipment with Tier 4 Final engines.

Operational Health Risk

As discussed under “Previous Environmental Review” (p. 3 of the initial study checklist), the Board of Supervisors heard an appeal of a Community Plan Exemption for a 2007 project proposed at the project site. In upholding the appeal, the Board of Supervisors directed the Planning Department to conduct additional environmental review on the air quality impacts of the 2007 project. The developer decided not to move forward with the 2007 project, so no additional environmental review was conducted. However, additional analysis is provided below for this proposed project.

In compliance with the direction provided by the Board of Supervisors on the 2007 project, a detailed air quality analysis was conducted to evaluate how operation of the proposed project would affect localized health risk to on-site and off-site sensitive receptors.⁴⁷

As discussed above, the project site is located within the Air Pollutant Exposure Zone. The threshold of significance used to evaluate health risks from new sources of TACs is based on the potential for the proposed project to substantially affect the geography and severity of the Air Pollutant Exposure Zone at sensitive receptor locations. For projects that could result in sensitive receptor locations meeting the Air Pollutant Exposure Zone criteria that otherwise would not without the project, a proposed project that would emit PM_{2.5} concentration above 0.3 µg/m³ or result in an excess cancer risk greater than 10.0 per million would be considered a significant impact. The 0.3 µg/m³ PM_{2.5} concentration and the excess cancer risk of 10.0 per million persons exposed are the levels below which the air district considers new sources not to make a considerable contribution to cumulative health risks.⁴⁸ For those locations already meeting the Air Pollutant Exposure Zone criteria, such as the project site, a lower significance standard is required to ensure that a proposed project’s contribution to existing health risks would not be significant. In these areas, a proposed project’s PM_{2.5} concentrations above 0.2 µg/m³ or an excess cancer risk greater than 7.0 per million would be considered a significant impact.⁴⁹

Methodology

The detailed health risk analysis was conducted in accordance with the guidelines and methodologies established by the air district, the California air board, the California Office of Environmental Health Hazard Assessment, and the EPA. The health risk analysis evaluated the estimated cancer risk, chronic

reduction in PM emissions between 89 percent (0.0675 g/bhp-hr) and 94 percent (0.0225 g/bhp-hr), as compared to equipment with Tier 1 (0.60 g/bhp-hr) or Tier 0 engines (0.40 g/bhp-hr).

⁴⁷ Ramboll Environ, *Air Quality Analysis Technical Report, Proposed Building at 430 Main Street/429 Beale Street*, San Francisco, California (hereinafter “AQTR”), March 2018.

⁴⁸ Bay Area Air Quality Management District, *California Environmental Quality Act Guidelines Update, Proposed Air Quality CEQA Thresholds of Significance*, May 3, 2010. Available online at www.baaqmd.gov/-/media/Files/Planning%20and%20Research/CEQA/Proposed_Thresholds_Report_%20May_3_2010_Final.ashx?la=en, accessed February 20, 2014.

⁴⁹ A 0.2 µg/m³ increase in PM_{2.5} would result in a 0.28 percent increase in non-injury mortality or an increase of about twenty-one excess deaths per 1,000,000 population per year from non-injury causes in San Francisco. This information is based on Jerrett M et al. 2005. *Spatial Analysis of Air Pollution and Mortality in Los Angeles*. *Epidemiology*. 16:727-736. The excess cancer risk has been proportionally reduced to result in a significance criteria of 7 per million persons exposed.

hazard index, and concentrations of DPM, total organic gases, and PM_{2.5} associated with the proposed project's operational emissions. The sources of the proposed project's operational emissions include project-related traffic and an emergency diesel generator.

Emissions from project-related traffic were not directly modeled, because the volume of traffic expected to be generated by the proposed project (263 vehicles per day) would not exceed the air district's screening criteria requiring quantification of such emissions (10,000 vehicles per day). However, health risks from the proposed project's expected traffic were evaluated using the air district's Roadway Screening Analysis Calculator. This calculator was used to estimate cancer risk and PM_{2.5} concentrations associated with emissions from project-related traffic. Emissions from the project's proposed emergency generator was modeled using the most recent version of the EPA's atmospheric dispersion modeling system (AERMOD) to estimate the concentrations of TACs at both on-site and off-site sensitive receptor locations. The AERMOD analysis also accounts for building downwash, incorporating nearby building heights. Emissions estimates from AERMOD were then used to assess the potential excess cancer risk at sensitive receptor locations based on exposure assessment guidelines from the California Office of Environmental Health Hazard Assessment and the air district. This methodology also accounts for an anticipated sensitivity to carcinogens of infants and children by incorporation of an age sensitivity factor. The results of this analysis are then added to existing background cancer risk and PM_{2.5} values to determine the existing-plus-project health risk at on-site and off-site sensitive receptor locations.

Findings of AERMOD Analysis

The health risk analysis evaluated the impact of the proposed project's emergency diesel generator and project-related traffic in terms of lifetime excess cancer risk and PM_{2.5} concentration. The results are discussed below.

Table 3: Existing Plus Project Health Risk Analysis (2020), shows the proposed project's contribution to lifetime excess cancer risk and PM_{2.5} concentrations at off-site and on-site sensitive receptor locations. With implementation of the proposed project, the lifetime excess cancer risk at the maximally exposed off-site sensitive receptor would be 132 excess cancer risks per one million persons exposed. The proposed project's total contribution to this cancer risk would be 0.52 excess cancer risks per one million persons exposed, which is well below the significance threshold of 7 excess cancer risks per one million persons exposed. With implementation of the proposed project, PM_{2.5} concentrations at the maximally exposed off-site sensitive receptor would be 9.1 µg/m³. The proposed project's total PM_{2.5} contributions to off-site sensitive receptors would be 0.0093 µg/m³, which is also well below the significance threshold of 0.2 µg/m³. The proposed project's health risk contribution to on-site receptors would be even lower (see Table 3). Therefore, the proposed project would not result in a significant health risk impact, and no mitigation measures are necessary.

Table 3: Existing Plus Project Health Risk Analysis (2020)

Receptor Type	Lifetime Excess Cancer Risk (in a million)		PM _{2.5} Concentration (µg/m ³)	
	On-Site Receptor	Off-Site Receptor	On-Site Receptor	Off-Site Receptor
Proposed Project Emergency Generator	0.21	0.20	0.00028	0.00026
Project Traffic	0.18	0.32	0.0049	0.0091
Project Total	0.39	0.52	0.0052	0.0093
Existing Background	218	131	9.2	9.1
Existing Plus Project	219	132	9.2	9.1

SOURCE: Ramboll Environ, 2018

Cumulative Air Quality Impacts

By its very nature, regional air pollution (criteria air pollutant analysis) is largely a cumulative impact in that no single project is sufficient in size, by itself, to result in non-attainment of air quality standards. Instead, a project's individual emissions contribute to existing cumulative adverse air quality impacts.⁵⁰ The project-level thresholds for criteria air pollutants are based on levels by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. As shown above, the proposed project would not result in significant construction or operational criteria air pollutant impacts. Therefore the project would not result in a cumulatively considerable contribution to regional air quality impacts, and cumulative criteria air pollutant impacts would be less than significant.

In terms of local health risks, a cumulative health risk analysis was conducted under 2040 conditions. This condition accounts for expected vehicle trips in the year 2040 and takes into account future vehicle emissions regulations. Table 4: Cumulative Health Risk Analysis (2040), shows the proposed project's contribution to average annual PM_{2.5} concentrations at on-site and off-site sensitive receptor locations. With implementation of the proposed project, the lifetime excess cancer risk at the maximally exposed off-site sensitive receptor would be 160 excess cancer risks per one million persons exposed. The proposed project's total contribution to this cancer risk would be 0.52 excess cancer risks per one million persons exposed, which is well below the significance threshold of 7 excess cancer risks per one million persons exposed. With implementation of the proposed project, PM_{2.5} concentrations at the maximally exposed off-site sensitive receptor would be 10.0 µg/m³. The proposed project's total PM_{2.5} contributions to off-site sensitive receptors would be 0.0093 µg/m³, which is also well below the significance threshold of 0.2 µg/m³. The proposed project's health risk contribution to on-site receptors would be even lower (see Table 4). Therefore, the proposed project would not result in a significant health risk impact, and no mitigation measures are necessary.

⁵⁰ BAAQMD, *CEQA Air Quality Guidelines*, May 2017, p. 2-1.

Table 4: Cumulative Health Risk Analysis (2040)

Receptor Type	Lifetime Excess Cancer Risk (in a million)		PM _{2.5} Concentration (µg/m ³)	
	On-Site Receptor	Off-Site Receptor	On-Site Receptor	Off-Site Receptor
Proposed Project Emergency Generator	0.21	0.20	0.00028	0.00026
Project Traffic	0.18	0.32	0.0049	0.0091
Project Total	0.39	0.52	0.0052	0.0093
2040 Background	304	160	11.3	10.0
Cumulative 2040	304	160	11.3	10.1

SOURCE: Ramboll Environ, 2018

Computational Fluid Dynamics Air Pollutant Analysis

In addition to the AERMOD analysis, a refined building downwash analysis was conducted using a computational fluid dynamics (CFD) model to evaluate how the proposed project would affect the air flow and the pollutant concentration in the courtyards of BayCrest Towers. Unlike AERMOD, in which building downwash is not directly modeled but is determined by an analytical approximation, CFD modeling involves the direct computation of air flow. With CFD modeling, simulation of wind and pollutant dispersion can be conducted for accurate estimates of pollutant concentrations under different wind speeds and atmospheric conditions.⁵¹ Because the CFD model is not the recommended model by the air district for conducting air pollutant dispersion modeling for CEQA purposes but AERMOD is, the results of this analysis are presented for informational purposes. This analysis also directly addresses the direction provided by the Board of Supervisors on the 2007 project.⁵² The CFD analysis evaluated how the proposed building would affect air pollutant flow at BayCrest Towers from Bay Bridge traffic. Therefore, this analysis considered air pollutant levels at BayCrest Towers both with and without the proposed project. The CFD modeling methodology is detailed in the project's Air Quality Analysis Technical Report.

