2.3.2.4 LAND USE PROJECTS EFFICIENCY-BASED THRESHOLD

GHG efficiency metrics can also be utilized as thresholds to assess the GHG efficiency of a project on a per capita basis (residential only projects) or on a "service population" basis (the sum of the number of jobs and the number of residents provided by a project) such that the project will allow for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020). GHG efficiency thresholds can be determined by dividing the GHG emissions inventory goal (allowable emissions), by the estimated 2020 population and employment. This method allows highly efficient projects with higher mass emissions to meet the overall reduction goals of AB 32. Staff believes it is more appropriate to base the land use efficiency threshold on the service population metric for the land use-driven emission inventory. This approach is appropriate because the threshold can be applied evenly to all project types (residential or commercial/retail only and mixed use) and uses only the land use emissions inventory that is comprised of all land use projects. Staff will provide the methodology to calculate a project's GHG emissions in the revised CEQA Guidelines, such as allowing infill projects up to a 50 percent or more reduction in daily vehicle trips if the reduction can be supported by close proximity to transit and support services, or a traffic study prepared for the project.

Table 6 – California 2020 GHG Emissions, Population Projections and GHG Efficiency Thresholds - Land Use Inventory Sectors

Land Use Sectors Greenhouse Gas Emissions Target	295,530,000
Population	44,135,923
Employment	20,194,661
California Service Population (Population + Employment)	64,330,584
AB 32 Goal GHG emissions (metric tons CO_2e)/SP[1]	**4.6**

Notes: AB = Assembly Bill; CO_2e = carbon dioxide equivalent; GHG = greenhouse gas; SP = service population.
[1] Greenhouse gas efficiency levels were calculated using only the "land use-related" sectors of ARB's emissions inventory.
Please refer to Appendix D for detailed calculations.
Sources: Data compiled by EDAW 2009, ARB 2009a, DOF 2009, EDD 2009, ICF Jones & Stokes 2009.

Staff proposes a project-level efficiency threshold of 4.6 MT CO_2e/SP, the derivation of which is shown Table 6. This efficiency-based threshold reflects very GHG-efficient projects. As stated previously and below, staff anticipates that significance thresholds (rebuttable presumptions of significance at the project level) will function on an interim basis only until adequate programmatic approaches are in place at the city, county, and regional level that will allow the CEQA streamlining of individual projects. (See State CEQA Guidelines §15183.5 ["Tiering and Streamlining the Analysis of Greenhouse Gas Emissions"]).

2.3.3 PLAN-LEVEL GHG THRESHOLDS

Staff proposes using a two step process for determining the significance of proposed plans and plan amendments for GHG. As a first step in assessing plan-level impacts, Staff

is proposing that agencies that have adopted a qualified Greenhouse Gas Reduction Strategy (or have incorporated similar criteria in their general plan) and the general plan is consistent with the Greenhouse Gas Reduction Strategy, the general plan would be considered less than significant. In addition, as discussed above for project-level GHG impacts, Staff is proposing an efficiency threshold to assess plan-level impacts. Staff believes a programmatic approach to limiting GHG emissions is appropriate at the plan-level. Thus, as projects consistent with the Greenhouse Gas Reduction Strategy are proposed, they may be able to tier off the plan and its environmental analysis.

2.3.3.1 GHG EFFICIENCY METRICS FOR PLANS

For local land use plans, a GHG-efficiency metric (e.g., GHG emissions per unit) would enable comparison of a proposed general plan to its alternatives and to determine if the proposed general plan meets AB 32 emission reduction goals.

AB 32 identifies local governments as essential partners in achieving California's goal to reduce GHG emissions. Local governments have primary authority to plan, zone, approve, and permit how and where land is developed to accommodate population growth and the changing needs of their jurisdiction. ARB has developed the Local Government Operations Protocol and is developing a protocol to estimate community-wide GHG emissions. ARB encourages local governments to use these protocols to track progress in reducing GHG emissions. ARB encourages local governments to institutionalize the community's strategy for reducing its carbon footprint in its general plan. SB 375 creates a process for regional integration of land development patterns and transportation infrastructure planning with the primary goal of reducing GHG emissions from the largest sector of the GHG emission inventory, light duty vehicles.

If the statewide AB 32 GHG emissions reduction context is established, GHG efficiency can be viewed independently from the jurisdiction in which the plan is located. Expressing projected 2020 mass of emissions from land use-related emissions sectors by comparison to a demographic unit (e.g., population and employment) provides evaluation of the GHG efficiency of a project in terms of what emissions are allowable while meeting AB 32 targets.

Two approaches were considered for efficiency metrics. The "service population" (SP) approach would consider efficiency in terms of the GHG emissions compared to the sum of the number of jobs and the number of residents at a point in time. The per capita option would consider efficiency in terms of GHG emissions per resident only. Staff recommends that the efficiency threshold for plans be based on all emission inventory sectors because, unlike land use projects, general plans comprise more than just land use related emissions (e.g. industrial). Further, Staff recommends that the plan threshold be based on the service population metric as general plans include a mix of residents and employees. The Service Population metric would allow decision makers to compare GHG efficiency of general plan alternatives that vary residential and non-residential development totals, encouraging GHG efficiency through improving jobs/housing balance. This approach would not give preference to communities that accommodate more residential (population-driven) land

uses than non-residential (employment driven) land uses which could occur with the per capita approach.

A SP-based GHG efficiency metric (see Table 7) was derived from the emission rates at the State level that would accommodate projected population and employment growth under trend forecast conditions, and the emission rates needed to accommodate growth while allowing for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020).

Table 7 – California 2020 GHG Emissions, Population Projections and GHG Efficiency Thresholds - All Inventory Sectors

All Inventory Sectors Greenhouse Gas Emissions Target	426,500,000
Population	44,135,923
Employment	20,194,661
California Service Population (Population + Employment)	64,330,584
AB 32 Goal GHG emissions (metric tons CO_2e)/SP[1]	**6.6**

Notes: AB = Assembly Bill; CO_2e = carbon dioxide equivalent; GHG = greenhouse gas; SP = service population.
[1] Greenhouse gas efficiency levels were calculated using only the "land use-related" sectors of ARB's emissions inventory.
Please refer to Appendix D for detailed calculations.
Sources: Data compiled by EDAW 2009, ARB 2009a, DOF 2009, EDD 2009, ICF Jones & Stokes 2009.

If a general plan demonstrates, through dividing the emissions inventory projections (MT CO_2e) by the amount of growth that would be accommodated in 2020, that it could meet the GHG efficiency metrics proposed in this section (6.6 MT CO_2e/SP from all emission sectors, as noted in Table 7), then the amount of GHG emissions associated with the general plan would be considered less than significant, regardless of its size (and magnitude of GHG emissions). In other words, the general plan would accommodate growth in a manner that would not hinder the State's ability to achieve AB 32 goals, and thus, would be less than significant for GHG emissions and their contribution to climate change. The efficiency metric would not penalize well-planned communities that propose a large amount of development. Instead, the SP-based GHG efficiency metric acts to encourage the types of development that BAAQMD and OPR support (i.e., infill and transit-oriented development) because it tends to reduce GHG and other air pollutant emissions overall, rather than discourage large developments for being accompanied by a large mass of GHG emissions. Plans that are more GHG efficient would have no or limited mitigation requirements to help them complete the CEQA process more readily than plans that promote GHG inefficiencies, which will require detailed design of mitigation during the CEQA process and could subject a plan to potential challenge as to whether all feasible mitigation was identified and adopted. This type of threshold can shed light on a well-planned general plan that accommodates a large amount of growth in a GHG-efficient way.

When analyzing long-range plans, such as general plans, it is important to note that the planning horizon will often surpass the 2020 timeframe for implementation of AB 32. Executive Order S-3-05 establishes a more aggressive emissions reduction goal for the year 2050 of 80 percent below 1990 emissions levels. The year 2020 should be viewed as a milestone year, and the general plan should not preclude the community from a trajectory toward the 2050 goal. However, the 2020 timeframe is examined in this threshold evaluation because doing so for the 2050 timeframe (with respect to population, employment, and GHG emissions projections) would be too speculative. Advances in technology and policy decisions at the state level will be needed to meet the aggressive 2050 goals. It is beyond the scope of the analysis tools available at this time to examine reasonable emissions reductions that can be achieved through CEQA analysis in the year 2050. As the 2020 timeframe draws nearer, BAAQMD will need to reevaluate the threshold to better represent progress toward 2050 goals.

2.3.4 GREENHOUSE GAS REDUCTION STRATEGIES

Finally, many local agencies have already undergone or plan to undergo efforts to create general or other plans that are consistent with AB 32 goals. The Air District encourages such planning efforts and recognizes that careful upfront planning by local agencies is invaluable to achieving the state's GHG reduction goals. If a project is consistent with an adopted Qualified Greenhouse Gas Reduction Strategy that addresses the project's GHG emissions, it can be presumed that the project will not have significant GHG emission impacts. This approach is consistent with CEQA Guidelines Sections 15064(h)(3) and 15183.5(b), which provides that a "lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem."

A qualified Greenhouse Gas Reduction Strategy (or similar adopted policies, ordinances and programs) is one that is consistent with all of the AB 32 Scoping Plan measures and goals. The Greenhouse Gas Reduction Strategy should identify a land use design, transportation network, goals, policies and implementation measures that would achieve AB 32 goals. Strategies with horizon years beyond 2020 should consider continuing the downward reduction path set by AB 32 and move toward climate stabilization goals established in Executive Order S-3-05.

Qualified Greenhouse Gas Reduction Strategy

A qualified Greenhouse Gas Reduction Strategy adopted by a local jurisdiction should include the following elements as described in the State CEQA Guidelines Section 15183.5. The District's revised CEQA Guidelines provides the methodology to determine if a Greenhouse Gas Reduction Strategy meets these requirements.

(A) Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;

(B) Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;

(C) Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area;

(D) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

(E) Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels;

(F) Be adopted in a public process following environmental review.

Local Climate Action Policies, Ordinances and Programs

Air District staff recognizes that many communities in the Bay Area have been proactive in planning for climate change but have not yet developed a stand-alone Greenhouse Gas Reduction Strategy that meets the above criteria. Many cities and counties have adopted climate action policies, ordinances and program that may in fact achieve the goals of AB 32 and a qualified Greenhouse Gas Reduction Strategy. Staff recommends that if a local jurisdiction can demonstrate that its collective set of climate action policies, ordinances and other programs is consistent with AB 32 and State CEQA Guidelines Section 15183.5, includes requirements or feasible measures to reduce GHG emissions and achieves one of the following GHG emission reduction goals,[3] the AB 32 consistency demonstration should be considered equivalent to a qualified Greenhouse Gas Reduction Strategy:

- 1990 GHG emission levels,
- 15 percent below 2008 emission levels, or

Qualified Greenhouse Gas Reduction Strategies that are tied to the AB 32 reduction goals would promote reductions on a plan level without impeding the implementation of GHG-efficient development, and would recognize the initiative of many Bay Area communities who have already developed or are in the process of developing a GHG reduction plan. The details required above for a qualified Greenhouse Gas Reduction Strategy (or similar adopted policies, ordinances and programs) would provide the evidentiary basis for making CEQA findings that development consistent with the plan would result in feasible, measureable, and verifiable GHG reductions consistent with broad state goals

[3] Lead agencies using consistency with their jurisdiction's climate action policies, ordinances and programs as a measure of significance under CEQA Guidelines section 15064(h)(3) and 15183.5(b) should ensure that the policies, ordinances and programs satisfy all of the requirements of that subsection before relying on them in a CEQA analysis.

such that projects approved under qualified Greenhouse Gas Reduction Strategies or equivalent demonstrations would achieve their fair share of GHG emission reductions.

2.3.4.1 GHG THRESHOLDS FOR REGIONAL PLANS

Regional plans include the Regional Transportation Plan prepared by the Metropolitan Transportation Commission (MTC) and air quality plans prepared by the Air District.

The Regional Transportation Plan (RTP), also called a Metropolitan Transportation Plan (MTP) or Long-Range Transportation Plan is the mechanism used in California by both Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Agencies (RTPAs) to conduct long-range (minimum of 20 years) planning in their regions. MTC functions as both the regional transportation planning agency, a state designation, and, for federal purposes, as the region's metropolitan planning organization (MPO). As such, it is responsible for regularly updating the Regional Transportation Plan, a comprehensive blueprint for the development of the Bay Area's transportation system that includes mass transit, highway, airport, seaport, railroad, bicycle and pedestrian facilities. The performance of this system affects such public policy concerns as air quality, environmental resource consumption, social equity, "smart growth," economic development, safety, and security. Transportation planning recognizes the critical links between transportation and other societal goals. The planning process requires developing strategies for operating, managing, maintaining, and financing the area's transportation system in such a way as to advance the area's long-term goals.

The Air District periodically prepares and updates plans to achieve the goal of healthy air. Typically, a plan will analyze emissions inventories (estimates of current and future emissions from industry, motor vehicles, and other sources) and combine that information with air monitoring data (used to assess progress in improving air quality) and computer modeling simulations to test future strategies to reduce emissions in order to achieve air quality standards. Air quality plans usually include measures to reduce air pollutant emissions from industrial facilities, commercial processes, motor vehicles, and other sources. Bay Area air quality plans are prepared with the cooperation of MTC, the Association of Bay Area Governments (ABAG) and the Bay Conservation and Development Commission (BCDC).

The proposed threshold of significance for regional plans is no net increase in emissions including greenhouse gas emissions. This threshold serves to answer the State CEQA Guidelines Appendix G sample question: "Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?"

2.3.5 STATIONARY SOURCE GHG THRESHOLD

Staff's recommended threshold for stationary source GHG emissions is based on estimating the GHG emissions from combustion sources for all permit applications submitted to the Air District in 2005, 2006 and 2007. The analysis is based only on CO_2

emissions from stationary sources, as that would cover the vast majority of the GHG emissions due to stationary combustion sources in the SFBAAB. The estimated CO_2 emissions were calculated for the maximum permitted amount, i.e. emissions that would be emitted if the sources applying for a permit application operate at maximum permitted load and for the total permitted hours. All fuel types are included in the estimates. For boilers burning natural gas, diesel fuel is excluded since it is backup fuel and is used only if natural gas is not available. Emission values are estimated before any offsets (i.e., Emission Reduction Credits) are applied. GHG emissions from mobile sources, electricity use and water delivery associated with the operation of the permitted sources are not included in the estimates.

It is projected that a threshold level of 10,000 metric tons of CO_2e per year would capture approximately 95 percent of all GHG emissions from new permit applications from stationary sources in the SFBAAB. That threshold level was calculated as an average of the combined CO_2 emissions from all stationary source permit applications submitted to the Air District during the three year analysis period.

Staff recommends this 10,000 MT of CO_2/yr as it would address a broad range of combustion sources and thus provide for a greater amount of GHG reductions to be captured and mitigated through the CEQA process. As documented in the Scoping Plan, in order to achieve statewide reduction targets, emissions reductions need to be obtained through a broad range of sources throughout the California economy and this threshold would achieve this purpose. While this threshold would capture 95 percent of the GHG emissions from new permit applications, the threshold would do so by capturing only the large, significant projects. Permit applications with emissions above the 10,000 MT of CO_2/yr threshold account for less than 10 percent of stationary source permit applications which represent 95 percent of GHG emissions from new permits analyzed during the three year analysis period.

This threshold would be considered an interim threshold and Air District staff will reevaluate the threshold as AB 32 Scoping Plan measures such as cap and trade are more fully developed and implemented at the state level.

2.3.6 SUMMARY OF JUSTIFICATION FOR GHG THRESHOLDS

The bright-line numeric threshold of 1,100 MT CO_2e/yr is a numeric emissions level below which a project's contribution to global climate change would be less than "cumulatively considerable." This emissions rate is equivalent to a project size of approximately 60 single-family dwelling units, and approximately 59 percent of all future projects and 92 percent of all emissions from future projects would exceed this level. For projects that are above this bright-line cutoff level, emissions from these projects would still be less than cumulatively significant if the project as a whole would result in an efficiency of 4.6 MT CO_2e per service population or better for mixed-use projects. Projects with emissions above 1,100 MT CO_2e/yr would therefore still be less than significant if they achieved project efficiencies below these levels. If projects as proposed exceed these levels, they would be required to implement mitigation measures to bring

them back below the 1,100 MT CO_2e/yr bright-line cutoff or within the 4.6 MT CO_2e Service Population efficiency threshold. If mitigation did not bring a project back within the threshold requirements, the project would be cumulatively significant and could be approved only with a Statement of Overriding Considerations and a showing that all feasible mitigation measures have been implemented. Projects' GHG emissions would also be less than significant if they comply with a Qualified Greenhouse Gas Reduction Strategy.