BayCrest Towers has three exterior courtyards (west, central, and east) that are adjacent to and north of the project site. The west courtyard is enclosed by BayCrest Towers on two sides (north and east) and is open on two sides (south and west). The central courtyard is fully enclosed by BayCrest Towers on two sides (west and east), partially enclosed (three stories) by BayCrest Towers on one side (north), and open on one side (south). The east courtyard is enclosed by BayCrest Towers on two sides (north and west) and is open on two sides (south and east). Construction of the proposed project would enclose the south side of each courtyard, although there would be five feet of separation between BayCrest Towers and the proposed project.

⁵¹ AQTR, p. 15.⁵² AQTR, p. 14.

Findings of CFD Analysis

Table 5: Summary of CFD Analysis for PM_{2.5} Concentration in BayCrest Towers Courtyards, shows the concentrations of Bay Bridge traffic PM_{2.5} in each of the courtyards under existing conditions (without the proposed project) and with the proposed project in place. With implementation of the proposed project, the PM_{2.5} concentrations would decrease in the west courtyard by 0.034 µg/m³ and increase in the central and east courtyards by 0.031 µg/m³ and 0.1 µg/m³, respectively. It is important to note that this analysis does not include background or proposed project PM_{2.5} concentrations. If the proposed project’s traffic and emergency generator contributions (0.0093µg/m³) were added to these totals, the proposed project’s PM_{2.5} contributions would not exceed 0.2 µg/m³.

Table 5: Summary of CFD Analysis for PM_{2.5} Concentration in BayCrest Towers Courtyards

Source	Average Annual PM _{2.5} Concentration (µg/m ³)			
	West Courtyard	Central Courtyard	East Courtyard	Average
Without Proposed Building	0.54	0.44	0.69	0.56
With Proposed Building	0.51	0.47	0.79	0.59
Net Change	-0.034	+0.031	+0.1	+0.032

SOURCE: Ramboll Environ, 2018

<i>Topics:</i>	<i>Significant Impact Peculiar to Project or Project Site</i>	<i>Significant Impact not Identified in PEIR</i>	<i>Significant Impact due to Substantial New Information</i>	<i>No Significant Impact not Previously Identified in PEIR</i>
7. GREENHOUSE GAS EMISSIONS—Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Rincon Hill PEIR

The State CEQA Guidelines were amended in 2010 to require an analysis of a project’s GHG emissions on the environment. The Rincon Hill PEIR was certified in May 2005 and, therefore, did not analyze the effects of GHG emissions. In addition, the BAAQMD has prepared guidelines that provide methodologies for analyzing air quality impacts under CEQA, including the impact of GHG emissions. These guidelines are 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 and allow for projects that are consistent with a GHG reduction strategy to conclude that the project’s GHG impact would be less than significant. The following analysis is based on BAAQMD and CEQA guidelines for

analyzing GHG emissions. As discussed below, the proposed project would not result in any new significant impacts related to GHG emissions.

Proposed Project

San Francisco's *Strategies to Address Greenhouse Gas Emissions*⁵³ presents a comprehensive assessment of policies, programs, and ordinances that collectively represent San Francisco's GHG reduction strategy in compliance with the BAAQMD and CEQA guidelines. These GHG reduction actions have resulted in a 23.3 percent reduction in GHG emissions in 2012 compared to 1990 levels,⁵⁴ exceeding the year 2020 reduction goals outlined in the BAAQMD's *2010 Clean Air Plan*,⁵⁵ Executive Order S-3-05,⁵⁶ and Assembly Bill 32 (also known as the Global Warming Solutions Act).^{57, 58} In addition, San Francisco's GHG reduction goals are consistent with, or more aggressive than, the long-term goals established under Executive Orders S-3-05⁵⁹ and B-30-15^{60, 61} and Senate Bill 32.^{62, 63} Therefore, projects that are consistent with San Francisco's GHG reduction strategy would not result in GHG emissions that would have a

⁵³ San Francisco Planning Department, *Strategies to Address Greenhouse Gas Emissions in San Francisco*, November 2010. Available at http://sfmea.sfplanning.org/GHG_Reduction_Strategy.pdf, accessed March 3, 2016.

⁵⁴ ICF International, *Technical Review of the 2012 Community-wide GHG Inventory for the City and County of San Francisco*, January 21, 2015. Available at http://sfenvironment.org/sites/default/files/fliers/files/icf_verificationmemo_2012sfecommunityinventory_2015-01-21.pdf, accessed March 16, 2015.

⁵⁵ Bay Area Air Quality Management District, *Clean Air Plan*, September 2010. Available at <http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans>, accessed March 3, 2016.

⁵⁶ Office of the Governor, Executive Order S-3-05, June 1, 2005. Available at <https://www.gov.ca.gov/news.php?id=1861>, accessed March 3, 2016.

⁵⁷ California Legislative Information, Assembly Bill 32, September 27, 2006. Available at http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf, accessed March 3, 2016.

⁵⁸ Executive Order S-3-05, Assembly Bill 32, and the *Bay Area 2010 Clean Air Plan* set a target of reducing GHG emissions to below 1990 levels by year 2020.

⁵⁹ Executive Order S-3-05 sets forth a series of target dates by which statewide emissions of GHGs need to be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels (approximately 457 million metric tons of carbon dioxide equivalent (MTCO₂E)); by 2020, reduce emissions to 1990 levels (approximately 427 million MTCO₂E); and by 2050, reduce emissions to 80 percent below 1990 levels (approximately 85 million MTCO₂E). Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in "carbon dioxide-equivalent," which present a weighted average based on each gas's heat absorption (or "global warming") potential.

⁶⁰ Office of the Governor, Executive Order B-30-15, April 29, 2015. Available at <https://www.gov.ca.gov/news.php?id=18938>, accessed March 3, 2016. Executive Order B-30-15 sets a state GHG emissions reduction goal of 40 percent below 1990 levels by the year 2030.

⁶¹ San Francisco's GHG reduction goals are codified in Section 902 of the Environment Code and include: (i) by 2008, determine City GHG emissions for year 1990; (ii) by 2017, reduce GHG emissions by 25 percent below 1990 levels; (iii) by 2025, reduce GHG emissions by 40 percent below 1990 levels; and by 2050, reduce GHG emissions by 80 percent below 1990 levels.

⁶² Senate Bill 32 amends California Health and Safety Code Division 25.5 (also known as the California Global Warming Solutions Act of 2006) by adding Section 38566, which directs that statewide greenhouse gas emissions to be reduced by 40 percent below 1990 levels by 2030.

⁶³ Senate Bill 32 was paired with Assembly Bill 197, which would modify the structure of the State Air Resources Board; institute requirements for the disclosure of greenhouse gas emissions criteria pollutants and toxic air contaminants; and establish requirements for the review and adoption of rules, regulations, and measures for the reduction of greenhouse gas emissions.

significant effect on the environment and would not conflict with state, regional, and local GHG reduction plans and regulations.

The proposed project would increase the intensity of use of the project site by introducing a total of 144 dwelling units and 73 parking spaces to replace a retail self-storage use. Therefore, the proposed project would contribute to annual long-term increases in GHGs as a result of residential operations that result in an increase in energy use, water use, wastewater treatment, and solid waste disposal. Construction activities would also result in temporary increases in GHG emissions.

The proposed project would be subject to regulations adopted to reduce GHG emissions as identified in the GHG reduction strategy. As discussed below, compliance with the applicable regulations would reduce the project's GHG emissions related to transportation, energy use, waste disposal, wood burning, and use of refrigerants.

Compliance with the City's Transportation Sustainability Fee, bicycle parking requirements, low-emission car parking requirements, and car sharing requirements would reduce the proposed project's transportation-related GHG emissions. These regulations reduce GHG emissions from single-occupancy vehicles by promoting the use of alternative transportation modes with zero or lower GHG emissions on a per capita basis.

The proposed project would be required to comply with the energy efficiency requirements of the City's Green Building Code, the Stormwater Management Ordinance, the Residential Water Conservation Ordinance, and the Water Efficient Irrigation Ordinance, all of which would promote energy and water efficiency, thereby reducing the proposed project's energy-related GHG emissions.⁶⁴

The proposed project's waste-related emissions would be reduced through compliance with the City's Recycling and Composting Ordinance, Construction and Demolition Debris Recovery Ordinance, and construction and demolition debris recycling requirements. These regulations reduce the amount of materials sent to a landfill, reducing GHGs emitted by landfill operations. These regulations also promote reuse of materials, conserving their embodied energy⁶⁵ and reducing the energy required to produce new materials.

Compliance with the City's street tree planting requirements would serve to increase carbon sequestration. Regulations requiring low-emitting finishes would reduce volatile organic compounds (VOCs).⁶⁶ Thus, the proposed project was determined to be consistent with San Francisco's GHG reduction strategy.⁶⁷

⁶⁴ Compliance with water conservation measures reduces the energy (and GHG emissions) required to convey, pump, and treat water required for the project.

⁶⁵ Embodied energy is the total energy required for the extraction, processing, manufacture, and delivery of building materials to the building site.

⁶⁶ While not a GHG, VOCs are precursor pollutants that form ground-level ozone. Increased ground-level ozone is an anticipated effect of future global warming that would result in added health effects locally. Reducing VOC emissions would reduce the anticipated local effects of global warming.

⁶⁷ San Francisco Planning Department, *Greenhouse Gas Analysis: Compliance Checklist for 429 Beale Street and 430 Main Street*, December 12, 2017.

Therefore, the proposed project’s GHG emissions would not conflict with state, regional, and local GHG reduction plans and regulations. Furthermore, the proposed project is within the scope of the development evaluated in the PEIR and would not result in impacts associated with GHG emissions beyond those disclosed in the PEIR. For these reasons, the proposed project would not result in significant GHG emissions that were not identified in the Rincon Hill PEIR, and no mitigation measures are necessary.

<i>Topics:</i>	<i>Significant Impact Peculiar to Project or Project Site</i>	<i>Significant Impact not Identified in PEIR</i>	<i>Significant Impact due to Substantial New Information</i>	<i>No Significant Impact not Previously Identified in PEIR</i>
8. WIND AND SHADOW—Would the project:				
a) Alter wind in a manner that substantially affects public areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Wind

The Rincon Hill PEIR analyzed the wind impacts from potential development that could occur under the *Rincon Hill Area Plan*. Development anticipated under the *Rincon Hill Area Plan* was found to have the potential to create new exceedances of the wind hazard criterion established in the Planning Code. Under the Rincon Hill PEIR, a project that causes the wind hazard criterion to be exceeded for more than one hour per year would be considered to have a significant impact. A project that would cause exceedances of the wind comfort criteria, but not the wind hazard criterion, would not be considered to have a significant impact.⁶⁸ In order to ensure that implementation of the *Rincon Hill Area Plan* would not result in significant wind impacts, Mitigation Measure G.1, identified in the Rincon Hill PEIR, requires the City to adopt Planning Code controls on wind speeds for the RH-DTR District that are, at a minimum, functionally equivalent to the controls contained in Planning Code Section 148. A legislative amendment was adopted to add Section 825(d) to the Planning Code, which establishes regulations related to ground-level wind currents in the RH-DTR District. Each development project proposed under the *Rincon Hill Area Plan* is required to comply with the provisions of Planning Code Section 825(d). The potential wind impacts of each individual project would have to be assessed, and if it is determined that any individual project would result in exceedances of the wind hazard criterion, design modifications or wind reduction measures would have to be implemented to eliminate those exceedances. For these reasons, the Rincon Hill PEIR concluded that, with mitigation, implementation of the *Rincon Hill Area Plan* would result in less-than-significant wind impacts.

In compliance with Planning Code Section 825(d), the proposed project underwent wind tunnel testing to determine if it would cause hazardous wind conditions (i.e., if it would cause winds to reach or exceed 26 mph for one hour a year). The results of the wind tunnel test are presented in a wind tunnel report and are summarized below.⁶⁹

⁶⁸ Rincon Hill PEIR, p. 177.

⁶⁹ RWDI, *Pedestrian Wind Study, 430 Main Street, San Francisco, California*, November 1, 2017.

EXHIBIT C

MEMO

Via Electronic Mail

To **Michael Li, SF Environmental Planning**
Josh Pollak, SF Environmental Planning

From **Michael Keinath**
Taylor Vencill

Subject **Response to Trinity Review of Technical Report by Ramboll Environ dated October 2017 for proposed project at 430 Main Street/ 429 Beale Street ("Project")**

Ramboll US Corporation (Ramboll, formerly known as Ramboll Environ) has reviewed the memorandum prepared by Trinity Consultants for the Committee for Healthy Housing on January 19, 2018 ("Trinity Memorandum") which commented on the Air Quality Analysis Technical Report for the proposed building at 430 Main Street/429 Beale Street in San Francisco, CA ("AQTR") we prepared in October 2017.¹ This memorandum has been prepared to address comments raised by Trinity. The organization of this memorandum follows the Analysis sections outlined in Section 3.0 of the Trinity Memorandum.

Date March 26, 2018

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BUILDING DOWNWASH MODELING

Trinity incorrectly asserts that the less-refined regulatory model should have been used in place of a sophisticated computational fluid dynamics analysis which can accurately predict complex wind flows around structures.

As discussed in Section 4.1.3 of the AQTR, the most recent version of the American Meteorological Society/Environmental Protection Agency regulatory air dispersion model (AERMOD Version 16216r) was used to evaluate the ambient air concentrations of DPM and PM2.5 from the proposed diesel generator operation. Section 4.1.3.4 also discusses building downwash parameters used in the model. The San Francisco Planning Department directed this methodological approach. It is consistent with guidance issued by the Bay Area Air Quality Management District (BAAQMD) and the Office of Environmental Health Hazard Assessment (OEHHA). Therefore, both the regulatory model (AERMOD) and the computational fluid dynamics (CFD) model were used to evaluate the proposed project.

The CFD model was utilized to perform a refined building downwash analysis, specifically evaluating potential impacts of the proposed building on PM2.5 concentrations from nearby traffic sources. AERMOD can be used to model dispersion of pollutants from roadways, taking into account local meteorology,

¹ An updated AQTR was submitted in March 2018 to correct inconsistencies between the report technical tables and text. All results presented in the technical tables remained the same, only changes to the numbers presented in the text were made. This updated report did not include any additional analyses or calculations, nor did it change any conclusions presented in the October 2017 report.

elevation data, emissions source parameters, and basic building structure shapes; but it is not sophisticated enough to account for complex urban features. As described in Section 8.2 of the AQTR, "AERMOD does not have the capacity to account for flow interaction between multiple buildings or buildings of complex shape." Rather, AERMOD approximates building downwash for single simple-shaped buildings. In contrast to the AERMOD modeling, the CFD modeling directly simulates plume dispersion around the Project buildings, surrounding buildings, the elevated section of I-80, and other surrounding roadways. As such, it is appropriate to use a refined model for a project such as this to address the concerns raised by the Board of Supervisors in the 2009 CEQA appeal of a separate project on this site (BOS file no. 091254).

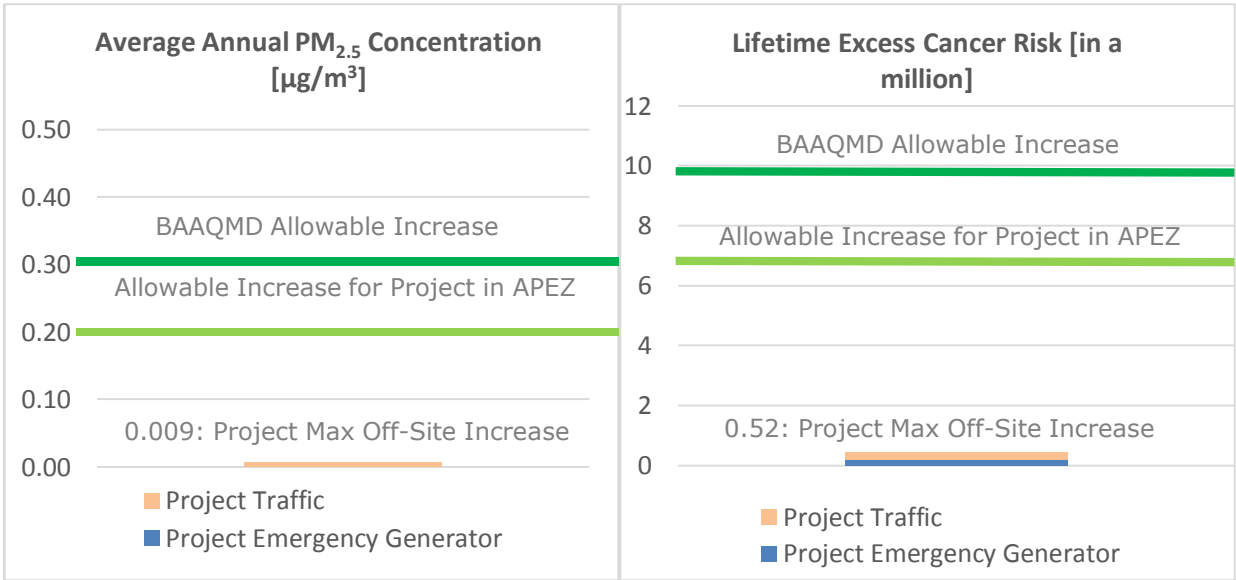
OFFSITE IMPACTS

Trinity incorrectly asserts that the Project is required to further assess and mitigate its PM_{2.5} emissions. The Project will not increase pollutant concentrations above the incremental project thresholds and already takes into account the significance standards relevant to areas with high existing pollutant concentrations.

For background on air quality thresholds, the project site is within an Air Pollution Exposure Zone ("APEZ"), due to its proximity to major freeways or other pollution sources that contribute to high existing health risks in excess of the San Francisco action levels. As shown in Table A of the AQTR, the incremental health risk thresholds for projects located in an APEZ are 7 in a million for excess lifetime cancer risk and 0.2 ug/m³ for average annual PM_{2.5} concentration. These thresholds are lower than thresholds for projects outside the APEZ of 10 in a million and 0.3 ug/m³, respectively. These higher thresholds are recommended by the Bay Area Air Quality Management District (BAAQMD) for use in CEQA analyses throughout their jurisdiction. The City and County of San Francisco have developed the lower thresholds to be more health protective in areas of the City which may experience higher exposure to pollution. The thresholds compared to in the AQTR account for the greater pre-project PM_{2.5} concentration and related health risks that are present in the APEZ. Further, under CEQA, the Project is not required to mitigate for existing conditions.