As explained in the preceding analyses of these thresholds, the greenhouse gas emissions from land use projects expected between now and 2020 built in compliance with these thresholds would be approximately 26 percent below BAU 2020 conditions and thus would be consistent with achieving an AB 32 equivalent reduction. The 26 percent reduction from BAU 2020 from new projects built in conformance with these proposed thresholds would achieve an aggregate reduction of approximately 1.6 MMT CO_2e/yr, which is the level of emission reductions from new Bay Area land use sources needed to meet the AB 32 goals, per ARB's Scoping Plan as discussed above.

Projects with greenhouse gas emissions in conformance with these proposed thresholds would therefore not be considered significant for purposes of CEQA. Although the emissions from such projects would add an incremental amount to the overall greenhouse gas emissions that cause global climate change impacts, emissions from projects consistent with these thresholds would not be a "cumulatively considerable" contribution under CEQA. Such projects would not be "cumulatively considerable" because they would be helping to solve the cumulative problem as a part of the AB 32 process.

California's response to the problem of global climate change is to reduce greenhouse gas emissions to 1990 levels by 2020 under AB 32 as a near-term measure and ultimately to 80 percent below 1990 levels by 2050 as the long-term solution to stabilizing greenhouse gas concentrations in the atmosphere at a level that will not cause unacceptable climate change impacts. To implement this solution, the Air Resources Board has adopted a Scoping Plan and budgeted emissions reductions that will be needed from all sectors of society in order to reach the interim 2020 target.

The land-use sector in the Bay Area needs to achieve aggregate emission reductions of approximately 1.6 MMT CO_2e/yr from new projects between now and 2020 to achieve this goal, as noted above, and each individual new project will need to achieve its own respective portion of this amount in order for the Bay Area land use sector as a whole to achieve its allocated emissions target. Building all of the new projects expected in the Bay Area between now and 2020 in accordance with the thresholds that District staff are proposing will achieve the overall appropriate share for the land use sector, and building each individual project in accordance with the proposed thresholds will achieve that individual project's respective portion of the emission reductions needed to implement the AB 32 solution. For these reasons, projects built in conformance with the proposed thresholds will be part of the solution to the cumulative problem, and not part of the continuing problem. They will allow the Bay Area's land use sector to achieve the emission reductions necessary from that sector for California to implement its solution to the cumulative problem of global climate change. As such, even though such projects

will add an incremental amount of greenhouse gas emissions, their incremental contribution will be less than "cumulatively considerable" because they are helping to achieve the cumulative solution, not hindering it. Such projects will therefore not be "significant" for purposes of CEQA. (*See* CEQA Guidelines §15064(h)(1).)

The conclusion that land use projects that comply with these proposed thresholds is also supported by CEQA Guidelines Section 15030(a)(3), which provides that a project's contribution to a cumulative problem can be less that cumulatively considerable "if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact." In the case of greenhouse gas emissions associated with land use projects, achieving the amount of emission reductions below BAU that will be required to achieve the AB 32 goals is the project's "fair share" of the overall emission reductions needed under ARB's scoping plan to reach the overall statewide AB 32 emissions levels for 2020. If a project is designed to implement greenhouse gas mitigation measures that achieve a level of reductions consistent with what is required from all new land use projects to achieve the land use sector "budget" – *i.e.*, keeping overall project emissions below 1,100 MT CO_2e/yr or ensuring that project efficiency is better than 4.6 MT CO_2e/service population – then it will be implementing its share of the mitigation measures necessary to alleviate the cumulative impact, as shown in the analyses set forth above.

It is also worth noting that this "fair share" approach is flexible and will allow a project's significance to be determined by how well it is designed from a greenhouse gas efficiency standpoint, and not just by the project's size. For example, a large high-density infill project located in an urban core nearby to public transit and other alternative transportation options, and built using state-of-the-art energy efficiency methods and improvements such as solar panels, as well as all other feasible mitigation measures, would not become significant for greenhouse gas purposes (and thus require a Statement of Overriding Considerations in order to be approved) simply because it happened to be a large project. Projects such as this hypothetical development with low greenhouse gas emissions per service population are what California will need in the future in order to do its part in achieving a solution to the problem of global climate change. The determination of significance under CEQA should therefore take these factors into account, and staff's proposed significance thresholds would achieve this important policy goal. In all, land use sector projects that comply with the GHG thresholds would not be "cumulatively considerable" because they would be helping to solve the cumulative problem as a part of the AB 32 process.

Likewise, new Air District permit applications for stationary sources that comply with the quantitative threshold of 10,000 MT CO_2e/yr would not be "cumulatively considerable" because they also would not hinder the state's ability to solve the cumulative greenhouse gas emissions problem pursuant to AB 32. Unlike the land use sector, the AB 32 Scoping Plan measures, including the cap-and-trade program, provide for necessary emissions reductions from the stationary source sector to achieve AB 32 2020 goals.

While stationary source projects will need to comply with the cap-and-trade program once it is enacted and reduce their emissions accordingly, the program will be phased in over time starting in 2012 and at first will only apply to the very largest sources of GHG emissions. In the mean time, certain stationary source projects, particularly those with large GHG emissions, still will have a cumulatively considerable impact on climate change. The 10,000 MT CO_2e/yr threshold will capture 95 percent of the stationary source sector GHG emissions in the Bay Area. The five percent of emissions that are from stationary source projects below the 10,000 MT CO_2e/yr threshold account for a small portion of the Bay Area's total GHG emissions from stationary sources and these emissions come from very small projects. Such small stationary source projects will not significantly add to the global problem of climate change, and they will not hinder the Bay Area's ability to reach the AB 32 goal in any significant way, even when considered cumulatively. In Air District's staff's judgment, the potential environmental benefits from requiring EIRs and mitigation for these projects would be insignificant. In all, based on staff's expertise, stationary source projects with emissions below 10,000 MT CO_2e/yr will not provide a cumulatively considerable contribution to the cumulative impact of climate change.

3 COMMUNITY RISK AND HAZARD THRESHOLDS

To address community risk from air toxics, the Air District initiated the Community Air Risk Evaluation (CARE) program in 2004 to identify locations with high levels of risk from ambient toxic air contaminants (TAC) co-located with sensitive populations and use the information to help focus mitigation measures. Through the CARE program, the Air District developed an inventory of TAC emissions for 2005 and compiled demographic and heath indicator data. According to the findings of the CARE Program, diesel PM—mostly from on and off-road mobile sources—accounts for over 80 percent of the inhalation cancer risk from TACs in the Bay Area (BAAQMD 2006).

The Air District applied a regional air quality model using the 2005 emission inventory data to estimate excess cancer risk from ambient concentrations of important TAC species, including diesel PM, 1,3-butadiene, benzene, formaldehyde and acetaldehyde. The highest cancer risk levels from ambient TAC in the Bay Area tend to occur in the core urban areas, along major roadways and adjacent to freeways and port activity. Cancer risks in areas along these major freeways are estimated to range from 200 to over 500 excess cases in a million for a lifetime of exposure. Priority communities within the Bay Area – defined as having higher emitting sources, highest air concentrations, and nearby low income and sensitive populations – include the urban core areas of Concord, eastern San Francisco, western Alameda County, Redwood City/East Palo Alto, Richmond/San Pablo, and San Jose.

Fifty percent of BAAQMD's population was estimated to have an ambient background inhalation cancer risk of less than 500 cases in one million, based on emission levels in 2005. Table 8 presents a summary of percentages of the population exposed to varying levels of cancer risk from ambient TACs. Approximately two percent of the SFBAAB

population is exposed to background risk levels of less than 200 excess cases in one million. This is in contrast to the upper percentile ranges where eight percent of the SFBAAB population is exposed to background risk levels of greater than 1,000 excess cases per one million. To identify and reduce risks from TAC, this chapter presents thresholds of significance for both cancer risk and non-cancer health hazards.

Table 8 – Statistical Summary of Estimated Population-Weighted Ambient Cancer Risk in 2005

Percentage of Population (Percent below level of ambient risk)	Ambient Cancer Risk (inhalation cancer cases in one million)
92	1,000
90	900
83	800
77	700
63	600
50	500
32	400
13	300
2	200
<1	100

Source: Data compiled by EDAW 2009.

Many scientific studies have linked fine particulate matter and traffic-related air pollution to respiratory illness (Hiltermann et al. 1997, Schikowski et al 2005, Vineis et al. 2007) and premature mortality (Dockery 1993, Pope et al. 1995, Jerrett et al. 2005). Traffic-related air pollution is a complex mix of chemical compounds (Schauer et al. 2006), often spatially correlated with other stressors, such as noise and poverty (Wheeler and Ben-Shlomo 2005). While such correlations can be difficult to disentangle, strong evidence for adverse health effects of fine particulate matter ($PM_{2.5}$) has been developed for regulatory applications in a study by the U.S, EPA. This study found that a 10 percent increase in $PM_{2.5}$ concentrations increased the non-injury death rate by 10 percent (U.S. EPA 2006).

Public Health Officers for four counties in the San Francisco Bay Area in 2009 provided testimony to the Air District's Advisory Council (February 11, 2009, Advisory Council Meeting on Air Quality and Public Health). Among the recommendations made, was that $PM_{2.5}$, in addition to TACs, be considered in assessments of community-scale impacts of air pollution. In consideration of the scientific studies and recommendations by the Bay Area Health Directors, it is apparent that, in addition to the significance thresholds for local-scale TAC, thresholds of significance are required for near-source, local-scale concentrations of $PM_{2.5}$.

3.2 PROPOSED THRESHOLDS OF SIGNIFICANCE

Proposed thresholds of significance and Board-requested options are presented in this section:

- The **Staff Proposal** includes thresholds for cancer risk, non-cancer health hazards, and fine particulate matter.
- **Tiered Thresholds Option** includes tiered thresholds for new sources in impacted communities. Thresholds for receptors and cumulative impacts are the same as the Staff Proposal.

Proposal/Option	Construction-Related	Operational-Related
Project-Level – Individual Project		
Risks and Hazards – New Source (All Areas) (Individual Project) **Staff Proposal**	Same as Operational Thresholds*	Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase: > 0.3 µg/m^3 annual average Zone of Influence: 1,000-foot radius from fence line of source or receptor
Risks and Hazards – New Receptor (All Areas) (Individual Project) **Staff Proposal**	Same as Operational Thresholds*	Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase: > 0.3 µg/m^3 annual average Zone of Influence: 1,000-foot radius from fence line of source or receptor

Proposal/Option	Construction-Related	Operational-Related
Risks and Hazards (Individual Project) **Tiered Thresholds Option**	Same as Operational Thresholds*	**Impacted Communities:** Siting a New Source Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >5.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase: > 0.2 µg/m^3 annual average Zone of Influence: 1,000-foot radius from fence line of source or receptor
	Same as Operational Thresholds*	**Impacted Communities:** Siting a New Receptor **All Other Areas:** Siting a New Source or Receptor Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase: > 0.3 µg/m^3 annual average Zone of Influence: 1,000-foot radius from fence line of source or receptor
Accidental Release of Acutely Hazardous Air Pollutants	None	Storage or use of acutely hazardous materials locating near receptors or receptors locating near stored or used acutely hazardous materials considered significant
Project-Level – Cumulative		
Risks and Hazards – New Source (All Areas) (Cumulative Thresholds)	Same as Operational Thresholds*	Compliance with Qualified Community Risk Reduction Plan OR Cancer: > 100 in a million (from all local sources) Non-cancer: > 10.0 Hazard Index (from all local sources) (Chronic) $PM_{2.5}$: > 0.8 µg/m^3 annual average (from all local sources) Zone of Influence: 1,000-foot radius from fence line of source or receptor

Proposal/Option	Construction-Related	Operational-Related
Risks and Hazards – New Receptor (All Areas) (Cumulative Thresholds)	Same as Operational Thresholds*	Compliance with Qualified Community Risk Reduction Plan OR Cancer: > 100 in a million (from all local sources) Non-cancer: > 10.0 Hazard Index (from all local sources) (Chronic) $PM_{2.5}$: > 0.8 $\mu g/m^3$ annual average (from all local sources) Zone of Influence: 1,000-foot radius from fence line of source or receptor
Plan-Level		
Risks and Hazards	None	1. Overlay zones around existing and planned sources of TACs (including adopted Risk Reduction Plan areas). 2. Overlay zones of at least 500 feet (or Air District-approved modeled distance) from all freeways and high volume roadways.
Accidental Release of Acutely Hazardous Air Pollutants	None	None
Regional Plans (Transportation and Air Quality Plans)		
Risks and Hazards	None	No net increase in toxic air contaminants

* Note: The Air District recommends that for construction projects that are less than one year duration, Lead Agencies should annualize impacts over the scope of actual days that peak impacts are to occur, rather than the full year.

3.3 JUSTIFICATION AND SUBSTANTIAL EVIDENCE SUPPORTING THRESHOLDS

The goal of the proposed thresholds is to ensure that no source creates, or receptor endures, a significant adverse impact from any individual project, and that the total of all nearby directly emitted risk and hazard emissions is also not significantly adverse. The thresholds for local risks and hazards from TAC and $PM_{2.5}$ are intended to apply to all sources of emissions, including both permitted stationary sources and on- and off-road mobile sources, such as sources related to construction, busy roadways, or freight movement.

Thresholds for an individual new source are designed to ensure that the source does not contribute to a cumulatively significant impact. Cumulative thresholds for sources recognize that some areas are already near or at levels of significant impact. If within such an area there are receptors, or it can reasonably be foreseen that there will be

receptors, then a cumulative significance threshold sets a level beyond which any additional risk is significant.

For new receptors – sensitive populations or the general public – thresholds of significance are designed to identify levels of contributed risk or hazards from existing local sources that pose a significant risk to the receptors. Single-source thresholds for receptors are provided to recognize that within the area defined there can be variations in risk levels that may be significant. Single-source thresholds assist in the identification of significant risks, hazards, or concentrations in a subarea, within the area defined by the selected radius. Cumulative thresholds for receptors are designed to account for the effects of all sources within the defined area.

Cumulative thresholds, for both sources and receptors, must consider the size of the source area, defined by a radius from the proposed project. To determine cumulative impacts from a prescribed zone of influence requires the use of modeling. The larger the radius, the greater the number of sources considered that may contribute to the modeled risk and, until the radius approaches a regional length scale, the greater the expected modeled risk increment. If the area of impact considered were grown to the scale of a city, the modeled risk increment would approach the risk level present in the ambient air.

3.3.1 SCIENTIFIC AND REGULATORY JUSTIFICATION

Regulatory Framework for TACs

Prior to 1990, the Clean Air Act required EPA to list air toxics it deemed hazardous and to establish control standards which would restrict concentrations of hazardous air pollutants (HAP) to a level that would prevent any adverse effects "with an ample margin of safety." By 1990, EPA had regulated only seven such pollutants and it was widely acknowledged by that time that the original Clean Air Act had failed to address toxic air emissions in any meaningful way. As a result, Congress changed the focus of regulation in 1990 from a risk-based approach to technology-based standards. Title III, Section 112(b) of the 1990 Clean Air Act Amendment established this new regulatory approach. Under this framework, prescribed pollution control technologies based upon maximum achievable control technology (MACT) were installed without the a priori estimation of the health or environmental risk associated with each individual source. The law listed 188 HAPs that would be subject to the MACT standards. EPA issued 53 standards for 89 different types of major industrial sources of air toxics and eight categories of smaller sources such as dry cleaners. These requirements took effect between 1996 and 2002. Under the federal Title V Air Operating Permit Program, a facility with the potential to emit 10 tons of any toxic air pollutant, or 25 tons per year of any combination of toxic air pollutants, is defined as a major source HAPs. Title V permits include requirements for these facilities to limit toxic air pollutant emissions.

Several state and local agencies adopted programs to address gaps in EPA's program prior to the overhaul of the national program in 1990. California's program to reduce exposure to air toxics was established in 1983 by the Toxic Air Contaminant Identification and Control Act (AB 1807, Tanner 1983) and the Air Toxics "Hot Spots"

Information and Assessment Act (AB 2588, Connelly 1987). Under AB 1807, ARB and the Office of Environmental Health Hazard Assessment (OEHHA) determines if a substance should be formally identified as a toxic air contaminant (TAC) in California. OEHHA also establishes associated risk factors and safe concentrations of exposure.

AB 1807 was amended in 1993 by AB 2728, which required ARB to identify the 189 federal hazardous air pollutants as TACs. AB 2588 (Connelly, 1987) supplements the AB 1807 program, by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. In September 1992, the "Hot Spots" Act was amended by Senate Bill 1731 which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

Cancer Risk

Cancer risk from TACs is typically expressed in numbers of excess cancer cases per million persons exposed over a defined period of exposure, for example, over an assumed 70 year lifetime. The Air District is not aware of any agency that has established an acceptable level of cancer risk for TACs. However, a range of what constitutes a significant increment of cancer risk from any compound has been established by the U.S. EPA. EPA's guidance for conducting air toxics analyses and making risk management decisions at the facility- and community-scale level considers a range of acceptable cancer risks from one in a million to one in ten thousand (100 in a million). The guidance considers an acceptable range of cancer risk increments to be from one in a million to one in ten thousand. In protecting public health with an ample margin of safety, EPA strives to provide maximum feasible protection against risks to health from HAPs by limiting additional risk to a level no higher than the one in ten thousand estimated risk that a person living near a source would be exposed to at the maximum pollutant concentrations for 70 years. This goal is described in the preamble to the benzene National Emissions Standards for Hazardous Air Pollutants (NESHAP) rulemaking (54 Federal Register 38044, September 14, 1989) and is incorporated by Congress for EPA's residual risk program under Clean Air Act section 112(f).