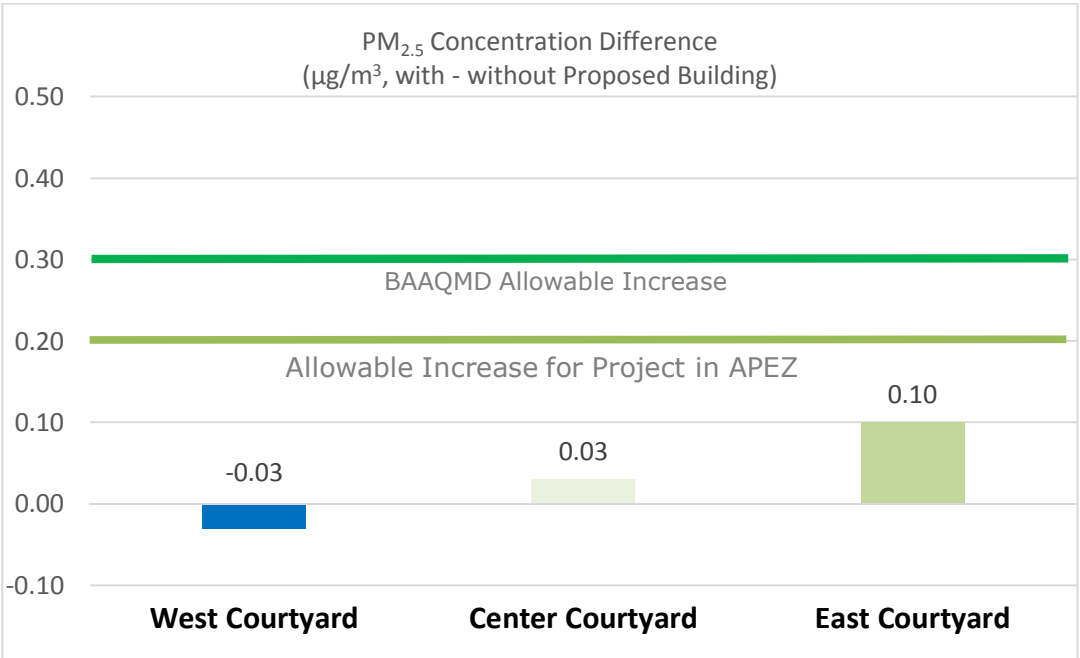
Analyses were conducted to determine whether the additional impact of the proposed Project emissions to off-site and on-site receptors would exceed these incremental thresholds. As shown in Tables 8 through 11 of the AQTR, the maximum cumulative cancer risk and PM_{2.5} concentrations from traffic plus emergency generator operations were 0.52 in a million and 0.0093 ug/m³, respectively. These maximum impacts are far below the thresholds and are therefore not considered to significantly impact health. Comparisons of the maximum Project impacts to the PM_{2.5} and cancer risk thresholds are shown in Figure 1.

Figure 1. (left) PM_{2.5} Thresholds and Maximum Project Impact. (right) Cancer Risk Thresholds and Maximum Project Impact.



CFD modeling was performed to further visualize the potential impacts of the proposed building on existing traffic emissions dispersion in response to the 2009 CEQA appeal of a previous project on the project site. As shown in Table 13 of the AQTR, the maximum increase in PM_{2.5} concentration in any of the neighboring courtyards due to the building placement was 0.1 µg/m³. This increase would also be well below the threshold of 0.2 µg/m³, as shown in Figure 2.

Figure 2. CFD Modeling Results



CONSTRUCTION IMPACTS

Trinity asserts that a construction air quality analysis is needed to complete CEQA requirements, even though construction impacts for the Proposed Project have already been analyzed in the Rincon Hill Plan and these impacts will be discussed further in the Community Plan Exemption.

The Rincon Hill Plan EIR includes a discussion of air quality impacts from construction that applies to this project. It also identifies mitigation measures that can be implemented on a project-specific basis. Potential construction impacts, Project compliance, and mitigation measures from the Rincon Hill Plan EIR are expected to be discussed in detail in the Project's CEQA determination document.

DIESEL PARTICULATE MATTER

Trinity incorrectly asserts that acute health impacts should have been evaluated for components of diesel exhaust for the emergency generator, in contradiction to BAAQMD recommendations and practice.

The analysis presented in the AQTR quantified the cancer risk and chronic hazard index impacts due to the proposed rooftop diesel emergency generator. While the OEHHA guidance does present a methodology to quantify the acute health impacts by speciating diesel exhaust, the OEHHA guidance does not require the evaluation of acute health impacts, and the circumstances of the project here do not warrant it because a single emergency diesel generator is not expected to be a significant source of pollutants with acute health impacts.

Furthermore, BAAQMD states "diesel exhaust particulate matter should be used as a surrogate for all TAC emissions from diesel-fueled compression-ignition internal combustion engines" (BAAQMD Rule 2-5). There is currently no acute non-cancer toxicity value available for diesel exhaust particulate matter. In addition, before operating the diesel generator, the applicant must comply with BAAQMD permitting requirements, which include a health risk analysis and permit conditions set to ensure health standards are met.

PROJECT TRAFFIC IMPACTS

Trinity incorrectly concludes that an analysis of Project traffic emissions and impacts using 2014 and 2017 data is warranted, even though the Proposed Project risk results are well below thresholds using a conservative screening approach.

The Proposed Project is expected to generate just 263 net new trips per day, which is well below the threshold of 10,000 trips per day to be considered a low-impact source (BAAQMD, 2017) (see Section 3.1.2 of the AQTR). BAAQMD only requires an evaluation of health risks for roads with 10,000 or more trips per day.

Nevertheless, a screening analysis was performed using the BAAQMD Roadway Screening Calculator, which is a BAAQMD-developed tool for use in CEQA analyses. The Calculator uses emission factors for the County for calendar year (CY) 2014 from EMFAC2011. These factors could be updated to use either factors from the current USEPA-approved model EMFAC2014, or the newest ARB model EMFAC2017. In addition, the factors could be adjusted to more accurately represent the health risks at project buildout in year 2020 rather than 2014. To test this potential refinement, Ramboll ran EMFAC2011 for San Francisco County and CY 2014 (as used in the current BAAQMD Roadway Screening Calculator) and compared to results from EMFAC2014 and EMFAC2017 for CY 2020 (representative of conditions for an updated Screening Calculator). As shown in Table 1 below, using the more up-to-date emission factors would actually reduce the cancer risk and PM_{2.5} concentrations from that reported in the AQTR. Thus, again, the results in the AQTR are conservative (i.e., worst case).

Table 1. Reduction of Emissions Factors for Project Buildout Year (2020) with Newer EMFAC vs BAAQMD Screening Tool Default (EMFAC2011 for Year 2014)

Pollutant	Reduction Using EMFAC2014	Reduction Using EMFAC2017
PM2.5	-16%	-22%
PM10	-62%	-66%
TOG (exhaust)	-88%	-83%
TOG (evaporative)	-28%	-22%

As shown in Table 7 of the AQTR, the traffic analysis resulted in a total lifetime excess cancer risk of 0.32 in a million and a PM_{2.5} concentration of 0.0091 ug/m³ at the maximum exposed off-site receptor. This analysis could be refined to more specifically model emissions and dispersion at the Project site; however, as shown in the table above, this would only reduce estimated impacts further. Therefore, since results are already well below significance thresholds, a more refined analysis is not required.

METEOROLOGICAL DATA

Trinity incorrectly asserts that the use of the meteorological data approved by the District for use in the citywide San Francisco Community Risk Reduction Plan likely would not satisfy the 2015 OEHHA Guidelines.

Section 4.1.3.1 of the AQTR describes the selection of meteorological data for use in AERMOD modeling. A single year of data from Mission Bay was used to be consistent with the data used in the SF CRRP. The 2015 OEHHA Guidance states "...the District may determine that one year of representative meteorological data is sufficient to adequately characterize the facility's impact" (OEHHA, 2015, p. 4-28). The SF CRRP methodology was developed in partnership with the Air District and thus they have approved of the use of the meteorological data used.

EXHIBIT D



430 MAIN STREET/429 BEALE STREET AIR QUALITY ANALYSIS

DISCUSSION OUTLINE

Who we are

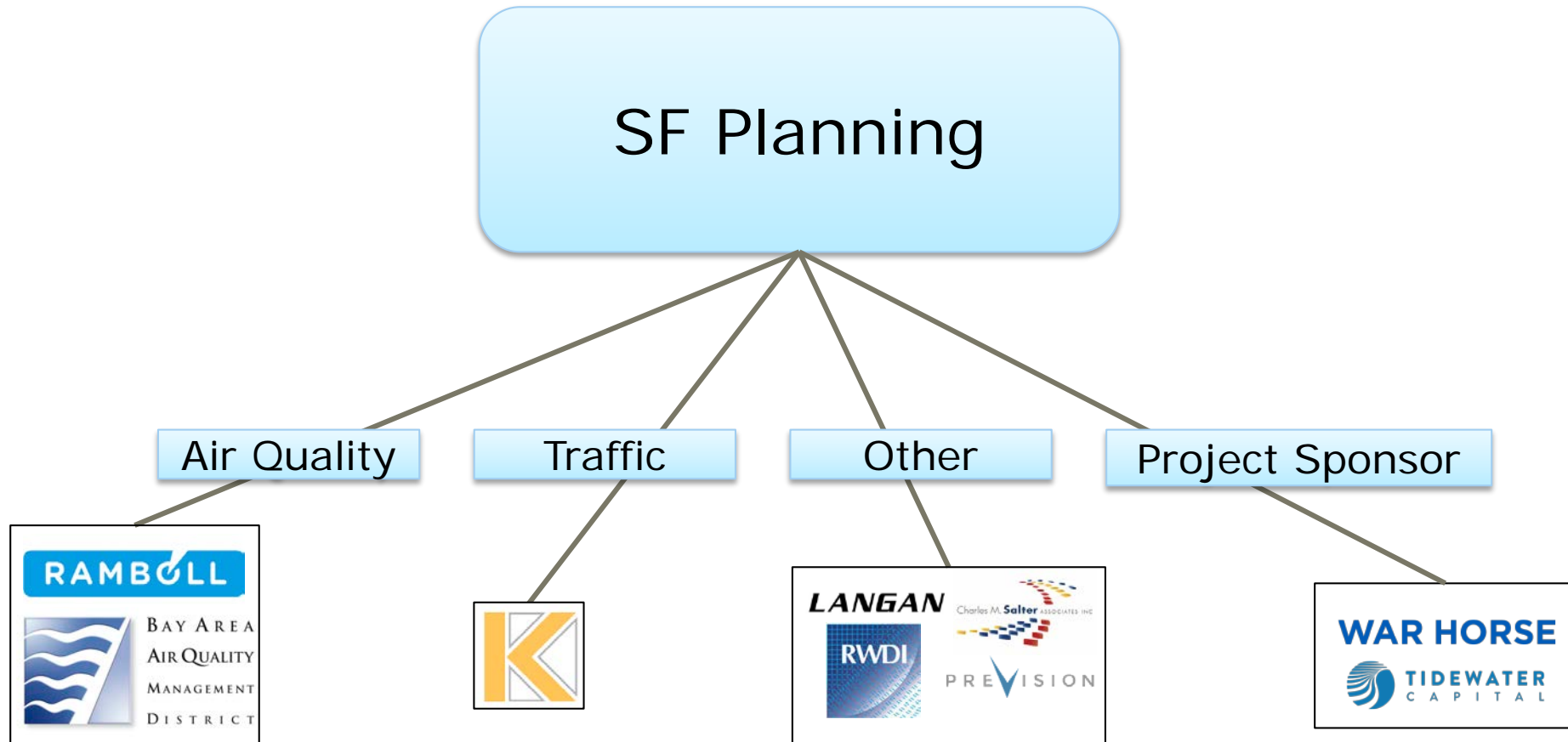
Analyses conducted

Results

Questions



PROJECT STRUCTURE, OUR ROLE



WHO WE ARE

RAMBOLL AT A GLANCE

- Leading engineering, design, and consultancy employing 13,000 experts.
- 2,100 experts in Environment & Health
- Our Northern California offices form the largest **Air Quality and Climate Change** center of excellence within the firm