Regulation 2, Rule 5 of the Air District specifies permit requirements for new and modified stationary sources of TAC. The Project Risk Requirement (2-5-302.1) states that the Air Pollution Control Officer shall deny an Authority to Construct or Permit to Operate for any new or modified source of TACs if the project cancer risk exceeds 10.0 in one million.

Hazard Index for Non-cancer Health Effects

Non-cancer health hazards for chronic and acute diseases are expressed in terms of a hazard index (HI), a ratio of TAC concentration to a reference exposure level (REL), below which no adverse health effects are expected, even for sensitive individuals. As such, OEHHA has defined acceptable concentration levels, and also significant concentration increments, for compounds that pose non-cancer health hazards. If the HI for a compound is less than one, non-cancer chronic and acute health impacts have been determined to be less than significant.

State and Federal Ambient Air Quality Standards for $PM_{2.5}$

The Children's Environmental Health Protection Act (Senate Bill 25), passed by the California state legislature in 1999, requires ARB, in consultation with OEHHA, to "review all existing health-based ambient air quality standards to determine whether, based on public health, scientific literature and exposure pattern data, these standards adequately protect the public, including infants and children, with an adequate margin of safety." As a result of the review requirement, in 2002 ARB adopted an annual average California Ambient Air Quality Standard (CAAQS) for $PM_{2.5}$ of 12 ug/m^3 that is not to be exceeded (California Code of Regulations, Title 17 § 70200, Table of Standards.) The National Ambient Air Quality Standard (NAAQS) established an annual standard for $PM_{2.5}$ (15 ug/m^3) that is less stringent that the CAAQS, but also set a 24-hour average standard (35 ug/m^3), which is not included in the CAAQS (Code of Federal Regulations, Title 40, Part 50.7).

Significant Impact Levels for $PM_{2.5}$

EPA recently proposed and documented alternative options for $PM_{2.5}$ Significant Impact Levels (SILs) (Federal Register 40 CFR Parts 51 and 52, September 21, 2007). The EPA is proposing to facilitate implementation of a $PM_{2.5}$ Prevention of Significant Deterioration (PSD) program in areas attaining the $PM_{2.5}$ NAAQS by developing $PM_{2.5}$ increments, or SILs. These "increments" are maximum increases in ambient $PM_{2.5}$ concentrations ($PM_{2.5}$ increments) allowed in an area above the baseline concentration.

The SIL is a threshold that would be applied to individual facilities that apply for a permit to emit a regulated pollutant in an area that meets the NAAQS. The State and EPA must determine if emissions from that facility will cause the air quality to worsen. If an individual facility projects an increase in emissions that result in ambient impacts greater than the established SIL, the permit applicant would be required to perform additional analyses to determine if those impacts will be more than the amount of the PSD increment. This analysis would combine the impact of the proposed facility when added to all other sources in the area.

The EPA is proposing such values for $PM_{2.5}$ that will be used as screening tools by a major source subject to PSD to determine the subsequent level of analysis and data gathering required for a PSD permit application for emissions of $PM_{2.5}$. The SIL is one element of the EPA program to prevent deterioration in regional air quality and is utilized in the new source review (NSR) process. New source review is required under Section 165 of the Clean Air Act, whereby a permit applicant must demonstrate that emissions from the proposed construction and operation of a facility "will not cause, or contribute to, air pollution in excess of any maximum allowable increase or maximum allowable concentration for any pollutant." The purpose of the SIL is to provide a screening level that triggers further analysis in the permit application process.

For the purpose of NSR, SILs are set for three types of areas: Class I areas where especially clean air is most desirable, including national parks and wilderness areas; Class II areas where there is not expected to be substantial industrial growth; and Class III areas where the highest relative level of industrial development is expected. In Class II

and Class III areas, a $PM_{2.5}$ concentration of 0.3, 0.8, and 1 $\mu g/m^3$ has been proposed as a SIL. To arrive at the SIL $PM_{2.5}$ option of 0.8 $\mu g/m^3$, EPA scaled an established PM_{10} SILs of 1.0 $\mu g/m^3$ by the ratio of emissions of $PM_{2.5}$ to PM_{10} using the EPA's 1999 National Emissions Inventory. To arrive at the SIL option of 0.3 $\mu g/m^3$, EPA scaled the PM_{10} SIL of 1.0 $\mu g/m^3$ by the ratio of the current Federal ambient air quality standards for $PM_{2.5}$ and PM_{10} (15/50). These options represent what EPA currently considers as a range of appropriate SIL values.

EPA interprets the SIL to be the level of $PM_{2.5}$ increment that represents a "significant contribution" to regional non-attainment. While SIL options were not designed to be thresholds for assessing community risk and hazards, they are being considered to protect public health at a regional level by helping an area maintain the NAAQS. Furthermore, since it is the goal of the Air District to achieve and maintain the NAAQS and CAAQS at both regional and local scales, the SILs may be reasonably be considered as thresholds of significance under CEQA for local-scale increments of $PM_{2.5}$.

Roadway Proximity Health Studies

Several medical research studies have linked near-road pollution exposure to a variety of adverse health outcomes impacting children and adults. Kleinman et al. (2007) studied the potential of roadway particles to aggravate allergic and immune responses in mice. Using mice that were not inherently susceptible, the researchers placed these mice at various distances downwind of State Road 60 and Interstate 5 freeways in Los Angeles to test the effect these roadway particles have on their immune system. They found that within five meters of the roadway, there was a significant allergic response and elevated production of specific antibodies. At 150 meters (492 feet) and 500 meters (1,640 feet) downwind of the roadway, these effects were not statistically significant.

Another significant study (Ven Hee et al. 2009) conducted a survey involving 3,827 participants that aimed to determine the effect of residential traffic exposure on two preclinical indicators of heart failure; left ventricular mass index (LVMI), measured by the cardiac magnetic resonance imaging (MRI), and ejection fraction. The studies classified participants based on the distance between their residence and the nearest interstate highway, state or local highway, or major arterial road. Four distance groups were defined: less than 50 meters (165 feet), 50-100 meters, 101-150 meters, and greater than 150 meters. After adjusting for demographics, behavioral, and clinical covariates, the study found that living within 50 meters of a major roadway was associated with a 1.4 g/m^2 higher LVMI than living more than 150 meters from one. This suggests an association between traffic-related air pollution and increased prevalence of a preclinical predictor of heart failure among people living near roadways.

To quantify the roadway concentrations of $PM_{2.5}$ that contributed to the health impacts reported by Kleinman et al (2007), the Air District modeled the emissions and associated particulate matter concentrations for the roadways studied. To perform the modeling, emissions were estimated for Los Angeles using the EMFAC model and annual average vehicle traffic data taken from Caltrans was used in the roadway model (CAL3QHCR) to estimate the downwind $PM_{2.5}$ concentrations at 50 meters and 150 meters. Additionally,

emissions were assumed to occur from 10:00 a.m. to 2:00 p.m. corresponding to the time in which the mice were exposed during the study. The results of the modeling indicate that at 150 meters, where no significant health effects were found, the downwind concentration of $PM_{2.5}$ was 0.78 $\mu g/m^3$, consistent with the proposed EPA SIL option of 0.8 $\mu g/m^3$.

Concentration-Response Function for $PM_{2.5}$

The U.S. EPA reevaluated the relative risk of premature death associated with $PM_{2.5}$ exposure and developed a new relative risk factor (U.S. EPA 2006). This expert elicitation was prepared in support of the characterization of uncertainty in EPA's benefits analyses associated with reductions in exposure to particulate matter pollution. As recommended by the National Academy of Sciences, EPA used expert judgment to better describe the uncertainties inherent in their benefits analysis. . Twelve experts participated in the study and provided not just a point estimate of the health effects of PM2.5, but a probability distribution representing the range where they expected the true effect would be. Among the experts who directly incorporated their views on the likelihood of a causal relationship into their distributions, the central (median) estimates of the percent change in all-cause mortality in the adult U.S. population that would result from a permanent 1 µg/m3 drop in annual average PM2.5 concentrations ranged from 0.7 to 1.6 percent. The median of their estimates was 1.0 (% increase per 1 µg/m3 increase in PM2.5), with a 90% confidence interval of 0.3 to 2.0 (medians of their 5th and 95th percentiles, respectively) (BAAQMD 2010).Subsequent to the EPA elicitation, Schwartz et al. (2008) examined the linearity of the concentration-response function of $PM_{2.5}$-mortality and showed that the response function was linear, with health effects clearly continuing below the current U.S. standard of 15 $\mu g/m^3$, and that the effects of changes in exposure on mortality were seen within two years.

San Francisco Ordinance on Roadway Proximity Health Effects

In 2008, the City and County of San Francisco adopted an ordinance (San Francisco Health Code, Article 38 - Air Quality Assessment and Ventilation Requirement for Urban Infill Residential Development, Ord. 281-08, File No. 080934, December 5, 2008) requiring that public agencies in San Francisco take regulatory action to prevent future air quality health impacts from new sensitive uses proposed near busy roadways (SFDPH 2008). The regulation requires that developers screen sensitive use projects for proximity to traffic and calculate the concentration of $PM_{2.5}$ from traffic sources where traffic volumes suggest a potential hazard. If modeled levels of traffic-attributable $PM_{2.5}$ at a project site exceed an action level (currently set at 0.2 $\mu g/m^3$) developers would be required to incorporate ventilation systems to remove 80 percent of $PM_{2.5}$ from outdoor air. The regulation does not place any requirements on proposed sensitive uses if modeled air pollutant levels fall below the action threshold. This ordinance only considers impacts from on-road motor vehicles, not impacts related to construction equipment or stationary sources.

A report with supporting documentation for the ordinance (SFPHD 2008) provided a threshold to trigger action or mitigation of 0.2 $\mu g/m^3$ of $PM_{2.5}$ annual average exposure from roadway vehicles within a 150 meter (492 feet) maximum radius of a sensitive

receptor. The report applied the concentration-response function from Jerrett et al. (2005) that attributed 14 percent increase in mortality to a 10 $\mu g/m^3$ increase in $PM_{2.5}$ to estimate an increase in non-injury mortality in San Francisco of about 21 excess deaths per million population per year from a 0.2 $\mu g/m^3$ increment of annual average $PM_{2.5}$.

Distance for Significant Impact

The distance used for the radius around the project boundary should reflect the zone or area over which sources may have a significant influence. For cumulative thresholds, for both sources and receptors, this distance also determines the size of the source area, defined. To determine cumulative impacts from a prescribed zone of influence requires the use of modeling. The larger the radius, the greater the number of sources considered that may contribute to the risk and the greater the expected modeled risk increment. If the area of impact considered were grown to approach the scale of a city, the modeled risk increment would approach the risk level present in the ambient air.

A summary of research findings in ARB's Land Use Compatibility Handbook (ARB 2005) indicates that traffic-related pollutants were higher than regional levels within approximately 1,000 feet downwind and that differences in health-related effects (such as asthma, bronchitis, reduced lung function, and increased medical visits) could be attributed in part to the proximity to heavy vehicle and truck traffic within 300 to 1,000 feet of receptors. In the same summary report, ARB recommended avoiding siting sensitive land uses within 1,000 feet of a distribution center and major rail yard, which supports the use of a 1,000 feet evaluation distance in case such sources may be relevant to a particular project setting. A 1,000 foot zone of influence is also supported by Health & Safety Code §42301.6 (Notice for Possible Source Near School).

Some studies have shown that the concentrations of particulate matter tend to be reduced substantially or can even be indistinguishable from upwind background concentrations at a distance 1,000 feet downwind from sources such as freeways or large distribution centers. Zhu et al. (2002) conducted a systematic ultrafine particle study near Interstate 710, one of the busiest freeways in the Los Angeles Basin. Particle number concentration and size distribution were measured as a function of distances upwind and downwind of the I-710 freeway. Approximately 25 percent of the 12,180 vehicles per hour are heavy duty diesel trucks based on video counts conducted as part of the research. Measurements were taken at 13 feet, 23 feet, 55 feet, 252 feet, 449 feet, and 941 feet downwind and 613 feet upwind from the edge of the freeway. The particle number and supporting measurements of carbon monoxide and black carbon decreased exponentially and all constituents simultaneously tracked with each other as one moves away from the freeway. Ultrafine particle size distribution changed markedly and its number concentrations dropped dramatically with increasing distance. The study found that ultrafine particle concentrations measured 941 feet downwind of I-710 were indistinguishable from the upwind background concentration.

Impacted Communities

Starting in 2006, the Air District's CARE program developed gridded TAC emissions inventories and compiled demographic information that were used to identify

communities that were particularly impacted by toxic air pollution for the purposes of distributing grant and incentive funding. In 2009, the District completed regional modeling of TAC on a one kilometer by one kilometer grid system. This modeling was used to estimate cancer risk and TAC population exposures for the entire District. The information derived from the modeling was then used to update and refine the identification of impacted communities. One kilometer modeling yielded estimates of annual concentrations of five key compounds – diesel particulate matter, benzene, 1,3-butadiene, formaldehyde, and acetaldehyde – for year 2005. These concentrations were multiplied by their respective unit cancer risk factors, as established by OEHHA, to estimate the expected excess cancer risk per million people from these compounds.

Sensitive populations from the 2000 U.S. Census database were identified as youth (under 18) and seniors (over 64) and mapped to the same one kilometer grid used for the toxics modeling. Excess cancers from TAC exposure were determined by multiplying these sensitive populations by the model-estimated excess risk to establish a data set representing sensitive populations with high TAC exposures. TAC emissions (year 2005) were mapped to the one kilometer grid and also scaled by their unit cancer risk factor to provide a data set representing source regions for TAC emissions. Block-group level household income data from the U.S. Census database were used to identify block groups with family incomes where more than 40 percent of the population was below 185 percent of the federal poverty level (FPL). Poverty-level polygons that intersect high (top 50 percent) exposure cells and are within one grid cell of a high emissions cell (top 25 percent) were used to identify impacted areas. Boundaries were constructed along major roads or highways that encompass nearby high emission cells and low income areas. This method identified the following six areas as priority communities: (1) portions of the City of Concord; (2) Western Contra Costa County (including portions of the Cities of Richmond and San Pablo); (3) Western Alameda County along the Interstate-880 corridor (including portions of the Cities of Berkeley, Oakland, San Leandro, San Lorenzo, Hayward; (4) Portions of the City of San Jose. (5) Eastern San Mateo County (including portions of the Cities of Redwood City and East Palo Alto); and (6) Eastern portions of the City of San Francisco.

3.3.2 CONSTRUCTION, LAND USE AND STATIONARY SOURCE RISK AND HAZARD THRESHOLDS

The proposed options for local risk and hazards thresholds of significance are based on U.S. EPA guidance for conducting air toxics analyses and making risk management decisions at the facility and community-scale level. The thresholds consider reviews of recent health effects studies that link increased concentrations of fine particulate matter to increased mortality. The proposed thresholds would apply to both siting new sources and siting new receptors.

For new sources of TACs, thresholds of significance for a single source are designed to ensure that emissions do not raise the risk of cancer or non-cancer health impacts to cumulatively significant levels. For new sources of $PM_{2.5}$, thresholds are designed to ensure that $PM_{2.5}$ concentrations are maintained below state and federal standards in all

areas where sensitive receptors or members of the general public live or may foreseeably live, even if at the local- or community-scale where sources of TACs and PM may be nearby.

Project Radius for Assessing Impacts

For a project proposing a new source or receptor it is recommended to assess impacts within 1,000 feet, taking into account both its individual and nearby cumulative sources (i.e. proposed project plus existing and foreseeable future projects). Cumulative sources are the combined total risk values of each individual source within the 1,000-foot evaluation zone. A lead agency should enlarge the 1,000-foot radius on a case-by-case basis if an unusually large source or sources of risk or hazard emissions that may affect a proposed project is beyond the recommended radius.

The 1,000 foot radius is consistent with findings in ARB's Land Use Compatibility Handbook (ARB 2005), the Health & Safety Code §42301.6 (Notice for Possible Source Near School), and studies such as that of Zhu et al (2002) which found that concentrations of particulate matter tend to be reduced substantially at a distance 1,000 feet downwind from sources such as freeways or large distribution centers.

Qualified Community Risk Reduction Plan

Within the framework of these thresholds, proposed projects would be considered to be less than significant if they are consistent with a qualified Community Risk Reduction Plan (CRRP) adopted by the local jurisdiction with enforceable measures to reduce the community risk.