RAMBOLL

SAN FRANCISCO EXPERTISE

- Work with the SF Planning Department, SF Department of Public Health and the Bay Area Air Quality Management District (BAAQMD) to develop the technical analyses to delineate the Air Pollution Exposure Zones (APEZ)
- Prior Air Quality and Health Risk Evaluations conducted in San Francisco include:
 - Candlestick Point-Hunter's Point Shipyard Phase II;
 - 34th America's Cup (AC34) and James R. Herman Cruise Terminal;
 - Golden State Warriors Chase Center; and
 - Forest City's Pier 70
 - Central SOMA

ANALYSES CONDUCTED

Task 1: CEQA Analyses

Required

Evaluation of Potential **Health Risk Impacts** (Cancer Risk, PM_{2.5} Concentrations) from Project (Traffic & Operation of Emergency Generator)

Results: Project impacts are a **small fraction** of allowable increase.

Task 2: Building Downwash Analysis

Per Community Request

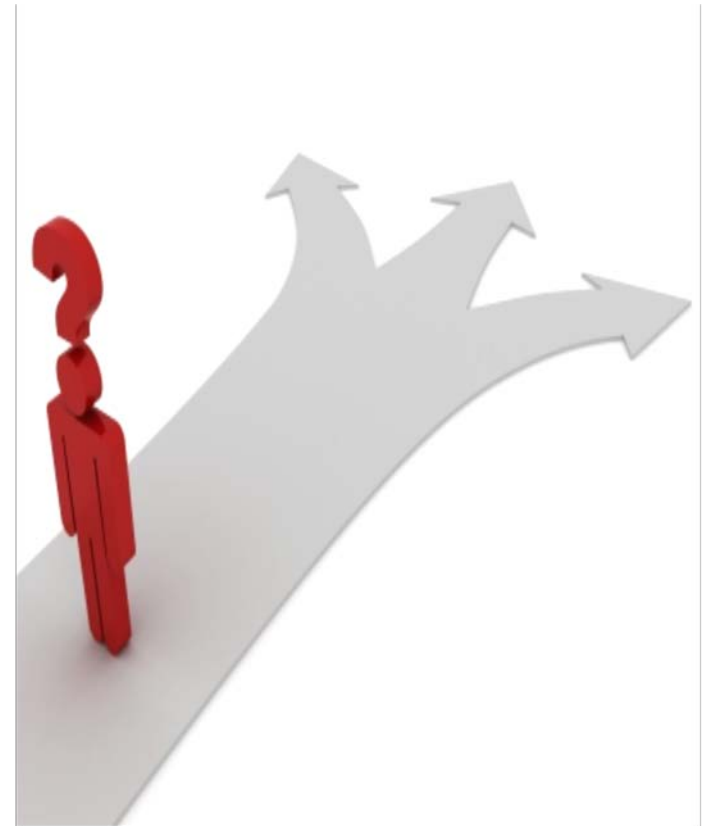
Refined Building Downwash Analysis to Evaluate PM_{2.5} Concentrations in Nearby Courtyards

Results: All modeled changes in Courtyards are **significantly below** allowable increases.

HEALTH RISK ASSESSMENT - WHAT IS IT?

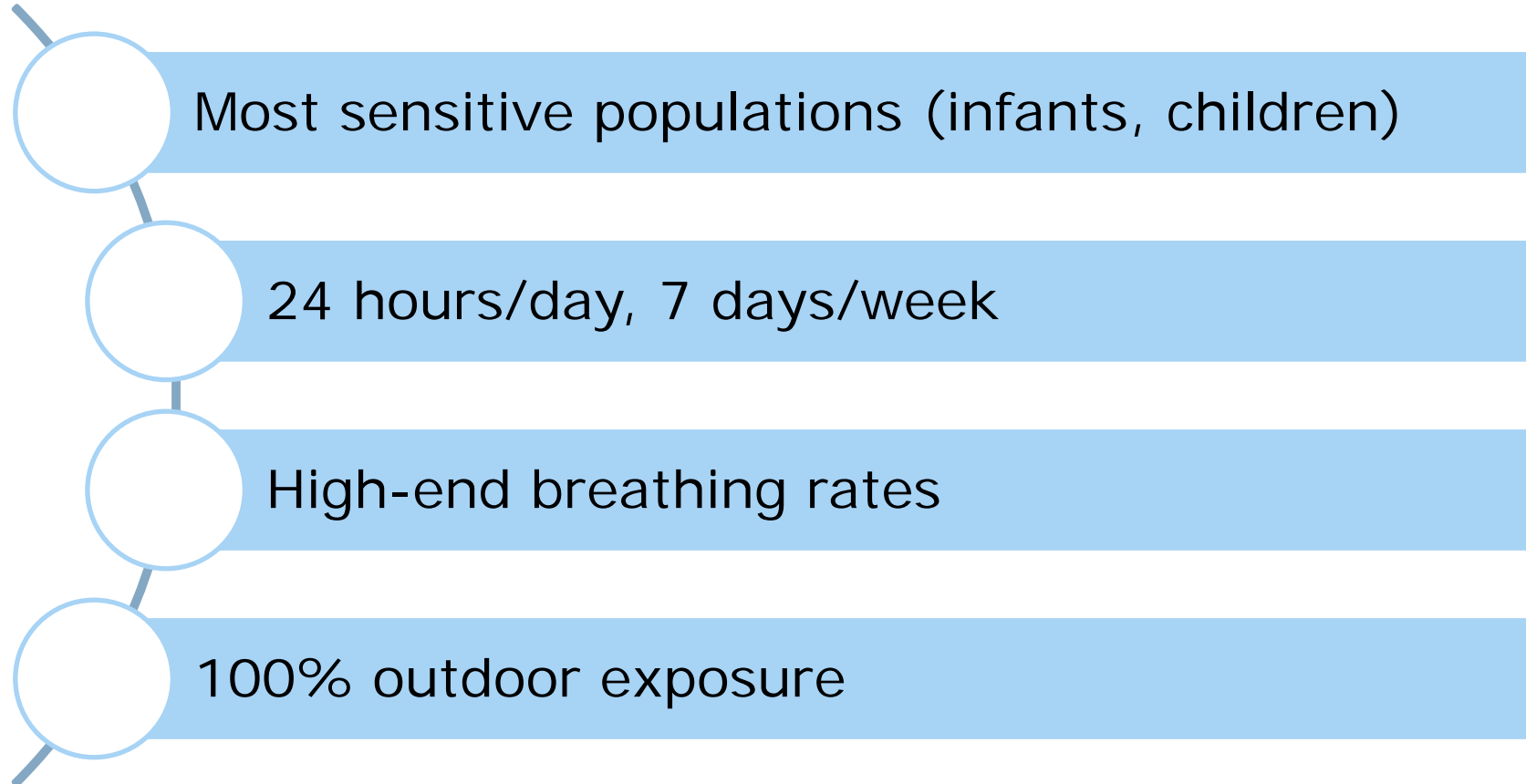
Designed to be health protective and protect the community.

- Questions to answer:
 - What chemicals?
 - What concentrations?
 - How much are people exposed to?
 - What are the possible health effects?
- Intended to be very conservative, meaning **health protective**.
- Designed to **protect the community** as a whole, as well as the individual.



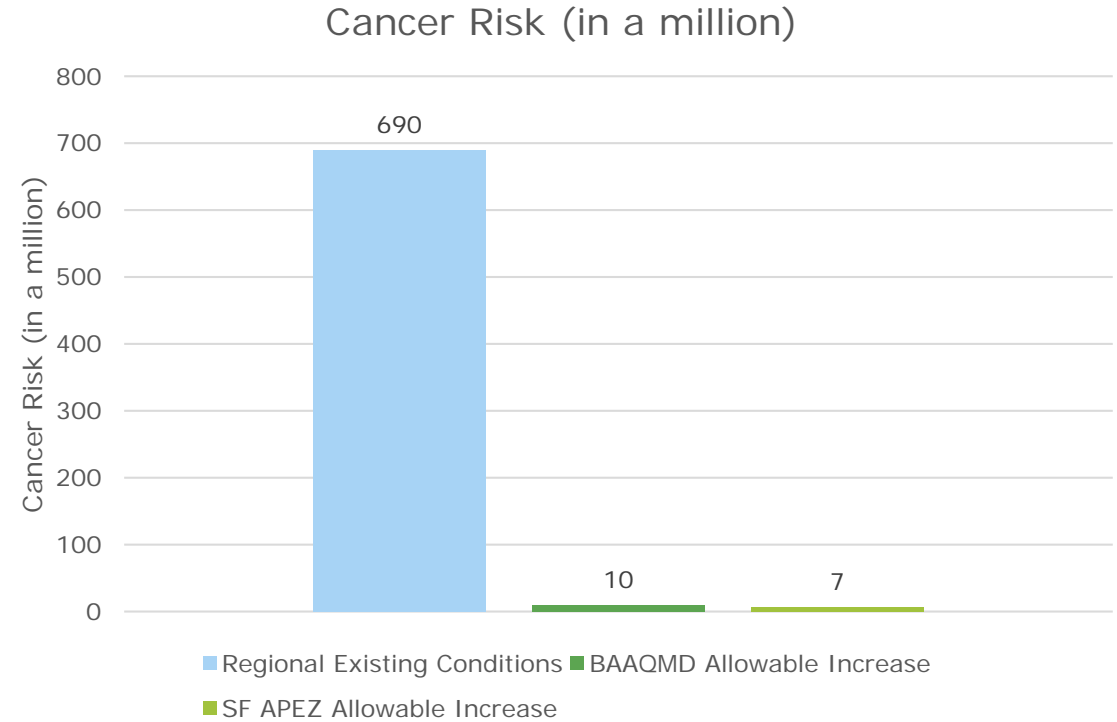
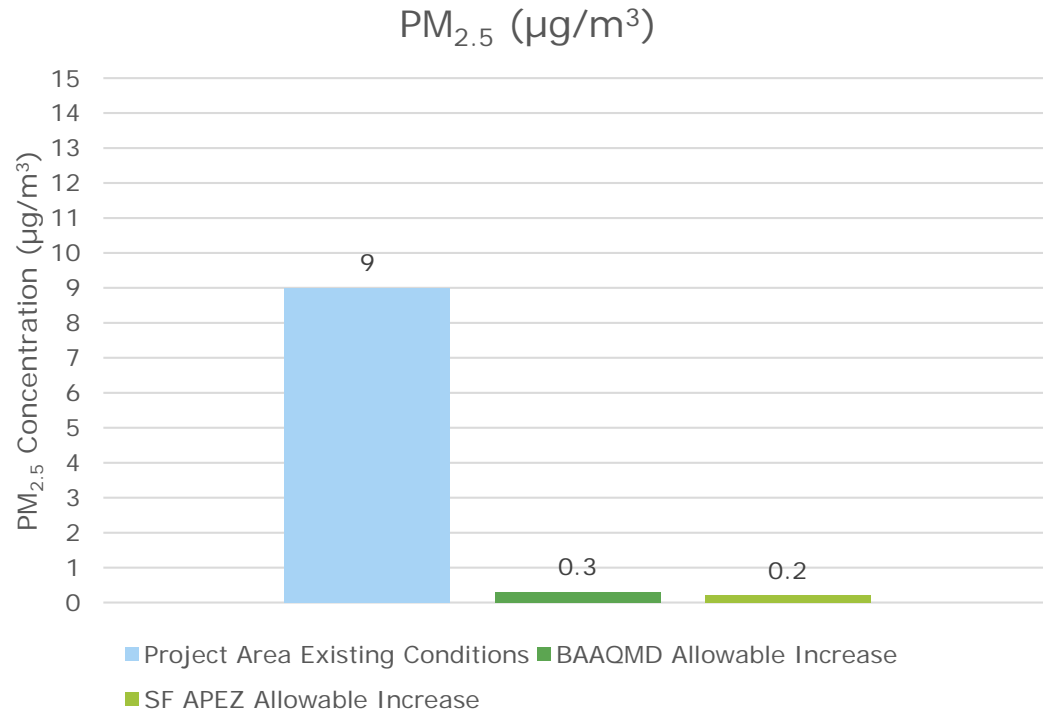
HEALTH RISK ASSESSMENT - ASSUMPTIONS

Results conservatively determined based on the most vulnerable population.



HEALTH RISK ASSESSMENT - THRESHOLDS

Health protective incremental thresholds are a tiny fraction of existing conditions.



Incremental thresholds are a small fraction of existing conditions and are designed to be **health protective and de minimis**

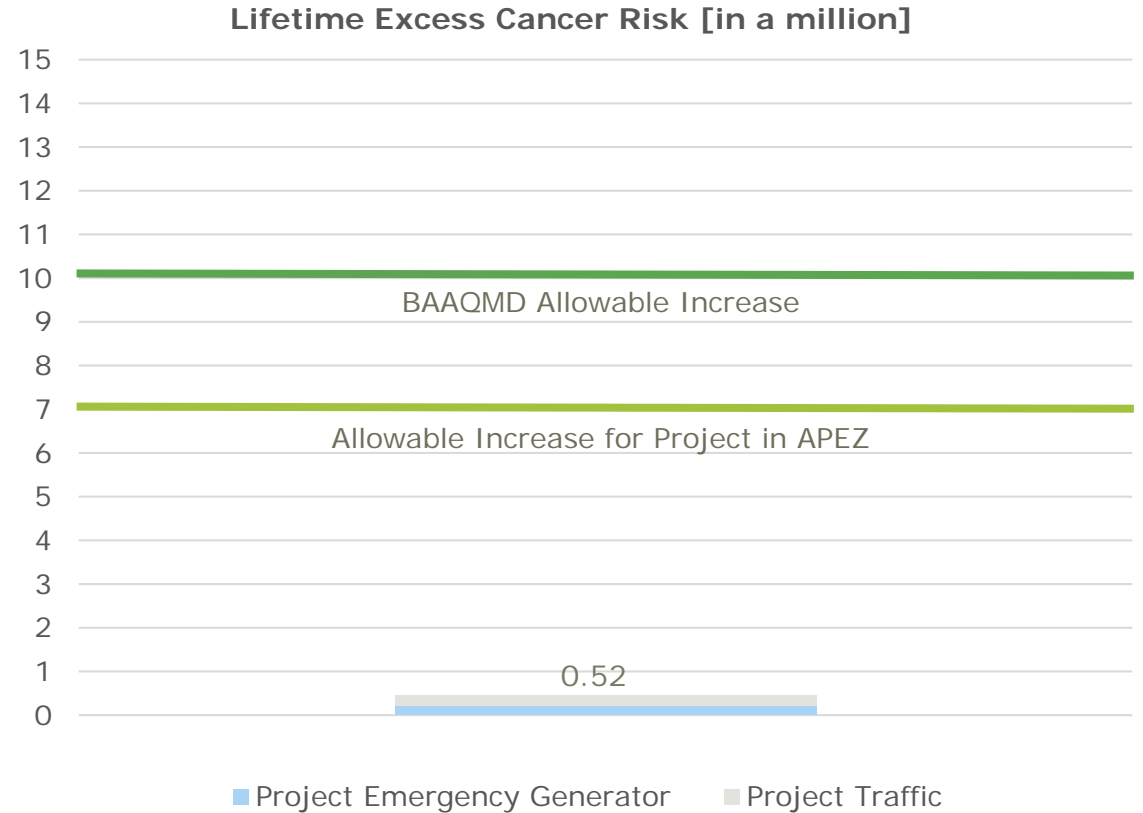
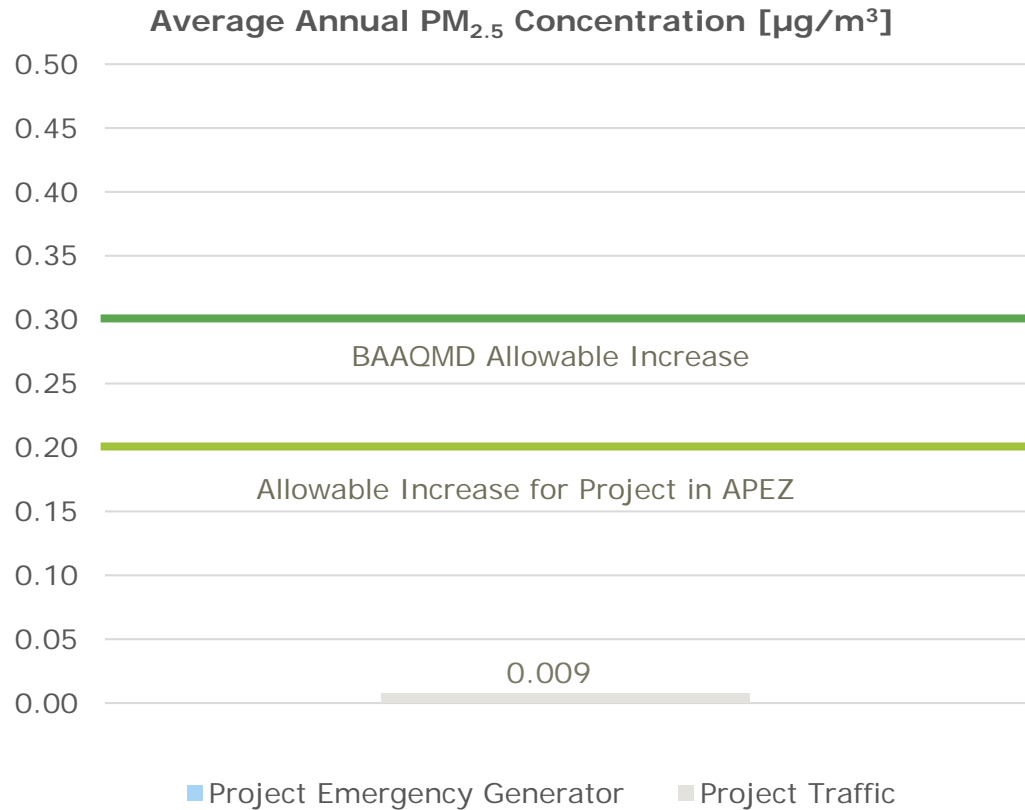
*Existing conditions shown here represent cancer risk and PM_{2.5} concentrations from existing sources and do not include potential Project impacts.



APEZ = Air Pollution Exposure Zone
 BAAQMD = Bay Area Air Quality Management District
 Cancer risk = risk of contracting cancer over a 70-year lifetime
 µg/m³ = micrograms per cubic meter
 PM_{2.5} = fine particulate matter (less than 2.5 microns in diameter)
 SF = San Francisco
 Threshold = insignificant increase above background

HEALTH RISK ASSESSMENT - RESULTS

Project impacts are a small fraction of health protective allowable increases.