Project proposed in areas where a CRRP has been adopted that are not consistent with the CRRP would be considered to have a significant impact.

Projects proposed in areas where a CRRP has not been adopted and that have the potential to expose sensitive receptors or the general public to emissions-related risk in excess of the thresholds below from any source would be considered to have a significant air quality impact.

The conclusion that land use projects that comply with qualified Community Risk Reduction Plans are less than significant is supported by CEQA Guidelines Sections 15030(a)(3) and 15064(h)(3), which provides that a project's contribution to a cumulative problem can be less that cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

Increased Cancer Risk to Maximally Exposed Individual (MEI)

Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of carcinogenic TACs from any source result in an increased cancer risk greater than 10.0 in one million, assuming a 70 year lifetime exposure. Under Board Option 1, within Impacted Communities as defined

through the CARE program, the significance level for cancer would be reduced to 5.0 in one million for new sources.

The 10.0 in one million cancer risk threshold for a single source is supported by EPA's guidance for conducting air toxics analyses and making risk management decisions at the facility and community-scale level. It is also the level set by the Project Risk Requirement in the Air District's Regulation 2, Rule 5 new and modified stationary sources of TAC, which states that the Air Pollution Control Officer shall deny an Authority to Construct or Permit to Operate for any new or modified source of TACs if the project risk exceeds a cancer risk of 10.0 in one million.

This threshold for an individual new source is designed to ensure that the source does not contribute a cumulatively significant impact. The justification for the Tiered Thresholds Option threshold of 5.0 in one million for new sources in an impacted community is that in these areas the cancer risk burden is higher than in other parts of the Bay Area; the threshold at which an individual source becomes significant is lower for an area that is already at or near unhealthy levels. However, even without a tiered approach, the recommended thresholds already address the burden of impacted communities via the cumulative thresholds: specifically, if an area has many existing TAC sources near receptors, then the cumulative threshold will be reached sooner than it would in another area with fewer TAC sources.

The single-source threshold for receptors is provided to address the possibility that within the area defined by the 1,000 foot radius there can be variations in risk levels that may be significant, below the corresponding cumulative threshold. Single-source thresholds assist in the identification of significant risks, hazards, or concentrations in a subarea, within the 1,000 foot radius.

Increased Non-Cancer Risk to MEI

Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of non-carcinogenic TACs result in an increased chronic or acute Hazard Index (HI) from any source greater than 1.0. This threshold is unchanged under Tiered Thresholds Option.

A HI less than 1.0 represents a TAC concentration, as determined by OEHHA that is at a health protective level. While some TACs pose non-carcinogenic, chronic and acute health hazards, if the TAC concentrations result in a HI less than one, those concentrations have been determined to be less than significant.

Increased Ambient Concentration of $PM_{2.5}$

Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of $PM_{2.5}$ from any source would result in an average annual increase greater than 0.3 $\mu g/m^3$. Under Tiered Thresholds Option, within Impacted Communities as defined through the CARE program, the significance level for a $PM_{2.5}$ increment is 0.2 $\mu g/m^3$.

If one applies the concentration-response of the median of the EPA consensus review (EPA 2005, BAAQMD 2010) and attributes a 1 percent increase in mortality to a 1 $\mu g/m^3$ increase in $PM_{2.5}$, one finds an increase in non-injury mortality in the Bay Area of about 20 excess deaths per million per year from a 0.3 $\mu g/m^3$ increment of $PM_{2.5}$. This is consistent with the impacts reported and considered significant by SFDPH (2008) using an earlier study (Jerrett et al. 2005) to estimate the increase in mortality from a 0.2 $\mu g/m^3$ $PM_{2.5}$ increment.

The SFDPH recommended a lower threshold of significance for multiple sources but only considered roadway emissions within a 492 foot radius. This recommendation applies to a single source but considers all types of emissions within 1,000 feet. On balance, the Air District estimates that the SFDPH threshold and this proposed one, in combination with the cumulative threshold for $PM_{2.5}$, will afford similar levels of health protection.

The proposed $PM_{2.5}$ threshold represents the lower range of an EPA proposed Significant Impact Level (SIL). EPA interprets the SIL to be the level of ambient impact that is considered to represent a "significant contribution" to regional non-attainment. While this threshold was not designed to be a threshold for assessing community risk and hazards, it was designed to protect public health at a regional level by helping an area maintain the NAAQS. Since achieving and maintaining state and federal AAQS is a reasonable goal at the local scale, the SIL provides a useful reference for comparison.

This threshold for an individual new source is designed to ensure that the source does not contribute a cumulatively significant impact. The justification for the Tiered Thresholds Option threshold of 0.2 $\mu g/m^3$ for new sources in an impacted community is that these areas have higher levels of diesel particulate matter than do other parts of the Bay Area; the threshold at which an individual source becomes significant is lower for an area that is already at or near unhealthy levels. However, even without a tiered approach, the recommended thresholds already address the burden of impacted communities via the cumulative thresholds: specifically, if an area has many existing $PM_{2.5}$ sources near receptors, then the cumulative threshold will be reached sooner than it would in another area with fewer $PM_{2.5}$ sources.

The single-source threshold for receptors is provided to address the possibility that within the area defined by the 1,000 foot radius there can be variations in risk levels that may be significant, below the corresponding cumulative threshold. Single-source thresholds assist in the identification of significant risks, hazards, or concentrations in a subarea, within the 1,000 foot radius.

3.3.2.1 Accidental Release of Acutely Hazardous Air Emissions

The BAAQMD currently recommends, at a minimum, that the lead agency, in consultation with the administering agency of the Risk Management Prevention Program (RMPP), find that any project resulting in receptors being within the Emergency Response Planning Guidelines (ERPG) exposure level 2 for a facility has a significant air quality impact. ERPG exposure level 2 is defined as "the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for

up to one hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action."

Staff proposes continuing with the current threshold for the accidental release of hazardous air pollutants. Staff recommends that agencies consult with the California Emergency Management Agency for the most recent guidelines and regulations for the storage of hazardous materials. Staff proposes that projects using or storing acutely hazardous materials locating near existing receptors, and projects resulting in receptors locating near facilities using or storing acutely hazardous materials be considered significant.

The current Accidental Release/Hazardous Air Emissions threshold of significance could affect all projects, regardless of size, and require mitigation for Accidental Release/Hazardous Air Emissions impacts.

3.3.3 CUMULATIVE RISK AND HAZARD THRESHOLDS

Qualified Community Risk Reduction Plan

Proposed projects would be considered to be less than significant if they are consistent with a qualified Community Risk Reduction Plan (CRRP) adopted by the local jurisdiction with enforceable measures to reduce the community risk.

Project proposed in areas where a CRRP has been adopted that are not consistent with the CRRP would be considered to have a significant impact.

Projects proposed in areas where a CRRP has not been adopted and that have the potential to expose sensitive receptors or the general public to emissions-related risk in excess of the following thresholds from the aggregate of cumulative sources would be considered to have a significant air quality impact.

The conclusion that land use projects that comply with qualified Community Risk Reduction Plans are less than significant is supported by CEQA Guidelines Sections 15030(a)(3) and 15064(h)(3), which provides that a project's contribution to a cumulative problem can be less that cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

Increased Cancer Risk to Maximally Exposed Individual (MEI)

Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of carcinogenic TACs from any source result in an increased cancer risk greater than 100.0 in one million.

The significance threshold of 100 in a million increased excess cancer risk would be applied to the cumulative emissions. The 100 in a million threshold is based on EPA guidance for conducting air toxics analyses and making risk management decisions at the facility and community-scale level. In protecting public health with an ample margin of

safety, EPA strives to provide maximum feasible protection against risks to health from hazardous air pollutants (HAPs) by limiting risk to a level no higher than the one in ten thousand (100 in a million) estimated risk that a person living near a source would be exposed to at the maximum pollutant concentrations for 70 years (NESHAP 54 Federal Register 38044, September 14, 1989; CAA section 112(f)). One hundred in a million excess cancer cases is also consistent with the ambient cancer risk in the most pristine portions of the Bay Area based on the District's recent regional modeling analysis.

Increased Non-Cancer Risk to MEI

Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of non-carcinogenic TACs result in an increased chronic Hazard Index from any source greater than 10.0.

The Air District has developed an Air Toxics Hot Spots (ATHS) program that provides guidance for implementing the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, Connelly, 1987: chaptered in the California Health and Safety Code § 44300, et. al.). The ATHS provides that if the health risks resulting from the facility's emissions exceed significance levels established by the air district, the facility is required to conduct an airborne toxic risk reduction audit and develop a plan to implement measures that will reduce emissions from the facility to a level below the significance level. The Air District has established a non-cancer Hazard Index of ten (10.0) as ATHS mandatory risk reduction levels. The proposed cumulative chronic non-cancer Hazard Index threshold is consistent with the Air District's ATHS program.

Increased Ambient Concentration of $PM_{2.5}$

Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of $PM_{2.5}$ from any source would result in an average annual increase greater than 0.8 $\mu g/m^3$.

If one applies the concentration-response function from the U.S, EPA assessment (U.S. EPA 2006) and attributes a 10 percent increase in mortality to a 10 $\mu g/m^3$ increase in $PM_{2.5}$, one finds an increase in non-injury mortality in the Bay Area of about 50 excess deaths per year from a 0.8 $\mu g/m^3$ increment of $PM_{2.5}$. This is greater the impacts reported and considered significant by SFDPH (2008) using an earlier study (Jerrett et al. 2005) to estimate the increase in mortality from a 0.2 $\mu g/m^3$ $PM_{2.5}$ increment (SFDPH reported 21 excess deaths per year). However, SFDPH only considered roadway emissions within a 492 foot radius. This proposed threshold applies to all types of emissions within 1,000 feet. In modeling applications for proposed projects, a larger radius results in a greater number of sources considered and higher modeled concentrations. On balance, the Air District estimates that the SFDPH threshold and this proposed one, in combination with the individual source threshold for $PM_{2.5}$, will afford similar levels of health protection.

The proposed cumulative $PM_{2.5}$ threshold represents the middle range of an EPA proposed Significant Impact Level (SIL). EPA interprets the SIL to be the level of ambient impact that is considered to represent a "significant contribution" to regional non-attainment. While this threshold was not designed to be a threshold for assessing

community risk and hazards, it was designed to protect public health at a regional level by helping an area maintain the NAAQS. Since achieving and maintaining state and federal AAQS is a reasonable goal at the local scale, the SIL provides a useful reference for comparison. Furthermore, the 0.8 $\mu g/m^3$ threshold is consistent with studies (Kleinman et al 2007) that examined the potential health impacts of roadway particles.

3.3.4 PLAN-LEVEL RISK AND HAZARD THRESHOLDS

Staff proposes plan-level thresholds that will encourage a programmatic approach to addressing the overall adverse conditions resulting from risks and hazards that many Bay Area communities experience. By designating overlay zones in land use plans, local land use jurisdictions can take preemptive action before project-level review to reduce the potential for significant exposures to risk and hazard emissions. While this will require more up-front work at the general plan level, in the long-run this approach is a more feasible approach consistent with Air District and CARB guidance about siting sources and sensitive receptors that is more effective than project by project consideration of effects that often has more limited mitigation opportunities. This approach would also promote more robust cumulative consideration of effects of both existing and future development for the plan-level CEQA analysis as well as subsequent project-level analysis.

For local plans to have a less-than-significant impact with respect to potential risks and hazards, overlay zones would have to be established around existing and proposed land uses that would emit these air pollutants. Overlay zones to avoid risk impacts should be reflected in local plan policies, land use map(s), and implementing ordinances (e.g., zoning ordinance). The overlay zones around existing and future risk sources would be delineated using the quantitative approaches described above for project-level review and the resultant risk buffers would be included in the General Plan (or the EIR for the General Plan) to assist in site planning. BAAQMD will provide guidance as to the methods used to establish the TAC buffers and what standards to be applied for acceptable exposure level in the updated CEQA Guidelines document. Special overlay zones of at least 500 feet (or an appropriate distance determined by modeling and approved by the Air District) on each side of all freeways and high volume roadways would be included in this proposed threshold.

The threshold of significance for plan impacts could affect all plan adoptions and amendments and require mitigation for a plan's air quality impacts. Where sensitive receptors would be exposed above the acceptable exposure level, the plan impacts would be considered significant and mitigation would be required to be imposed either at the plan level (through policy) or at the project level (through project level requirements).

3.3.5 COMMUNITY RISK REDUCTION PLANS

The goal of a Community Risk Reduction Plan would be to bring TAC and $PM_{2.5}$ concentrations for the entire community covered by the Plan down to acceptable levels as identified by the local jurisdiction and approved by the Air District. This approach

provides local agencies a proactive alternative to addressing communities with high levels of risk on a project-by-project approach. This approach is supported by CEQA Guidelines Section 15030(a)(3), which provides that a project's contribution to a cumulative problem can be less than cumulatively considerable "if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact." This approach is also further supported by CEQA Guidelines Section 15064(h)(3), which provides that a project's contribution to a cumulative effect is not considerable "if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem."

Qualified Community Risk Reduction Plans

(A) A qualified Community Risk Reduction Plan adopted by a local jurisdiction should include, at a minimum, the following elements. The District's revised CEQA Guidelines provides the methodology to determine if a Community Risk Reduction Plan meets these requirements. Define a planning area;

(B) Include base year and future year emissions inventories of TACs and PM2.5;

(C) Include Air District–approved risk modeling of current and future risks;

(D) Establish risk and exposure reduction goals and targets for the community in consultation with Air District staff;

(E) Identify feasible, quantifiable, and verifiable measures to reduce emissions and exposures;

(F) Include procedures for monitoring and updating the inventory, modeling and reduction measures in coordination with Air District staff;

(G) Be adopted in a public process following environmental review.

4 CRITERIA POLLUTANT THRESHOLDS

4.2 PROPOSED THRESHOLDS OF SIGNIFICANCE

Project Construction	
Pollutant	**Average Daily (pounds/day)**
ROG (reactive organic gases)	54
NO_X (nitrogen oxides)	54
PM_{10} (exhaust) (particulate matter-10 microns)	82
$PM_{2.5}$ (exhaust) (particulate matter-2.5 microns)	54
$PM_{10}/PM_{2.5}$ (fugitive dust)	Best Management Practices
Local CO (carbon monoxide)	None

Project Operations		
Pollutant	**Average Daily (pounds/day)**	**Maximum Annual (tons/year)**
ROG	54	10
NO_X	54	10
PM_{10}	82	15
$PM_{2.5}$	54	10
Local CO	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	

Plans
1. Consistency with Current Air Quality Plan control measures 2. Projected VMT or vehicle trip increase is less than or equal to projected population increase

Regional Plans (Transportation and Air Quality Plans)
No net increase in emissions of criteria air pollutants and precursors

4.3 JUSTIFICATION AND SUBSTANTIAL EVIDENCE SUPPORTING THRESHOLDS

4.3.1 PROJECT CONSTRUCTION CRITERIA POLLUTANT THRESHOLDS

Staff proposes criteria pollutant construction thresholds that add significance criteria for exhaust emissions to the existing fugitive dust criteria employed by the Air District. While our current Guidelines considered construction exhaust emissions controlled by the overall air quality plan, the implementation of new and more stringent state and federal standards over the past ten years now warrants additional control of this source of emissions.

The average daily criteria air pollutant and precursor emission levels shown above are recommended as the thresholds of significance for construction activity for exhaust emissions. These thresholds represent the levels above which a project's individual emissions would result in a considerable contribution (i.e., significant) to the SFBAAB's existing non-attainment air quality conditions and thus establish a nexus to regional air quality impacts that satisfies CEQA requirements for evidence-based determinations of significant impacts.

For fugitive dust emissions, staff recommends following the current best management practices approach which has been a pragmatic and effective approach to the control of fugitive dust emissions. Studies have demonstrated (Western Regional Air Partnership, U.S.EPA) that the application of best management practices at construction sites have significantly controlled fugitive dust emissions. Individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to more than 90 percent. In the aggregate best management practices will substantially reduce fugitive dust emissions from construction sites. These studies support staff's recommendation that projects implementing construction best management practices will reduce fugitive dust emissions to a less than significant level.

4.3.2 PROJECT OPERATION CRITERIA POLLUTANT THRESHOLDS

The proposed thresholds for project operations are the average daily and maximum annual criteria air pollutant and precursor levels shown above. These thresholds are based on the federal BAAQMD Offset Requirements to ozone precursors for which the SFBAAB is designated as a non-attainment area which is an appropriate approach to prevent further deterioration of ambient air quality and thus has nexus and proportionality to prevention of a regionally cumulative significant impact (e.g. worsened status of non-attainment). Despite non-attainment area for state PM_{10} and pending nonattainment for federal $PM_{2.5}$, the federal NSR Significant Emission Rate annual limits of 15 and 10 tons per year, respectively, are proposed thresholds as BAAQMD has not established an Offset Requirement limit for $PM_{2.5}$ and the existing limit of 100 tons per year is much less stringent and would not be appropriate in light of our pending nonattainment designation for the federal 24-hour $PM_{2.5}$ standard. These thresholds represent the emission levels above which a project's individual emissions would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. The thresholds would be an evaluation of the incremental contribution of a project to a significant cumulative impact. These threshold levels are well-established in terms of existing regulations as promoting review of emissions sources to prevent cumulative deterioration of air quality. Using existing environmental standards in this way to establish CEQA thresholds of significance under Guidelines section 15067.4 is an appropriate and effective means of promoting consistency in significance determinations and integrating CEQA environmental review activities with other areas of environmental

regulation. (*See Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal. App. 4th 98, 111.[4])

4.3.3 LOCAL CARBON MONOXIDE THRESHOLDS

The proposed carbon monoxide thresholds are based solely on ambient concentration limits set by the California Clean Air Act for Carbon Monoxide and Appendix G of the State of California CEQA Guidelines.

Since the ambient air quality standards are health-based (i.e., protective of public health), there is substantial evidence (i.e., health studies that the standards are based on) in support of their use as CEQA significance thresholds. The use of the ambient standard would relate directly to the CEQA checklist question. By not using a proxy standard, there would be a definitive bright line about what is or is not a significant impact and that line would be set using a health-based level.

The CAAQS of 20.0 ppm and 9 ppm for 1-hour and 8-hour CO, respectively, would be used as the thresholds of significance for localized concentrations of CO. Carbon monoxide is a directly emitted pollutant with primarily localized adverse effects when concentrations exceed the health based standards established by the California Air Resources Board (ARB).

In addition, Appendix G of the State of California CEQA Guidelines includes the checklist question: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation? Answering yes to this question would indicate that the project would result in a significant impact under CEQA. The use of the ambient standard would relate directly to this checklist question.

4.3.4 PLAN-LEVEL CRITERIA POLLUTANT THRESHOLDS

This proposed threshold achieves the same goals as the Air District's current approach while alleviating the existing analytical difficulties and the inconsistency of comparing a plan update with AQP growth projections that may be up to several years old. Eliminating the analytical inconsistency provides better nexus and proportionality for evaluating air quality impacts for plans.

Over the years staff has received comments on the difficulties inherent in the current approach regarding the consistency tests for population and VMT growth. First, the population growth estimates used in the most recent AQP can be up to several years older than growth estimates used in a recent plan update, creating an inconsistency in this analysis. Staff recommends that this test of consistency be eliminated because the Air

[4] The Court of Appeal in the *Communities for a Better Environment* case held that existing regulatory standards could not be used as a definitive determination of whether a project would be significant under CEQA where there is substantial evidence to the contrary. Staff's proposed thresholds would not do that. The thresholds are levels at which a project's emissions would normally be significant, but would not be binding on a lead agency if there is contrary evidence in the record.

District and local jurisdictions all use regional population growth estimates that are disaggregated to local cities and counties. In addition, the impact to air quality is not necessarily growth but where that growth is located. The second test, rate of increase in vehicle use compared to growth rate, will determine if planned growth will impact air quality. Compact infill development inherently has less vehicle travel and more transit opportunities than suburban sprawl.

Second, the consistency test of comparing the rate of increase in VMT to the rate of increase in population has been problematic at times for practitioners because VMT is not always available with the project analysis. Staff recommends that either the rate of increase in VMT or vehicle trips be compared to the rate of increase in population. Staff also recommends that the growth estimates used in this analysis be for the years covered by the plan. Staff also recommends that the growth estimates be obtained from the Association of Bay Area Governments since the Air District uses ABAG growth estimates for air quality planning purposes.

4.3.5 CRITERIA POLLUTANT THRESHOLDS FOR REGIONAL PLANS

Regional plans include the Regional Transportation Plan prepared by the Metropolitan Transportation Commission (MTC) and air quality plans prepared by the Air District.

The Regional Transportation Plan (RTP), also called a Metropolitan Transportation Plan (MTP) or Long-Range Transportation Plan is the mechanism used in California by both Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Agencies (RTPAs) to conduct long-range (minimum of 20 years) planning in their regions. MTC functions as both the regional transportation planning agency, a state designation, and, for federal purposes, as the region's metropolitan planning organization (MPO). As such, it is responsible for regularly updating the Regional Transportation Plan, a comprehensive blueprint for the development of comprehensive transportation system that includes mass transit, highway, airport, seaport, railroad, bicycle and pedestrian facilities. The performance of this system affects such public policy concerns as air quality, environmental resource consumption, social equity, “smart growth,” economic development, safety, and security. Transportation planning recognizes the critical links between transportation and other societal goals. The planning process requires developing strategies for operating, managing, maintaining, and financing the area’s transportation system in such a way as to advance the area’s long-term goals.

The Air District periodically prepares and updates plans to achieve the goal of healthy air. Typically, a plan will analyze emissions inventories (estimates of current and future emissions from industry, motor vehicles, and other sources) and combine that information with air monitoring data (used to assess progress in improving air quality) and computer modeling simulations to test future strategies to reduce emissions in order to achieve air quality standards. Air quality plans usually include measures to reduce air pollutant emissions from industrial facilities, commercial processes, motor vehicles, and other sources. Bay Area air quality plans are prepared with the cooperation of MTC and the Association of Bay Area Governments (ABAG).

The proposed threshold of significance for regional plans is no net increase in emissions including criteria pollutant emissions. This threshold serves to answer the State CEQA Guidelines Appendix G sample question: "Would the project Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?"

5 ODOR THRESHOLDS

5.2 PROPOSED THRESHOLDS OF SIGNIFICANCE

Project Operations – Source or Receptor	Plans
Five confirmed complaints per year averaged over three years	Identify the location, and include policies to reduce the impacts, of existing or planned sources of odors

5.3 JUSTIFICATION AND SUBSTANTIAL EVIDENCE SUPPORTING THRESHOLDS

Staff proposes revising the current CEQA significance threshold for odors to be consistent with the Air District's regulation governing odor nuisances (Regulation 7—Odorous Substances). The current approach includes assessing the number of unconfirmed complaints which are not considered indicative of actual odor impacts. Basing the threshold on an average of five confirmed complaints per year over a three year period reflects the most stringent standards derived from the Air District rule and is therefore considered an appropriate approach to a CEQA evaluation of odor impacts.

Odors are generally considered a nuisance, but can result in a public health concern. Some land uses that are needed to provide services to the population of an area can result in offensive odors, such as filling portable propane tanks or recycling center operations. When a proposed project includes the siting of sensitive receptors in proximity to an existing odor source, or when siting a new source of potential odors, the following qualitative evaluation should be performed.

When determining whether potential for odor impacts exists, it is recommended that Lead Agencies consider the following factors and make a determination based on evidence in each qualitative analysis category:

- **Distance**: Use the screening-level distances in Table 9.
- **Wind Direction:** Consider whether sensitive receptors are located upwind or downwind from the source for the most of the year. If odor occurrences associated

with the source are seasonal in nature, consider whether sensitive receptors are located downwind during the season in which odor emissions occur.

- **Complaint History:** Consider whether there is a history of complaints associated with the source. If there is no complaint history associated with a particular source (perhaps because sensitive receptors do not already exist in proximity to the source), consider complaint-history associated with other similar sources in BAAQMD's jurisdiction with potential to emit the same or similar types of odorous chemicals or compounds, or that accommodate similar types of processes.

- **Character of Source:** Consider the character of the odor source, for example, the type of odor events according to duration of exposure or averaging time (e.g., continuous release, frequent release events, or infrequent events).

- **Exposure:** Consider whether the project would result in the exposure of a substantial number of people to odorous emissions.

Table 9 – Screening Distances for Potential Odor Sources

Type of Operation Project Screening	Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations	1 mile
Rendering Plant	2 miles
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Coffee Roaster	1 mile

California Integrated Waste Management Board (CIWMB). Facilities that are regulated by the CIWMB (e.g. landfill, composting, etc.) are required to have Odor Impact Minimization Plans (OIMP) in place and have procedures that establish fence line odor detection thresholds. The Air District recognizes a Lead Agency's discretion under CEQA to use established odor detection thresholds as thresholds of significance for CEQA review for CIWMB regulated facilities with an adopted OIMP.

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EXHIBIT 6

Comments Regarding Air Quality Impact Analysis and Mitigation

706 Mission Street Project

Draft EIR (San Francisco, CA)

Autumn Wind Associates, Inc.

Newcastle, CA

Prepared for Tom Lippe, Attorney

April 26, 2013

I. Introduction

Autumn Wind Associates provides the following comments regarding air quality analysis and mitigation measures identified in the 706 Mission Street – The Mexican Museum and Residential Tower Project DEIR at the request of Tom Lippe, Esq. This review and commentary focuses on the proposed project's construction-related criteria- and toxic air contaminant-pollutants, thresholds of significance, and mitigation measure M-AQ-1. Reviewed documents included the DEIR and air quality-related appendices.

As noted in the DEIR's Air Quality element and related supporting documents, increased cancer risk beyond the threshold of significance is anticipated to occur with project construction emissions, with mitigation measure components ostensibly designed to reduce those emissions very substantially (65%) to a less than significant level. Unfortunately, it is not clear from the discussion in the documentation how individual measures designed to reduce diesel particulate matter (DPM) will be verified for effectiveness prior to or during actual construction, nor is there any discussion of how those substantial commitments, running across 36 months will be enforced from start to project finish.

The EIR appears to suggest that a Construction Emission Minimization Plan, to be prepared and approved prior to construction startup, will be reviewed by an "Environmental Planning Air Quality Specialist" before final approval by the City's ERO. We are concerned about the qualifications of that Specialist since tasks will include intimate familiarity with diesel engines, construction vehicles and equipment, VDECS technologies, new and used construction vehicles and emission control options, air regulations, etc., and we are aware of no certifications by CARB or the BAAQMD for that position. No information is provided on how vehicles with lower-emitting engines or VDECS will be confirmed as acceptable, either in advance or during the project's three year building period. Nor is there any discussion detailing how, for instance, idling time of diesel equipment onsite will be limited to no more than two minutes at a time. This and other measure components may look good on paper, but without discussion of and provision for truly effective compliance mechanisms, including regular enforcement, the measures can be expected to be undercut or simply ignored once actual site preparation, demolition, and construction activities begin. Without valid enforcement and compliance mechanisms applied throughout the construction period, we have little doubt that DPM emissions will not be reduced by the targeted 65% measure.

Our review also raises concerns regarding the Lead Agency's use of BAAQMD thresholds of significance derived from the New Source Review (NSR) process. Because NSR thresholds have been designed to account for the increment of criteria pollutant emissions from air agency-permitted stationary source emissions in the air basin, they would automatically require adjustment to reflect the considerably higher (PM2.5) and substantially higher (NOx) increments from mobile sources regularly drawn to new indirect sources such as 706 Mission Street. Because those NSR-borrowed CEQA thresholds have not been

adjusted to reflect the reality that the great majority of the basin's ozone nonattainment result from mobile source emissions, and not stationary sources, they will automatically under-represent the actual, true significance of construction, operational, and cumulative emissions that will result with development of the proposed 706 Mission Street project.

In sum, our review indicates that the project's construction emissions mitigation is flawed by its lack of enforceability, the absence of qualifications for the Environmental Planning Air Quality Specialist, too much potential for subjectivity in determining equipment or technology feasibility, and a lack of information showing how mitigation components will be reviewed, approved, implemented and then enforced across the three-year construction period. Without compliance and enforcement mechanisms, and clearly defined feasibility objectives, it is highly unlikely that the project will actually reduce its construction DPM emissions by the claimed 65% value. Finally, the Lead Agency's reliance on substantively flawed NSR thresholds to evaluate and characterize the project's mobile source-driven air quality impact significance is very likely to under-represent actual project impacts.

II. Construction Mitigation Measure M-AQ-1 Is Unlikely To Produce Required 65% DPM Reduction

At DEIR Appendix G, "706 Mission Street Air Quality Technical Report" Table 17, pg. 25 excess cancer risk for existing resident children is predicted at 27.3 per million. This exceeds the cancer risk threshold of significance (TOS) of 10 per million. At pg. 26, mitigation M-AQ-1 identifies specific measures necessary to reduce the project's toxic diesel particulate matter (DPM) emissions to achieve a less-than-significant risk level, below the TOS. (Note: Mitigation M-AQ-3 found at DEIR pg. IV.G.34 appears to reflect the same information as contained in Appendix G's M-AQ-1; therefore, comments directed here to M-AQ-1 should pertain also to M-AQ-3). As currently written, M-AQ-1 fails to ensure that its components will be implemented and enforced on a regular basis; without effective onsite enforcement and compliance provisions, the measure will not provide the DEIR-claimed 65% DPM reduction.

Included at pg. 26 is "Limiting idling times by either shutting equipment off when not in use or reducing the maximum idling time to two minutes." It is important to note that on-and offroad construction equipment will include delivery vehicles throughout all construction phases, and many diesel-powered vehicles will routinely operate onsite each day for the three year construction period. Large construction projects involve dozens of contractors and sub-contractors operating a wide variety of diesel vehicles and equipment at the site on highly variable cycles. Yet without highly effective and repetitive notification of mitigation requirements it is virtually certain that many diesel operators at 706 Mission Street will not know of or, as a practical matter, comply with M-AQ-1's idling time restriction over the three-year construction period unless forced to do so. As a licensed general and specialty contractor, we have operated or controlled diesel-powered construction equipment for many years, and we have audited construction projects for compliance with mitigation requirements---our experience shows that owners

and operators will simply not stop their equipment for a two-minute pause based on the common belief that excessive battery, starter motor, and unnecessary engine wear will result and because of the additional time it takes to re-start and regain hydraulic pressure to raise related accessories, etc. Additionally, backhoes, graders, excavators, grout pumps, and similar types of equipment routinely pause, often for more than two minutes but without knowing in advance, while grades are checked, subsurface improvements (gas lines, electrical, etc.) are inspected, transit mixers are cycled in and out, etc. In those situations operators routinely throttle back to idle and stay with the equipment while waiting to resume work; few such interruptions can be predicted to last two minutes or less and so equipment engines are left to idle. Industry practices, buttressed by the effect of employee turnover rates, will predominate during project construction. Without constant, hourly enforcement by a qualified, empowered onsite compliance officer, the two-minute idling mitigation will simply not function as envisioned in the DEIR.

At Appendix G, pg. 26, M-AQ-1 includes "Prohibiting use of diesel generators for electric power because on-site distribution of electricity is available". Welding operations routinely require use of truck-mounted generators due to portability requirements. Similarly, portable, high-intensity, generator-powered lights are routinely used on large construction projects. Without regular enforcement by a qualified, empowered onsite compliance officer, we would expect this prohibition to be commonly ignored.

At Appendix G, pg. 27, M-AQ-1 "Requiring use of Interim Tier 4 or Tier 4 equipment where such equipment is available and feasible for use" is followed by information stating that backhoes and rubber-tired dozers are available in Tier 4 configuration. While these and other types of construction equipment are or will become available with Tier 4 engines for use during the project's construction duration, this measure is fatally flawed as a result of the subjective nature of "feasible for use". Without defining what constitutes "feasible for use", a contractor could, for example, be permitted to claim infeasibility in order to use older, higher-emitting construction equipment simply because they do not care to obtain newer, lower-emitting equipment. Feasibility should be conditioned to the availability of Tier III VDECS or Tier 4 equipment in the marketplace---if it is available it must be considered feasible.

As noted near the end of M-AQ-1, the Construction Emissions Minimization Plan (CEMP) must be submitted to the ERO, who will subsequently seek "review and approval by an Environmental Planning Air Quality Specialist prior to the commencement of construction activities". No information is provided to determine where the ERO will obtain the services of a qualified "Environmental Planning Air Quality Specialist—whatever that is. Is the Lead Agency anticipating that BAAQMD will handle the duties of this Specialist position? We are aware of no training or certification program available to planners or air quality specialists for this job title, to provide the level of expertise necessary to successfully accomplish the "review and approval" of the highly technical duties related to engine inspections, VDECS applicability and availability, and other feasibility-related matters; we do know from many years of experience that planners know little or nothing about construction equipment, engines and Tier levels, air quality regulations, and emissions control technologies---and wouldn't begin to know how to actually

evaluate equipment and emissions controls in the field necessary for compliance with M-AQ-1. While a qualified, experienced equipment-experienced air quality specialist from BAAQMD could provide such expertise, there is no information in M-AQ-1 or the DEIR to show that such expertise will be provided. Moreover, equipment used at the construction site across the three-year duration will need to be verified onsite regularly for actual compliance, since it is virtually impossible that all equipment to be used over its three-year construction period could be accurately listed in the CEMP prior to start of construction. Without defining what constitutes "feasible for use" and providing for regular (daily) verification and compliance inspections onsite, we believe M-AQ-1 will actually produce much less than the 65% DPM reduction it claims.