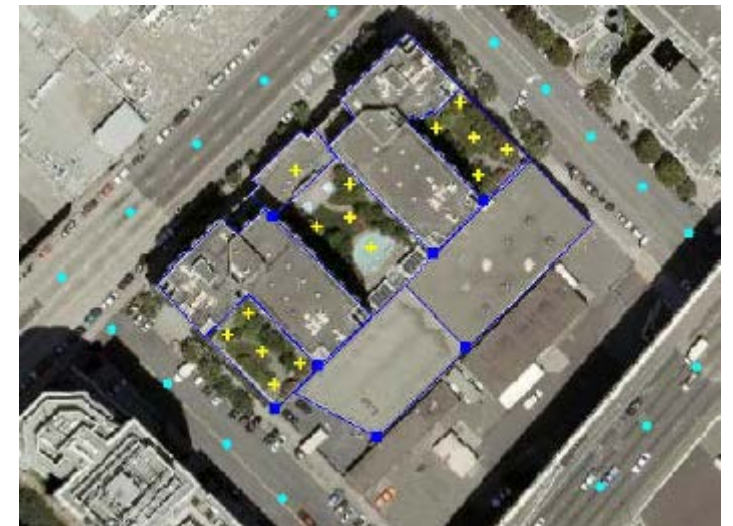


Project impacts are a **small fraction** of allowable increases

DOWNWASH ANALYSIS – PREVIOUS STUDY

Current analysis is much more sophisticated and appropriate for this site.

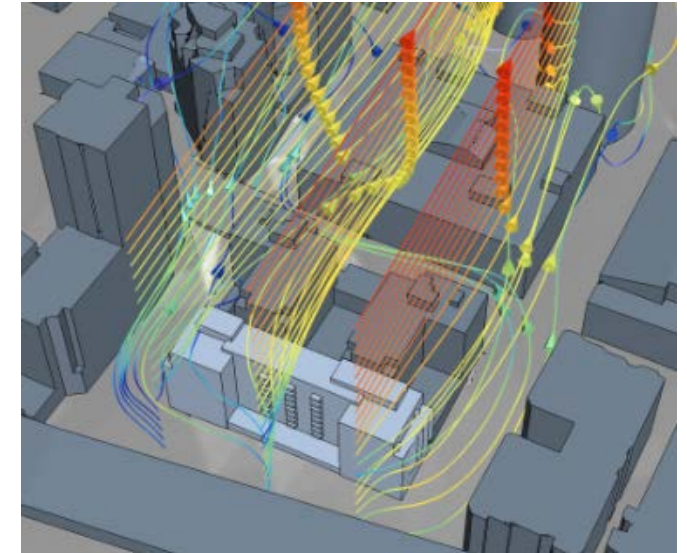
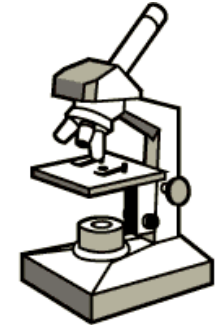
- Trinity Consultants, Inc. completed a **screening-level analysis** (in 2009) of a previously proposed project
 - Model selection: AERMOD (USEPA dispersion model)
 - Trinity report, “Model may **not** accurately assess the effects of the individual wind patterns created by high-rise structures...”
 - **Qualitative conclusions** showed *possibility* of increased PM_{2.5} concentrations in courtyards and recommended more **comprehensive air dispersion study** to quantify actual PM_{2.5} changes due to downwash
 - → **Comprehensive air dispersion study now completed and results presented in following slides**



DOWNWASH ANALYSIS – REFINED STUDY

SF Planning determined CFD modeling is the most appropriate method for addressing downwash.

- Model Selection: Atmospheric Computational Fluid Dynamics (CFD) model
 - True scale 3D model of surrounding buildings, topography, and structures
 - **SF Planning & BAAQMD determined this is the most appropriate model** for the building configurations seen here
- Evaluated how proposed building affects airflow and pollutant concentrations in outdoor courtyards of BayCrest Towers.
- PM_{2.5} impacts from traffic on nearby roadways were evaluated pre- and post- building construction
 - **SF Planning determined this was the best approach to answering the questions posed in the Trinity Report.**



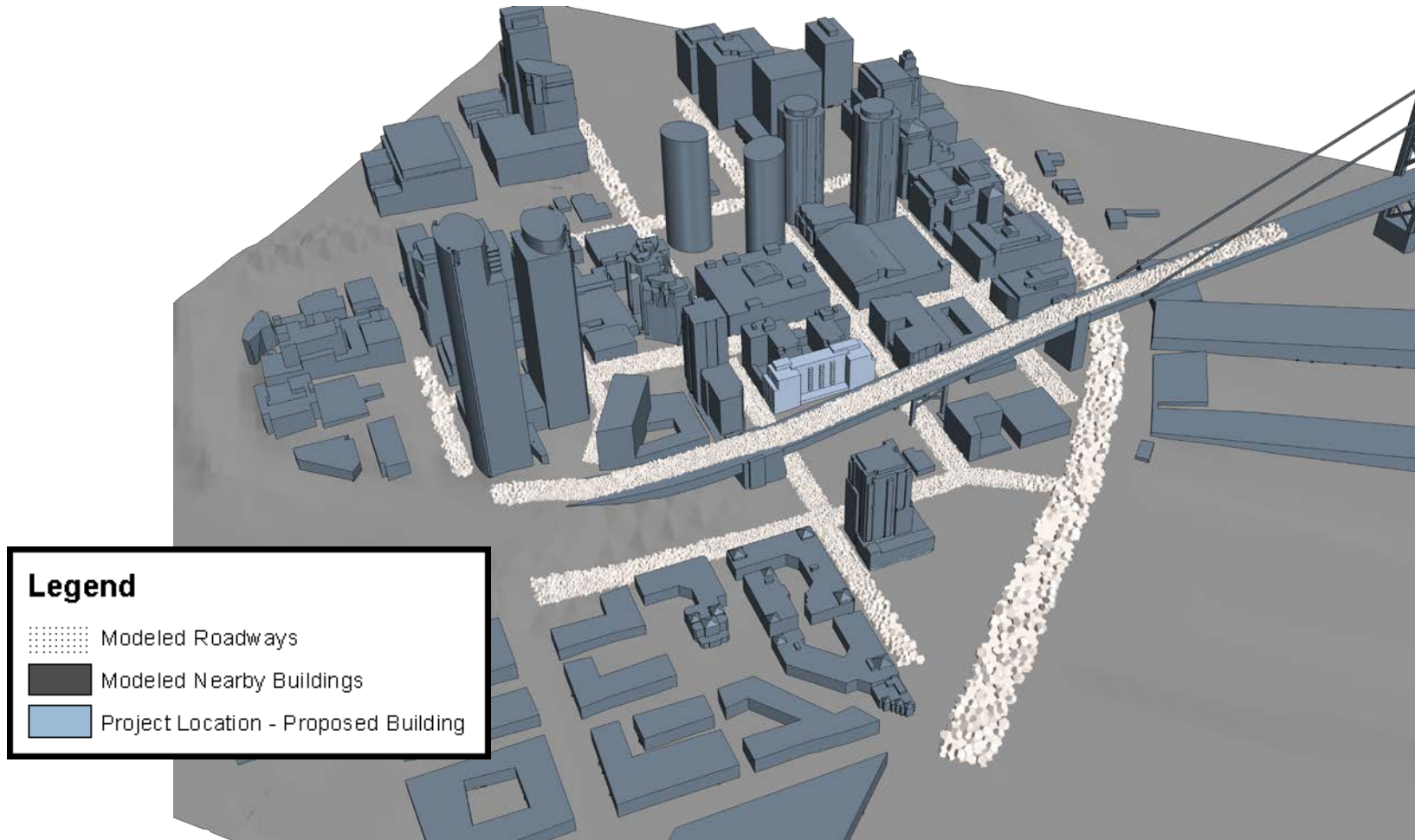
3D MODEL - PROPOSED BUILDING

True scale 3D model of surrounding buildings, topography, and structures.