Tier 3 engines in new construction equipment were required, based on engine hp, beginning in 2006 and through 2011 (75 – 175 hp). Tier 4 Interim began in 2008, based on engine hp, and will conclude in MY2014. Tier 4 began in 2008, based on engine hp, and will conclude with all hp models required to emit at Tier 4 levels by MY 2015. (See diesel tier introduction dates; http://www.dieselforum.org/index.cfm?objectid=6D682188-9381-11E0-98E9000C296BA163.) Based on this information, virtually all types of construction equipment to operate at the 706 Mission St. project are already available in the marketplace with Tier 3 engines, and many are available with lower-emitting Tier 4. By the beginning of the project's last construction year, all new construction equipment will require Tier 4 engines. Rather than relying on the "feasible for use" language which is unenforceable as written, the EIR should stipulate that all diesel-powered offroad or stationary equipment at the project operate with Tier 3 engines or Tier 4 engines. While this will limit availability of construction equipment for the project, it is nonetheless reasonable and feasible since such equipment is available now and will increase in number over time.

We suggest the Lead Agency consider adding the following, suggested language to the project's construction mitigation:

1. All offroad and stationary diesel engine-equipped equipment used at the project shall have:

   i. Engines that meet or exceed either USEPA or ARB Tier 3 off-road emission standards, or utilize CARB Level 3 Verified Diesel Emissions Control Strategy (VDECS); or

   ii. If offroad or stationary diesel-engine equipment meeting Tier 3 or CARB Level 3 VDECS emission standards is not obtainable within the State, equipment with the next most recent Tier or VDECS level must be used."

2. The project shall require use of an Environmental Coordinator experienced with construction practices, air quality regulations, construction equipment, diesel engines, VDECS and various emissions control technologies, and other tasks associated with ensuring that the project will deliver the 65% DPM

reduction required by M-AQ-1; the Coordinator will review the Construction Emission Mitigation Plan for approvability, and provide regular (daily or 3x/week) onsite compliance inspections and enforcement services. If diesel equipment is found to be non-compliant with M-AQ-1, it shall be immediately removed from service and repaired or upfitted for compliance, or replaced with compliant equipment. Violations of other M-AQ-1 components (e.g. 2 minute idling restriction) will result in written correction notice to the operator and the contractor; continued failures to comply will result in equipment being red-tagged for removal from the site.

III. Lead Agency Use of NSR Thresholds of Significance For the Determination of Indirect Source Project Impact Significance Can Be Expected To Lead To Continued Nonattainment

At DEIR pg. IV.G.21, the source of the project's thresholds of significance used to determine the project's air quality impact significance is explained:

> "The potential for a project to result in a cumulatively considerable net increase in criteria air pollutants, which may contribute to an existing or projected air quality violation, is based on emissions limits for stationary sources set in the state and federal Clean Air Acts. The federal New Source Review (NSR) program was created by the federal Clean Air Act to ensure that stationary sources of air pollution are constructed in a manner that is consistent with attainment of federal health-based ambient air quality standards.
>
> "Although this regulation applies to new or modified stationary sources, land use development projects result in ROG and NOx emissions as a result of increases in vehicle trips, architectural coating and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of land use projects, and projects that result in emissions below these thresholds would not be considered to contribute to an existing or projected air quality violation or result in a considerable net increase in ROG and NOx emissions.

The Lead Agency has mistakenly and without evidence assumed that use of NSR-derived thresholds to evaluate the 706 Mission Street's indirect source emissions effectively ensures that the project will not "contribute to an existing or project air quality violation…" Without factual evidence to substantiate that "the above (NSR) thresholds can be applied to…land use projects", the Lead Agency cannot reasonably conclude that BAAQMD's NSR-derived thresholds of significance have been set at levels that, when applied to evaluate the 706 Mission Street project, will not contribute to the basin's longstanding ozone and PM air quality standards violations. In order for the Lead Agency's BAAQMD-derived thresholds to be justified, factors used to determine the NSR lbs/day threshold levels must be relatively comparable to and consistent with indirect source inventory numbers and their mobile source-related influence on the basin's nonattainment designations. If emissions from vehicles in new land uses subject to CEQA review outdistance emissions contributed by highly-regulated stationary sources, it makes little sense to expect

that NSR thresholds would provide control adequate to expeditiously return the air basin to attainment. In fact, there is no clear nexus between the two—factors influencing establishment of NSR values for stationary sources in the SFBAAB are dissimilar to those affecting mobile source emissions chiefly responsible for the basin's ozone and PM2.5 nonattainment.

The SF Bay Area air basin is classified federal nonattainment for ozone and PM2.5, and classified State nonattainment for ozone, PM10, and PM2.5. Violations of ambient air quality standards have persisted for many years, despite the BAAQMD's longstanding attempts and mechanisms identified in District Clean Air Plans to achieve healthful air quality by required attainment dates. Actual air quality reflected in air monitoring data and the recurrent failures to attain the standards are the true litmus test, indicating that District rules, regulations, and programs, particularly those aimed at reducing the air quality impacts of mobile sources that populate new indirect sources of air pollution, are not providing enough reductions. This is particularly relevant to mobile sources, since the air basin's stationary sources contribute only a fraction of the emissions generated daily by on-and off-road mobile sources.

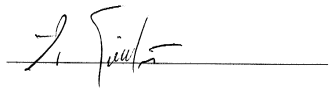
A number of important differences exist between stationary sources and indirect sources, suggesting that thresholds from one will not interchange effectively with the other. While stationary sources of air pollution are subject to Clean Air Act-required NSR regulations that will impose specific significance thresholds in pounds of criteria pollutant emission per day, BACT emission controls, and emission offsets, BAAQMD does not similarly require that new indirect sources of emissions (such as the 706 Mission Street project) that exceed the CEQA thresholds of significance borrowed from NSR thresholds must utilize BACT and offsets to achieve less-than-significant impacts. Under the CAA significant sources of new stationary source emissions are highly regulated, yet under CEQA the same pollutants, occurring at equivalent levels from a new indirect source, are routinely accepted by the lead agency with nothing more than a statement of "Overriding Considerations". And while indirect source mitigations may produce some emission reductions, only stationary sources must be permitted annually, inspected regularly, and with operating conditions subject to stringent enforcement penalties. Based on our experiences, few CEQA projects actually comply with substantive emission mitigations designed to produce real emission reductions that would not otherwise occur. Although air districts routinely inspect permitted stationary sources for compliance, lead agencies rarely follow CEQA projects post-approval and fewer still provide any mitigation-related inspection, compliance, or enforcement.

Additional fundamental differences exist between NSR-governed stationary source thresholds and CEQA mobile source-oriented thresholds. NSR thresholds of significance are established and applied to stationary sources on the basis of an air basin's nonattainment designation---as the basin's designation worsens thresholds, BACT requirements, and offset triggers become more stringent. This is not the case, however, when NSR thresholds are applied as CEQA thresholds to indirect sources—CEQA thresholds are not required to change when a basin's nonattainment designation changes. Moreover, there is a

logical nexus between the levels at which NSR threshold quantities are set and the number of stationary sources that produce daily and annual emissions incrementally tied to the basin's attainment designations.

In order to apply NSR levels, then, to an air basin's indirect sources of emissions there must be relative parity in source numbers and air emissions budgets. In fact, there is no such parity in the SFBAAB since mobile source emissions comprise the greatest portion of the NOx emissions inventory, and NOx is formative of the basin's nonattainment-level ozone. Based on BAAQMD emissions inventory information, mobile source NOx comprises 85% of the basin's NOx inventory, roughly six times that produced by its stationary sources. (See BAAQMD 2010 Clean Air Plan "NOx emissions by source, 2009", pg. 2-15.) Since the BAAQMD's NSR thresholds have been established as a function of the basin's nonattainment designations and keyed quantitatively to the number of permitted sources in the inventory, their application to indirect sources—mostly vehicle emission-related---must then automatically and substantially undercut the control of CEQA-subject NOx emissions from new indirect sources. In fact, setting the CEQA NOx threshold equal to the NSR threshold is akin to exchanging a dollar for eighteen cents. It is no wonder that the SFBAAB continues its history of ozone nonattainment; similarly, mobile source PM2.5, including toxic DPM emissions, contributes substantially to the basin's PM2.5 and PM10 nonattainment designations.

Sincerely,



Greg Gilbert
Autumn Wind Associates

STATEMENT OF QUALIFICATIONS

Autumn Wind Associates

Greg Gilbert is director and founder of Autumn Wind Associates, Inc, located northeast of Sacramento, CA. Utilizing primarily ex-air agency personnel, AWA provides expert review, analysis, and estimation of potential air quality and associated environmental impacts of proposed land-use development projects involving both indirect- (mobile) and stationary (operating under air agency permit) sources of air pollution. He has consulted on air quality land use planning, mobile, and stationary source matters and projects to private and public clients since leaving public service as an air agency manager in 2000. Previously, he was national marketing director for an emissions catalyst products and technology firm with international markets in mobile and stationary sources. Between 1990 and 2000 Mr. Gilbert was employed in two California air agencies, most recently as project manager in the Mobile Source Division of the Sacramento Metropolitan Air Quality Management District (SMAQMD). While at SMAQMD Mr. Gilbert was responsible for assisting in the development and implementation of the agency's heavy-duty diesel vehicle low-emission incentive program that would later serve as the model for the statewide Moyer Program of the California Air Resources Board (CARB); the evaluation of land use-related air quality emission impacts and control strategies, development of California Environmental Quality Act (CEQA) thresholds to evaluate and mitigations to reduce, offset, or eliminate air quality impacts of new land use; development of air-related CEQA guidance; and creation of the first air quality CEQA mitigation fee program with percentage-based emission reduction options for developers to mitigate project-specific construction and operational development-related emissions.

Since 2001, AWA has provided consulting expertise to private entities and air agencies, provided input for revisions to the URBEMIS (urban emissions model to predict development-related mobile- and area-source emissions) model, conducted research on construction practices and equipment emissions, assisted with development of CEQA land-use guidance documents and mitigation strategies for CA air quality agencies, and provided modeling and consulting expertise for toxics-related health risk assessments. Mr. Gilbert reviews and provides expert written and testimony on CEQA- and development-related project-specific environmental analysis, mitigation, and documentation for a wide range of public-, private-, and environmental-sector clients, including law firms specializing in CEQA-NEPA cases.

EXHIBIT 7

DRAFT ENVIRONMENTAL IMPACT REPORT

8 WASHINGTON STREET / SEAWALL LOT 351 PROJECT

CITY AND COUNTY OF SAN FRANCISCO PLANNING DEPARTMENT:
CASE NO. 2007.0030E

STATE CLEARINGHOUSE NO. 2007122027

DRAFT EIR PUBLICATION DATE: JUNE 15, 2011

DRAFT EIR PUBLIC HEARING DATE: JULY 21, 2011

DRAFT EIR PUBLIC COMMENT PERIOD:
JUNE 15, 2011 TO AUGUST 15, 2011

Written comments should be sent to:

Bill Wycko, Environmental Review Officer
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

concentrations of $PM_{2.5}$ from roadway sources within 500 feet of a project site would exceed a concentration of 0.2 micrograms per cubic meter ($\mu g/m^3$) (annual average).[3] This action level (of 0.2 $\mu g/m^3$) represents about 8 percent to 10 percent of the range of ambient $PM_{2.5}$ concentrations in San Francisco based on monitoring data, and is based on epidemiological research that indicates that such a increase in concentration can result in an approximately 0.28 percent increase in non-injury mortality, or an increased mortality rate of approximately 20 "excess deaths" per year per one million population in San Francisco.[4,5] If this standard is exceeded, Article 38 requires that the project applicant design the project to minimize air pollutants indoors or install a filtered air supply system, with high-efficiency filters.

The project site, at 8 Washington Street, is located within the Potential Roadway Exposure Zone, as mapped by DPH. In consultation with DPH, an Air Quality Assessment was prepared for the proposed project. Results of the assessment indicate that the project site does not exceed a $PM_{2.5}$ concentration greater than 0.2 micrograms per cubic meter.[6] Thus, the proposed project is not required to install a filtered air supply system as per the Health Code.

IMPACTS

SIGNIFICANCE THRESHOLDS

The Planning Department Initial Study Checklist, which incorporates Appendix G of the state CEQA Guidelines, provides a framework of topics to be considered in evaluating potential impacts under CEQA.

Implementation of a project could have a potentially significant impact related to air quality if the project were to:

---

[3] For purposes of evaluation of potential effects of $PM_{2.5}$ exposure, DPH also recommends analysis where there are more than 50,000 daily vehicles within 330 feet (100 meters) of the site, or more than 10,000 daily vehicles within 165 feet (50 meters). These latter two conditions are included to capture equivalent impacts from lesser concentrations of traffic in smaller areas than the ARB-recommended standard of 100,000 daily vehicles within 500 feet (150 meters) (CARB, *Air Quality and Land Use Handbook: A Community Health Perspective*, 2005).

[4] "Excess deaths" (also referred to as premature mortality) refer to deaths that occur sooner than otherwise expected, absent the specific condition under evaluation; in this case, exposure to $PM_{2.5}$.

[5] San Francisco Department of Public Health, Occupational and Environmental Health Section, Program on Health, Equity, and Sustainability, "Assessment and Mitigation of Air Pollutant Health Effects from Intra-urban Roadways: Guidance for Land Use Planning and Environmental Review," May 6, 2008. Twenty excess deaths per million based on non-injury, non-homicide, non-suicide mortality rate of approximately 714 per 100,000. Although San Francisco's population is less than one million, the presentation of excess deaths is commonly given as a rate per million population.

[6] Patrick Fosdahl, MS, REHS, San Francisco Department of Public Health, Letter to Paul Osmundson re: 8 Washington Street Air Quality Assessment, April 28, 2009. A copy of this letter is on file as part of Case No. 2007.0030E and available for public review at the Planning Department, 1650 Mission Street, Suite 400.

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable Federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

For project-level impact analysis, the BAAQMD recommends various thresholds and tests of significance. BAAQMD significance thresholds are summarized in Table IV.E-3. However, on December 15, 2010, the District's Board of Directors revised the effective date for the risk thresholds for new receptors from January 1, 2011 to May 1, 2011. All other CEQA thresholds of significance adopted by the Board of Directors on June 2, 2010 remain effective as of June 2, 2010. In addition, BAAQMD Resolution No. 2010-06, which was approved by the BAAQMD Board of Directors on June 2, 2010, clarifies that it is BAAQMD's policy that the revised significance thresholds be applied to those of projects whose notices of preparation are issued (and environmental analyses begun) after June 2, 2010.[7] The following analysis of air quality impacts from the 8 Washington Street project is based on BAAQMD's most recent thresholds of significance and the BAAQMD CEQA Air Quality Guidelines, May 2011.

IMPACT EVALUATION

Project-related air quality impacts fall into two categories: short-term impacts due to construction, and long-term impacts due to project operation. First, during project construction, the project would affect local particulate concentrations primarily due to fugitive dust sources, as well as construction equipment exhaust. Over the long term, the project would result in an increase in emissions primarily due to increased motor vehicle trips and an emergency back up generator as required per the fire code. On-site stationary sources (such as natural gas boilers for water and space heating) and area sources (such as landscaping and use of consumer products) would result

[7] It is BAAQMD's policy that the risk and hazards thresholds for siting new receptors be applied to projects whose NOP was prepared after May 1, 2011.

Table IV.E-3: BAAQMD Air Quality Project-Level Thresholds of Significance

Pollutant	Construction-Related	Operational-Related	
Criteria Air Pollutants and Precursors (Regional)	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10} (Exhaust)	82	82	15
$PM_{2.5}$ (Exhaust)	54	54	10
$PM_{10}/PM_{2.5}$ (Fugitive Dust)	Best Management Practices	None	
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	
Risks and Hazards (Individual Projects)	Same as Operational Thresholds	Compliance with a Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million OR Increased non-cancer risk of >1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase > 0.3 $\mu g/m^3$ annual average	
Risks and Hazards (Cumulative Threshold)	Same as Operational Thresholds	Compliance with a Qualified Community Risk Reduction Plan OR Cancer: > 100 in a million (from all local sources) Non-cancer: >10.0 Hazard Index)from all local sources) $PM_{2.5}$ > 0.8 $\mu g/m^3$ annual average (from all local sources)	
Odors	None	5 confirmed complaints per year averaged over 3 years	

Notes: CO = carbon monoxide; lb/day = pounds per day; NO_X = oxides of nitrogen; $PM_{2.5}$= fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ppm = parts per million; ROG = reactive organic gases.

Source: Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2011.

in lesser quantities of pollutant emissions. This section addresses both project-specific impacts, and whether the project will make a cumulatively considerable contribution to cumulative air quality impacts; in each instance, the text makes clear whether the analysis addressed project-specific or cumulative impacts. .

The proposed project would include residential and retail uses not typically associated with noxious odors. Therefore, the proposed project would not create objectionable odors affecting a substantial number of people, and odors are not discussed further in this section.

Impact AQ-1: Construction of the proposed project would not violate an air quality standard or contribute to an existing or projected air quality violation, either individually or cumulatively. *(Less than Significant)*

Demolition, grading, and new construction activities would temporarily affect local air quality during project construction, causing temporary increases in criteria pollutants. These include emissions generated from construction activities, combustion emissions of criteria air pollutants (reactive organic gases [ROG], nitrogen oxides [NOx], carbon monoxide [CO], sulfur oxides [SOx], and PM_{10} and $PM_{2.5}$) primarily from operation of construction equipment and worker vehicles, and evaporative emissions (ROG) from asphalt paving and architectural coating applications.

Construction-related emissions of criteria air pollutants and precursors were modeled in accordance with BAAQMD-recommended methodologies. Emissions of criteria air pollutants and precursors were modeled based on California Emissions Estimator Model (CalEEMod) defaults for construction equipment and the anticipated schedule for construction of the proposed project. The project applicant provided outlines of construction phasing and scheduling which were used to run CalEEMod. Construction would involve demolition of 4,900 sq. ft. of existing structures and construction of 165 residential units along with 41,900 sq. ft. of commercial/retail space and 185,000 sq. ft. of parking garage. Demolition and construction would occur over a 28-month period assumed to occur between January 1, 2012 and May 1, 2014.

Table IV.E-4 summarizes the modeled construction-related emissions of each criteria air pollutant and precursor. As shown in the table, construction-related emissions would be below the BAAQMD thresholds of significance. Thus, construction of the proposed project would have a less-than-significant effect on air quality standards.

Table IV.E-4: Estimated Average Daily Construction Emissions

	Projected Emissions (Pounds per Day)[1]			
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Average Daily Emissions	35.63	47.63	2.01	2.01
BAAQMD Threshold	54	54	82	54

Note:
[1] Emission factors were generated by the URBEMIS 2007 (v. 9.2.4) model for San Francisco County for summer conditions.

Source: Donald Ballanti, *Criteria Air Pollutant Impact Report for the 8 Washington Street Project, San Francisco,* April 2011.

Project emissions would not exceed the BAAQMD construction criteria air pollutant thresholds of significance. BAAQMD CEQA guidance provides that, if a project results in an increase in ROG, NOx, $PM_{2.5}$, or PM_{10} of more than their respective daily or annual mass thresholds, then it would also be considered to contribute considerably to a significant cumulative air quality impact. Since construction of the project would not exceed the daily mass emissions thresholds, the project would not contribute considerably to a significant cumulative effect with respect to construction-related criteria pollutant emissions, and cumulative construction criteria air pollutant impacts would be less than significant.

Impact AQ-2: The proposed project would not result in significant impacts related to fugitive dust resulting from project construction activities. ***(Less than Significant)***

Project-related demolition, excavation, grading and other construction activities may cause wind-blown dust that could contribute particulate matter into the local atmosphere. Dust can cause watering eyes or irritation to the lungs, nose, and throat. Demolition, excavation, grading and

EXHIBIT 8

DRAFT ENVIRONMENTAL IMPACT REPORT

801 Brannan and One Henry Adams Streets Project

PLANNING DEPARTMENT CASE NO. 2000.618E

STATE CLEARINGHOUSE NO. 2003112070

Draft EIR Publication Date:	**June 22, 2011**
Draft EIR Public Hearing Date:	**July 28, 2011**
Draft EIR Public Comment Period:	**June 23, 2011 – August 8, 2011**

SAN FRANCISCO PLANNING DEPARTMENT

Written comments should be sent to:
Environmental Review Officer | 1650 Mission Street, Suite 400 | San Francisco, CA 94103

Plan represents the Bay Area's most recent triennial assessment of the region's strategy to attain the state one-hour ozone standard.

AIR RESOURCE BOARD (ARB) IDLING REGULATIONS

In 2005, the ARB approved a regulatory measure to reduce emissions of toxic and criteria air pollutants by limiting the idling of new heavy-duty diesel vehicles. The regulations generally limit idling of commercial motor vehicles (including buses and trucks) within 100 feet of a school or residential area for more than five consecutive minutes or periods aggregating more than five minutes in any one hour.[155] Buses or vehicles also must turn off their engines upon stopping at a school and must not start their engines more than 30 seconds before beginning to depart from a school. In addition, state law SB 351 (adopted in 2003) prohibits locating public schools within 500 feet of a freeway or busy traffic corridor.

Regional and Local Air Quality Planning

BAY AREA AIR QUALITY MANAGEMENT DISTRICT (BAAQMD)

The BAAQMD is the regional agency with jurisdiction for regulating air quality within the nine-county Bay Area Air Basin. ABAG, MTC, county transportation agencies, cities and counties, and various non-governmental organizations also join in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs.

BAAQMD is responsible for managing region-wide emissions to meet federal and State air quality standards in the Bay Area Air Basin. Specifically, BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the Air Basin and to develop and implement strategies to attain the applicable federal and State standards. As mentioned above, the BAAQMD, in cooperation with the MTC and Association of Bay Area Governments (ABAG), adopted the 2010 Clean Air Plan on September 15, 2010, to replace the Bay Area 2005 Ozone Strategy.

In 1999, BAAQMD adopted its *CEQA Guidelines* as a guidance document to provide lead government agencies, consultants, and project proponents with uniform procedures for assessing air quality impacts

[155] There are 12 exceptions to this requirement (e.g., emergency situations, military, adverse weather conditions, etc.), including: when a vehicle's power takeoff is being used to run pumps, blowers, or other equipment; when a vehicle is stuck in traffic, stopped at a light, or under direction of a police officer; when a vehicle is queuing beyond 100 feet from any restricted area; or when an engine is being tested, serviced, or repaired.

and preparing the air quality sections of environmental documents for projects subject to CEQA. In June 2010, BAAQMD board adopted revised thresholds of significance for air quality impacts. BAAQMD is the regional agency for air quality. Therefore, the Air District's guidelines and thresholds are commonly used in CEQA analysis, and are normally relied upon by the Planning Department for its significance determinations.

SAN FRANCISCO GENERAL PLAN AIR QUALITY ELEMENT

The San Francisco *General Plan* (*General Plan*) includes the 1997 Air Quality Element. The objectives specified by the City include the following:

- ***Objective 1:*** Adhere to state and federal air quality standards and regional programs.
- ***Objective 2:*** Reduce mobile sources of air pollution through implementation of the Transportation Element of the *General Plan*
- ***Objective 3:*** Decrease the air quality impacts of development by coordination of land use and transportation decisions.
- ***Objective 4:*** Minimize particulate matter emissions from road and construction sites.
- ***Objective 5:*** Link the positive effects of energy conservation and waste management to emission reductions.

SAN FRANCISCO DUST CONTROL ORDINANCE

The San Francisco Health Code Article 22B and San Francisco Building Code Section 106.A.3.2.6 collectively constitute the Construction Dust Control Ordinance. The Ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco comply with specified dust control measures. This requirement applies to all site preparation work that has the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil whether or not the activity requires a permit from the Department of Building Inspection (DBI).

Dust suppression activities may include (1) watering all active construction areas sufficiently to prevent dust from becoming airborne and (2) more frequent watering when wind speeds exceed 15 miles per hour. Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the San Francisco Public Works Code. If not required, reclaimed water should be used whenever possible. Contractors shall provide as much water as necessary to control dust (without creating run-off in any area of land clearing, and/or earth movement). During excavation and dirt-moving activities, contractors shall wet sweep or vacuum the streets, sidewalks, paths, and intersections where work is in progress at the end of the

workday. Inactive stockpiles (where no disturbance occurs for more than seven days) greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, and soil shall be covered with a 10 millimeter (0.01 inch) polyethylene plastic (or equivalent) tarp, braced down, or use other equivalent soil stabilization techniques.

For project sites greater than one half-acre in size, the Ordinance requires that the project sponsor submit a Dust Control Plan for approval by the San Francisco Health Department. Interior-only tenant improvements, even if over one-half acre, that will not produce exterior visible dust are exempt from the site-specific Dust Control Plan requirement. As both project sites are greater than one-half acre, this requirement would apply to the proposed project, or either variant.[156]

SAN FRANCISCO HEALTH CODE PROVISIONS REGARDING ROADWAY GENERATED POLLUTANTS

Article 38 of the San Francisco Health Code requires an Air Quality Assessment be prepared for new residential projects of 10 or more units located in proximity to high-traffic roadways, as mapped by DPH, in order to determine whether residents would be exposed to potentially unhealthful levels of PM2.5. Consistent with CARB guidance, the San Francisco Department of Public Health (DPH) has identified that a potential public health hazard for sensitive land uses exists when such uses are located within a 150-meter (approximately 500-foot) radius of any roadway that experiences 100,000 vehicles per day. If a proposed project's air quality assessment shows that annual average concentration of PM2.5 from roadway sources would exceed a concentration of 0.2 micrograms per cubic meter (annual average), then the project sponsor must install a filtered air supply system, with high-efficiency filters, designed to remove at least 80 percent of ambient PM2.5 from habitable areas of residential units.

The project sites are located within the Roadway Exposure Zone, and is therefore subject to Article 38. Accordingly, DPH conducted an exposure analysis for PM2.5, which found that both project sites exceeded the current action level of 0.2 ug/m3. The highest level at 801 Brannan was 0.57 ug/m3 and the highest level at One Henry Adams was 0.39 ug/m3. Based on these results, the proposed project, or either variant, is required to incorporate filtration into the building design as discussed above (see also Mitigation Measure M-AQ-8, page 284).[157]

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156 The 801 Brannan site is approximately 5.21 acres. The One Henry Adams site is approximately 1.65 acres.

157 Thomas Rivard, San Francisco Department of Public Health, Toxic Air Contaminant Exposure Analysis for the 801 and One Henry Adams Streets Project, Letter from Thomas Rivard to Stu During, December 23, 2008.This letter is on file and available for public review at the San Francisco Planning Department, 1650 Mission Street, Fourth Floor, San Francisco, as part of Case File 2000.618E.

IMPACTS

Air quality impacts from land development projects result from project construction and operation. Construction emissions, primarily dust generated by earthmoving activities and criteria air pollutants emitted by construction vehicles, would have a short-term effect on air quality. Operational emissions, generated by project-related traffic and by combustion of natural gas for building space and water heating, would continue to affect air quality throughout the lifetime of the project.

Significance Criteria

A project would have a significant air quality effect on the environment if it were to:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria air pollutant for which the project region is non-attainment under an applicable federal, state, or regional ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

As stated above, in 2010 BAAQMD adopted new significance thresholds for air quality for CEQA analysis. Under the new BAAQMD *CEQA Air Quality Guidelines* and thresholds,[158] the significance thresholds for criteria air pollutant emissions from project construction and operations have generally been lowered. The new thresholds are as follows: for ROG, NOx, and PM2.5, a net increase of 54 pounds per day or 10 tons per year (tpy) would be considered significant, while for PM10, a net increase of 82 pounds per day or 15 tpy would be considered significant. For CO, an increase would be considered significant if it leads to or contributes to CO concentrations exceeding the State Ambient Air Quality Standard (SAAQS). Quantification of the CO concentrations would not be required if a project is consistent with the local congestion management program and plans, and if traffic volumes at affected intersections are below 44,000 vehicles per hour, or below 24,000 vehicles per year in tunnel-like conditions. For construction-period impacts, the same thresholds apply for ROG, NOx, PM2.5, and PM10, except that the thresholds for PM2.5 and PM10 apply only to exhaust emissions. There are no quantitative thresholds for construction dust emissions; instead, impacts are considered less than significant if the

[158] BAAQMD, *California Environmental Quality Act (CEQA) Air Quality Guidelines*, June 2010; and adopted Thresholds of Significance, June 2010. Available online at http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx, accessed May 2, 2011.

BAAQMD Best Management Practices are employed to control dust during construction activities, including demolition and excavation.

BAAQMD considers projects that exceed these criteria air pollutant standards also to result in a cumulatively considerable air quality impact upon the region. According to BAAQMD, no further cumulative analysis should be required beyond the analysis of whether a proposed project's impacts would contribute considerably to ambient levels of pollutants or GHGs,[159] with the exception of the following cumulative risk and hazard analysis for toxic air contaminants.

For health risks and hazards resulting from emissions of toxic air contaminants, BAAQMD recommends either that a project be found to be in compliance with a "qualified community risk reduction plan," or that significance thresholds be used for both construction and operational emissions based on commonly used standards employed in health risk assessment. The following are thresholds for project-specific impacts: (1) an increase in lifetime cancer risk of 10 chances in one million, (2) an increase in the non-cancer risk equivalent to a chronic or acute "Hazard Index" greater than 1.0,[160] or (3) an increase in the annual average concentration of PM2.5 in excess of 0.3 micrograms per cubic meter. BAAQMD also recommends cumulative thresholds of 100-in-one-million cancer risk, a Hazard Index greater than 10.0, and a PM2.5 concentration greater than 0.8 micrograms per cubic meter. Unlike the volume-based thresholds for criteria air pollutants noted above, the toxic air contaminant thresholds are used for specific receptor locations when a risk analysis is required for specific project components, such as stationary sources (common in industrial operations) or the use of diesel-powered equipment, including construction equipment.

Approach to Analysis

The URBEMIS model was used to determine the proposed project's criteria air pollutant emissions as well as those from the two variants. A Health Risk Assessment was also conducted to determine if the proposed project would expose sensitive receptors to substantial levels of pollution. The results of these analyses are presented in an Air Quality Technical Report for this project (AQTR).[161] This methodology section summarizes the approaches, while more detail is provided in the impact analysis.

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159 *Ibid*.

160 Hazard Index represents the ratio of expected exposure levels to an acceptable reference exposure levels.

161 Donald Ballanti, Certified Consulting Meteorologist, *Air Quality Impact Report and Health Risk Assessment for the 801 Brannan and One Henry Adams Project* (AQTR), San Francisco, March 4, 2011, p. 4-5. This analysis is available for public review at the San Francisco Planning Department, 1650 Mission Street, Fourth Floor, San Francisco as part of Case File 2000.618E.

- Pave, apply water at a minimum three times daily in dry weather, or apply non-toxic soil stabilizers to all unpaved access roads, parking areas, and staging areas;
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas;
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public street areas;
- Hydroseed or apply non-toxic soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more);
- Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.);
- Limit traffic speeds on unpaved roads to 15 miles per hour;
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways;
- Replant vegetation in disturbed areas as quickly as possible;
- Install wheel washers for all exiting trucks, or wash off the tires of all trucks and equipment prior to leaving the site;
- Install wind breaks, or plant trees/vegetative wind breaks at windward side(s) of construction areas;
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph; and
- Limit the area subject to excavation, grading, and other construction activity at any one time.
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond shall respond and take corrective action within 48 hours. The Air District's phone number shall be visible to ensure compliance with applicable regulations.

Therefore, compliance with the Dust Control Ordinance would reduce construction dust that the proposed project, or either variant, would generate to a less-than-significant level.

The proposed project, or either variant, must also comply with California Occupational Safety and Health Administration (Cal/OSHA) regulations, standards and procedures and California Department of Health Services (DHS) Lead Work Practice Standards. These regulations are designed to minimize worker and general public exposure to hazardous building materials.

The above regulations and procedures, already established and enforced as part of the permit review process, would ensure that any potential air emissions impacts due to dust, asbestos, lead, PM10, PM2.5, or other hazardous materials associated with construction of the proposed project, or either variant, would be ***less than significant***.

Impact AQ-2: Construction emissions under the proposed project, or either variant, would not violate an air quality standard or contribute significantly to an existing or projected air quality violation. (Less than Significant)

The air quality technical report prepared for this project provides the results of construction criteria air pollutant emissions modeling conducted for the proposed project, or either variant, and these results are summarized below. Construction phasing and scheduling information obtained from the project sponsor was used to run the construction module of the URBEMIS-2007 model. The construction phasing for the 801 Brannan and One Henry Adams sites are different, so a separate construction analysis was performed for each site. Construction at the 801 Brannan site would involve demolition of a 137,000 square foot building and construction of 585 residential units along with 30,417 square feet of commercial space. Demolition and construction would occur over a 24-month period assumed to occur between fall 2012 and fall 2014. Construction at the One Henry Adams site would involve demolition of three buildings totaling 29,164 square feet and construction of 239 residential units along with 9,070 square feet of commercial space. Demolition and construction would occur over an 18-month period assumed to occur between fall 2012 and summer 2014. Construction phasing and activity under either variant would not differ substantially, if at all, from that of the proposed project.