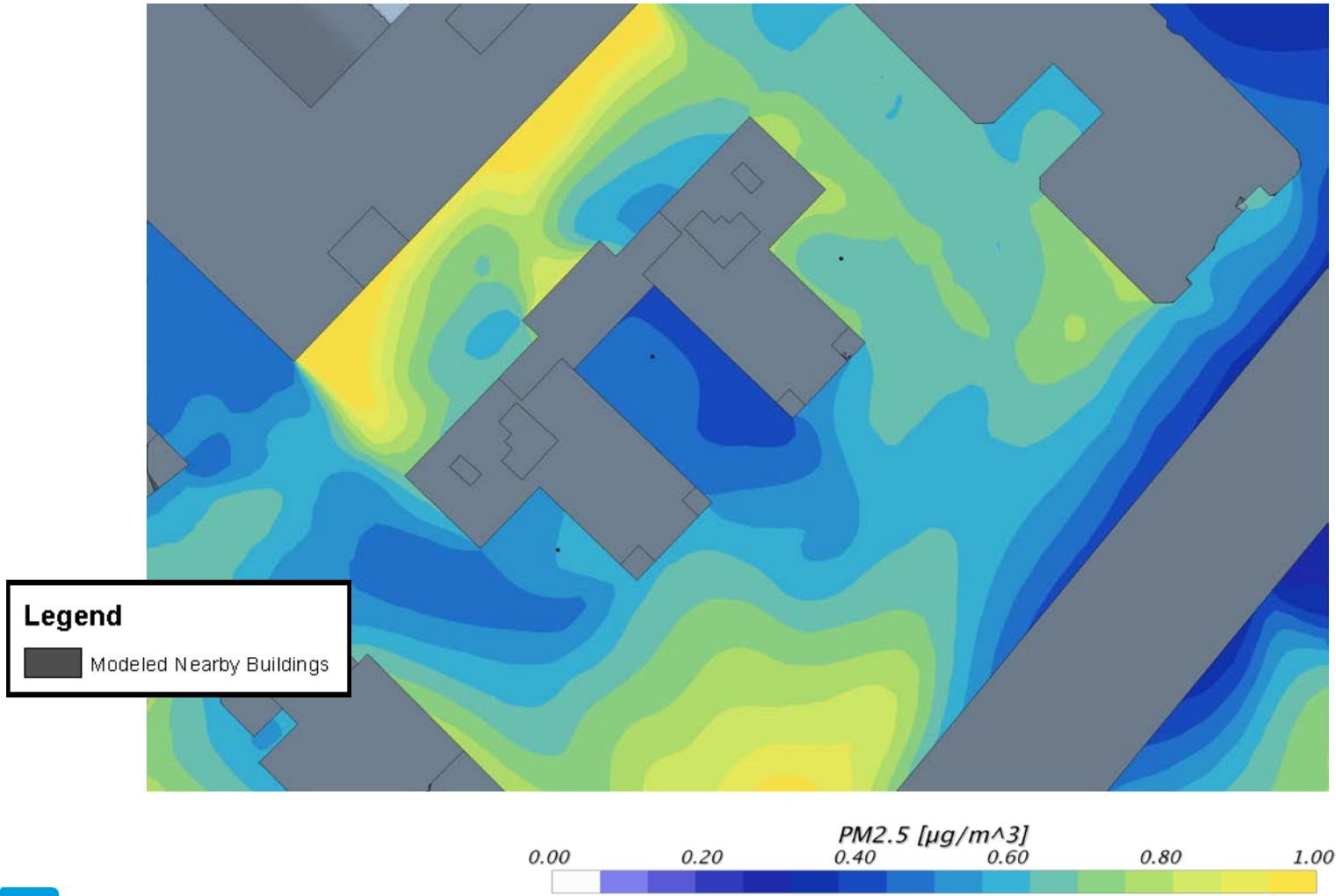
3D MODEL – TRAFFIC EVALUATED

Traffic evaluated from all surrounding roadways.



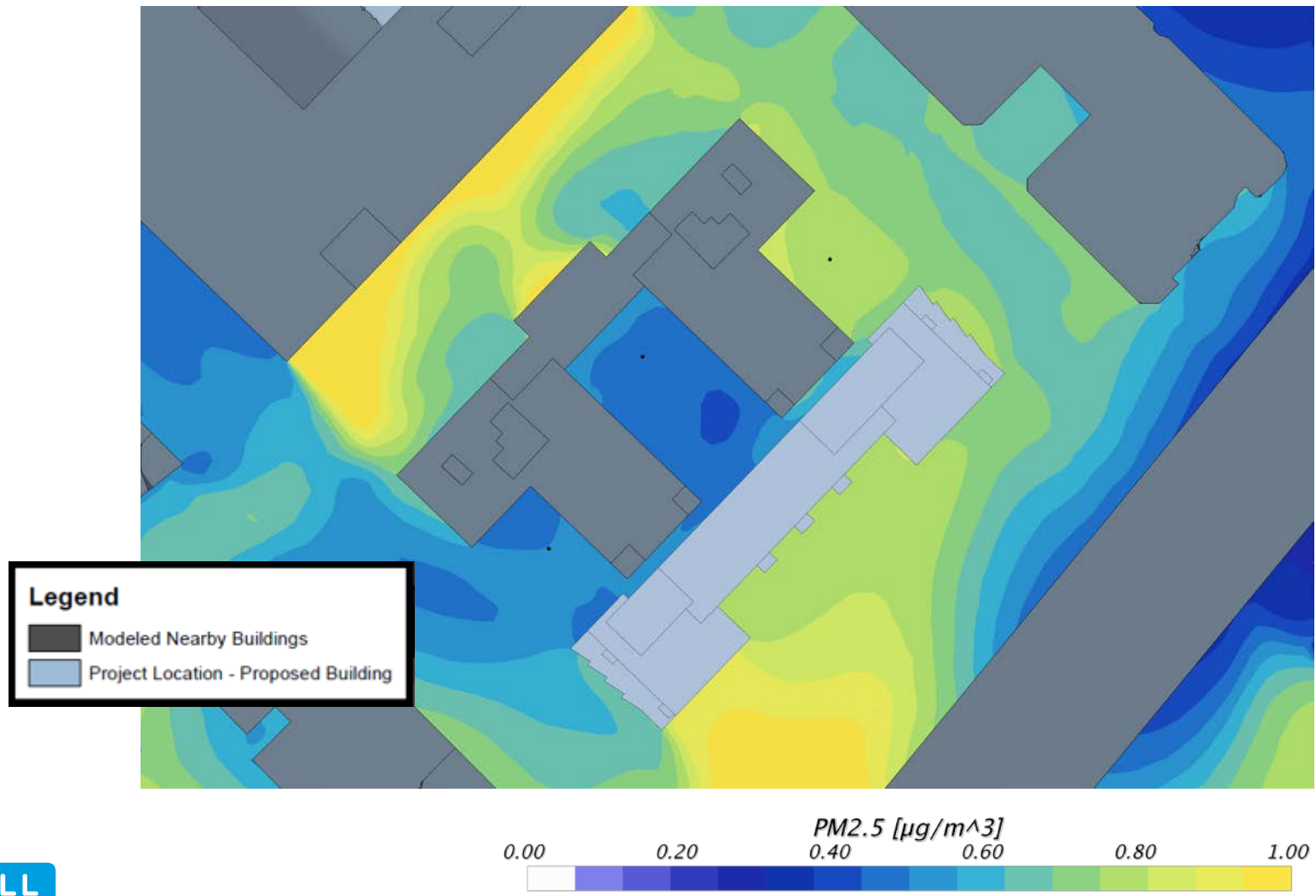
ANALYSIS RESULTS – CURRENT CONDITIONS

Below illustrates the current conditions in the immediate area.



ANALYSIS RESULTS – PROPOSED PROJECT

Below illustrates the projected conditions in the immediate area with the proposed project.



ANALYSIS RESULTS – CURRENT VS. PROPOSED

All changes in courtyards are significantly below health protective threshold.

All modeled changes in Courtyards are **significantly below** health protective threshold

Legend

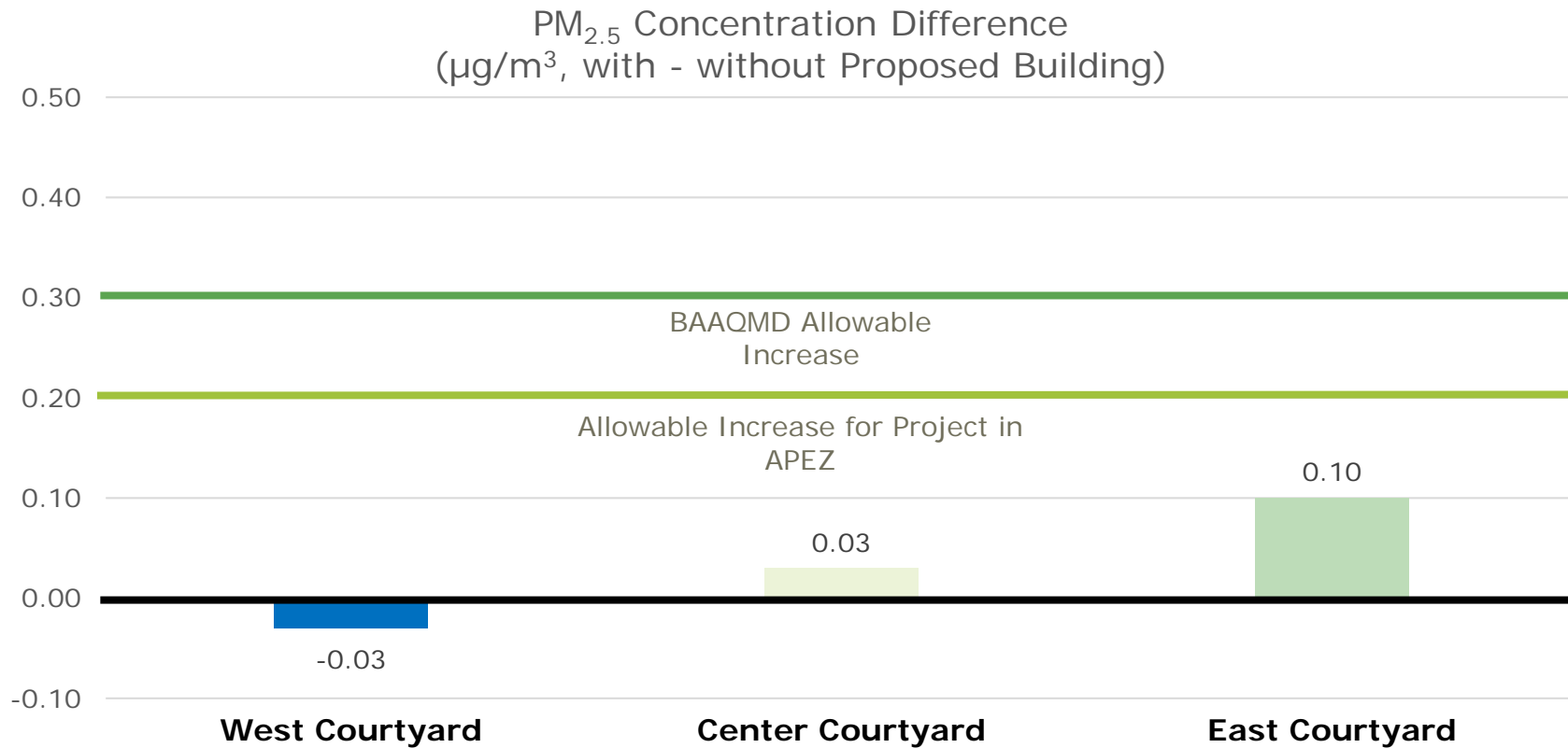
- Modeled Nearby Buildings
- Project Location - Proposed Building



ANALYSIS RESULTS – PROJECTED CHANGE

Project impacts are significantly below health protective incremental limits.

Average Annual PM_{2.5} Concentration (µg/m³)



Project impacts are **significantly below** limits, which are **health protective** and **de minimis**

Modeled changes average 0.35% of existing conditions: a **small fraction**

West Courtyard experiences an **improvement in Air Quality**

QUESTIONS?

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Principal

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