The volume of construction debris for each phase was estimated based on the square footage and height of buildings. Default values in the URBEMIS Program for truck capacity and trip length were utilized. URBEMIS default values were also used for equipment types and numbers during each phase of construction. As directed by current BAAQMD CEQA guidance, a surrogate five percent reduction in off-road exhaust emissions of NOx, PM10, and PM2.5 was used to account for standard mitigation measures required of all projects.[166] The URBEMIS-2007 program calculated annual emissions for each year of construction. The totals for each site were added, and the maximum annual emissions was divided by the number of construction days (22 days per month, 260 per year) for the year to obtain the average daily construction emission in pounds per day. The volume of construction debris under either variant would be the same as under the proposed project.

Table 19 on the following page shows that the highest estimated average daily construction emissions of criteria air pollutants (ROG, NOx, PM10, PM2.5) in pounds per day over the three phases of construction would not exceed the project-level BAAQMD thresholds of significance, either singly or cumulatively. Therefore, construction emissions of criteria air pollutants under the proposed project, or either variant, would be ***less than significant***.

[166] BAAQMD, *CEQA Air Quality Guidelines*, June 2010, *op. cit*. Table 8-4, page 8-6 and Appendix B, page B-11.

Table 19
Average Daily Construction Emissions of Criteria Air Pollutants
(Pounds per Day)

	ROG	NOx	PM10	PM2.5
801 Brannan site	28.0	22.07	17.27	4.36
One Henry Adams site	20.50	13.63	6.45	1.81
Total	48.50	35.70	23.77	6.17
BAAQMD Threshold of Significance	**54.00**	**54.00**	**82.00**	**54.00**

Notes:
- ROG = Reactive Organic Gases
- NOx = Nitrogen Oxides
- PM10 = Particulate Matter, 10 microns
- PM2.5 = Particulate Matter, 2.5 microns

Source: Donald Ballanti, *Air Quality Impact Report and Health Risk Assessment for the 801 Brannan/1Henry Adams Project*, San Francisco, March 2011, Table 1.

Impact C-AQ-3: Construction of the proposed project, or either variant, would not violate air quality standards or generate a cumulatively considerable increase in criteria air pollutant emissions. (Less than Significant)

BAAQMD CEQA guidance indicates that if an action does not result in a significant impact, then it would not contribute considerably to a significant cumulative effect. During construction of the proposed project, the highest average daily emissions of criteria air pollutants would not exceed the BAAQMD thresholds of significance (see Table 19) and there are no other nearby proposals with overlapping construction schedules that would generate a cumulatively considerable increase in criteria air pollutant emissions. Therefore, construction of the project, or either variant, would not contribute considerably to a significant cumulative impact on criteria air pollutant emissions, and would result in a ***less-than-significant*** impact.

Impact AQ-4: Operation of the proposed project, or either variant, would violate air quality standards with respect to, or generate a cumulatively considerable increase in, criteria air pollutants. (Significant and Unavoidable)

Operational emissions associated with the proposed project were calculated using the URBEMIS-2007 program. URBEMIS-2007 is a program developed specifically to quantify mobile and area source emissions from projects in California. Inputs to the URBEMIS-2007 program include trip generation rates, vehicle mix, average trip length by trip type and average speed. Default trip lengths and average trip speeds for San Francisco County were used. Project trip generation estimates from the project transportation report were used. URBEMIS-2007 requires that a project size be input for each land use.

EXHIBIT 9

DRAFT ENVIRONMENTAL IMPACT REPORT

Transit Center District Plan and Transit Tower

PLANNING DEPARTMENT
CASE NO. **2007.0558E and 2008.0789E**

STATE CLEARINGHOUSE NO. 2008072073

SAN FRANCISCO
PLANNING
DEPARTMENT

	Draft EIR Publication Date:	**SEPTEMBER 28, 2011**
	Draft EIR Public Hearing Date:	**NOVEMBER 3, 2011**
	Draft EIR Public Comment Period:	**SEPTEMBER 28 THROUGH NOVEMBER 14, 2011**

Written comments should be sent to:
Environmental Review Officer | 1650 Mission Street, Suite 400 | San Francisco, CA 94103

In 1988, California passed the California Clean Air Act (California Health and Safety Code Sections 39600 et seq.), which, like its federal counterpart, called for the designation of areas as attainment or nonattainment, but based on state ambient air quality standards rather than the federal standards. As indicated in Table 32, the Bay Area Air Basin is designated as "nonattainment" for state ozone, PM_{10}, and $PM_{2.5}$ standards. The Air Basin is designated as "attainment" for all other pollutants listed in the table.

California Air Resources Board

CARB is the state agency responsible for regulating air quality. CARB's responsibilities include establishing state ambient air quality standards, emissions standards, and regulations for mobile emissions sources (e.g., autos, trucks, etc.), as well as overseeing the efforts of countywide and multi-county air pollution control districts, such as the BAAQMD, which have primary responsibility over stationary sources.

Bay Area Air Quality Management District

The BAAQMD regulates air quality through its planning and review activities. The district has permit authority over most types of stationary emission sources and can require stationary sources to obtain permits; it can also impose emission limits, set fuel or material specifications, or establish operational limits to reduce air emissions. The BAAQMD regulates new or expanding stationary sources of toxic air contaminants. However, the district has no direct regulatory authority over mobile sources (e.g., cars and trucks), nor does it have permit authority over transportation terminals, such as the new Transit Center, currently under construction to replace the Transbay Terminal.

Air Quality Plans to Achieve Compliance with State Standards

Air quality plans developed to meet federal requirements are referred to as State implementation Plans. The federal Clean Air Act and the California Clean Air Act require plans to be developed for areas designated as non-attainment (with the exception of areas designated as non-attainment for the State particulate matter standards plans for which are not required by California Code of Regulations). In September 2010, BAAQMD adopted the *2010 Bay Area Clean Air Plan*, which updated the *2005 Ozone Strategy*, and also to function as a "multi-pollutant plan to protect public health and the climate."[222] This plan includes ozone control measures and also consider the impacts of these control measures on particulate matter (PM), air toxics, and Greenhouse Gas Emissions (GHGs) in a single, integrated plan.

The *2010 Clean Air Plan* explains how the Basin will achieve compliance with the State one-hour air quality standard for ozone as expeditiously as practicable and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. The Strategy also discusses related air quality issues of interest including the BAAQMD's public involvement process, climate change, fine particulate matter, BAAQMD's Community Air Risk Evaluation program, local benefits of ozone control measures, the environmental review process, national ozone standards, and photochemical modeling.

222 BAAQMD, *2010 Clean Air Plan*, September 2010. Available on the internet at: http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx.

In 1999, BAAQMD adopted its *CEQA Guidelines – Assessing the Air Quality Impacts of Projects and Plans*, as a guidance document to provide lead government agencies, consultants, and project proponents with uniform procedures for assessing air quality impacts and preparing the air quality sections of environmental documents for projects subject to CEQA. These BAAQMD Guidelines were revised and updated in June 2010, as the *BAAQMD CEQA Air Quality Guidelines*.

The 2010 *BAAQMD CEQA Air Quality Guidelines* is an advisory document and local jurisdictions are not required to utilize the methodology outlined therein, but the document is commonly relied upon by local agencies, including the San Francisco Planning Department.[223] The document describes the criteria that BAAQMD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for use in determining whether projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. In practice, most local agencies rely on the *BAAQMD CEQA Air Quality Guidelines* when assessing the significance of air quality impacts.

Air Quality Plans to Achieve Compliance with Federal Standards

In response to the EPA re-designation of the basin for the 1-hour federal ozone standard to nonattainment, the BAAQMD, ABAG, and MTC were required to develop an ozone attainment plan to meet this standard. The *1999 Ozone Attainment Plan* was prepared and adopted by these agencies in June 1999. However, in March 2001, the EPA proposed and took final action to approve portions of the 1999 ozone plan and disapprove other portions, while also making the finding that the Bay Area had not attained the national 1-hour ozone standard. As a result, a revised Ozone Attainment Plan was prepared and adopted in October 2001. The 2001 Ozone Attainment Plan amends and supplements the 1999 plan. The 2001 Ozone Attainment Plan contains control strategies for stationary and mobile sources. The adopted mobile-source control program was estimated to substantially reduce volatile organic compound and NOx emissions between 2000 and 2006, reducing emissions from on- and off-road diesel engines (including construction equipment). In addition to emission reduction requirements for engines and fuels, the 2001 Ozone Attainment Plan identified 28 transportation control measures to reduce automobile emissions, including improved transit service and transit coordination, new carpool lanes, signal timing, freeway incident management, and increased state gas tax and bridge tolls.

San Francisco Policies and Ordinances

San Francisco General Plan Air Quality Element

The Air Quality Element of the *San Francisco General Plan* is composed of six sections, each of which focuses on different aspects of air quality improvement efforts. They are: (1) adherence to air quality standards, (2) improvements related to mobile sources, (3) land use planning, (4) public awareness, (5) reduction of dust, and (6) energy conservation. The overarching goal of the Air Quality Element is to "Give high priority to air quality improvement in San Francisco to protect its population from adverse

[223] BAAQMD, *CEQA Guidelines*, May 2011. See footnote 205, p. 370.

(2) Would the projected rate of increase in vehicle miles traveled or vehicle trips under the plan would be less than or equal to the projected rate of population increase under the plan.

If the two foregoing questions can be answered in the affirmative, the plan would neither:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation; nor
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).[228]

Community Risk and Hazard Impacts

This analysis also responds to the criterion that asks whether the proposed plan would:

- Expose sensitive receptors to substantial pollutant concentrations.

For plan-related health risks and hazards resulting from emissions of toxic air contaminants, BAAQMD recommends that overlay zones be established around existing and proposed land uses that emit TACs. These overlay zones should be included in proposed plan policies, land use maps, and implementing ordinances. Additionally, the plan must "identify goals, policies, and objectives to minimize potential impacts."[229]

Odors

For odors, a plan must identify the location of existing and planned odor sources in the Plan area. The plan must also include policies to reduce potential odor impacts in the Plan area. Typical odor sources of concern include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, and coffee roasting facilities. Given that the draft Plan would not locate sensitive receptors within close proximity to these types of facilities and would not include development of such facilities, it can be reasonably concluded that no odor impact would occur. Therefore, impacts related to odor are not discussed further in this EIR.

Transit Tower

Project level thresholds of significance set by the BAAQMD reflect the level at which a project's individual emissions would result in a cumulatively considerable contribution to an existing air quality problem; therefore, if project impacts identified are significant, impacts would also be cumulatively considerable. As stated in the BAAQMD *CEQA Air Quality Guidelines*:

> Past, present and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact.

[228] The bulleted statements are the first three significance criteria in the City's CEQA Initial Study checklist.
[229] BAAQMD *CEQA Air Quality Guidelines* (see footnote 205, p. 370); p. 9-71.

> No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.[230]

According to BAAQMD, no further cumulative analysis should be required beyond the analysis of whether a proposed project's impacts would contribute considerably to ambient levels of pollutants or greenhouse gases,[231] with the exception of the above-noted cumulative risk and hazard analysis for toxic air contaminants.

Criteria Air Pollutants

The BAAQMD-recommended significance thresholds for criteria pollutant emissions from operations of an individual project, such as the proposed Transit Tower, are as follows: for ROG, NOx and $PM_{2.5}$, a net increase of 54 pounds per day or 10 tons per year would be considered significant, while for PM_{10}, a net increase of 82 pounds per day or 15 tons per year would be considered significant. For CO, an increase would be considered significant if it leads to or contributes to CO concentrations exceeding the State Ambient Air Quality Standard, although quantification would not be required if a project is consistent with the local congestion management program and plans and traffic volumes at affected intersections are below 24,000 vehicles per hour. For construction-period impacts, the same thresholds apply for ROG, NOx, $PM_{2.5}$, and PM_{10}, except that the thresholds for $PM_{2.5}$ and PM_{10} apply only to exhaust emissions, and thresholds are specifically based on average daily emissions. There are no quantitative thresholds for construction dust emissions; instead, impacts are considered less than significant if standard best management practices are employed to control dust during construction activities, including demolition and excavation.

Community Risk and Hazard Impacts

With respect to risk and hazard impacts. BAAQMD recommends either that a project be found to be in compliance with a "qualified Community Risk Reduction Plan," or that significance thresholds be used for both construction and operational emissions based on commonly used standards employed in health risk assessment. The thresholds for project-specific impacts are: an increase in lifetime cancer risk of 10 chances in one million, an increase in the non-cancer risk equivalent to a chronic or acute "Hazard Index" greater than 1.0,[232] or an increase in the annual average concentration of $PM_{2.5}$ in excess of 0.3 micrograms per cubic meter. BAAQMD also recommends cumulative thresholds of 100 in one million cancer risk, a chronic Hazard Index greater than 10.0, and a $PM_{2.5}$ concentration greater than 0.8 micrograms per cubic meter. Unlike the volume-based thresholds for criteria pollutants noted above, the toxic air contaminant thresholds are used for specific receptor locations when a risk analysis is required for specific project components, such as permitted stationary sources (boilers, emergency generators, etc.), non-permitted sources such as the new Transit Center, or the use of diesel-powered

230 BAAQMD *CEQA Air Quality Guidelines* (see footnote 205, p. 370); p. 2-1.
231 *Ibid*.
232 Hazard Index represents the ratio of expected exposure levels to an acceptable reference exposure levels.

sources, and would also generate emissions of both criteria air pollutants and toxic air contaminants in construction equipment exhaust. Over the long term, the project would result in an increase in emissions primarily due to increased motor vehicle trips, as well as from operation of on-site stationary sources—in this case, a backup generator. Area sources (such as landscaping and use of consumer products) would result in lesser quantities of pollutant emissions.

Construction Air Quality Impacts

Impact AQ-6: Construction of the Transit Tower would result in emissions of criteria air pollutants, including ozone precursors, that would contribute to an existing or projected air quality violation or result in a cumulatively considerable increase in criteria pollutants, and could expose sensitive receptors to construction dust. (Less than Significant)

Demolition, grading and new construction activities would temporarily affect local air quality during the project's proposed 3-year construction schedule, causing temporary increases in particulate dust and other pollutants. Emissions generated from construction activities include combustion emissions of criteria air pollutants (reactive organic gases [ROG], nitrogen oxides [NOx], carbon monoxide [CO], sulfur oxides [SOx], and PM_{10} and $PM_{2.5}$) primarily from operation of construction equipment and worker vehicles, evaporative criteria pollutant emissions (ROG) from asphalt paving and architectural coating applications, and dust (including PM_{10} and $PM_{2.5}$) primarily from "fugitive" sources; that is, dust generated by construction activities and that escapes from the construction site.

Criteria Air Pollutants

Criteria pollutant emissions of ROG, NOx, PM_{10}, and $PM_{2.5}$ from construction equipment would incrementally add to the regional atmospheric loading of these pollutants during project construction. The BAAQMD *CEQA Air Quality Guidelines* recommend the quantification of project related exhaust emissions and comparison of the emissions to its new significance thresholds. Therefore, daily project construction exhaust emissions that would be associated with the proposed project have been estimated and are presented in **Table 34**.

As indicated in Table 34, emissions from project construction would not exceed the BAAQMD's significance thresholds. Even though construction-related emissions would not exceed the BAAQMD's significance thresholds for criteria pollutants, Implementation of Improvement Measure I-AQ-6 would further reduce the less-than-significant emissions from construction vehicles, and would be consistent with the BAAQMD's basic emissions control measures for all projects.

Improvement Measure

I-AQ-6 **Construction Vehicle Emissions Minimization:** To reduce construction vehicle emissions, the project sponsor shall incorporate the following into construction specifications:

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

TABLE 34
TRANSIT TOWER PROJECT CONSTRUCTION EXHAUST EMISSIONS ESTIMATES

	Estimated Daily Emissions (pounds per day)[a]			
Construction Phase and Year	**ROG**	**NOx**	**PM10[b]**	**PM2.5[b]**
2013	14.4	43.1	1.9	1.7
2014	2.9	12.1	0.6	0.6
2015	40.5	11.0	0.6	0.5
2016	37.18	0.0	0.0	0.0
BAAQMD Threshold	54	54	82	54
Significant?	No	No	No	No

[a] Project construction emissions estimates are based on output from URBEMIS 2007 v.9.2.4 air quality model, using the model's default assumptions. Assumes construction starts in mid-2013 and ends in mid-2016.
[b] Vehicle exhaust only.

SOURCE: Environmental Science Associates, 2011

Fugitive Dust

For fugitive dust, the BAAQMD recommends a "best management practices" approach for dust control. Project-related demolition, excavation, grading and other construction activities may cause wind-blown dust that could contribute particulate matter into the local atmosphere. Although there are federal standards for air pollutants and implementation of state and regional air quality control plans, air pollutants continue to have impacts on human health throughout the country. California has found that particulate matter exposure can cause health effects at lower levels than national standards. The current health burden of particulate matter demands that, where possible, public agencies take feasible available actions to reduce sources of particulate matter exposure. According to the California Air Resources Board, reducing ambient particulate matter from 1998 – 2000 levels to natural background concentrations in San Francisco would prevent over 200 premature deaths.

Dust can be an irritant causing watering eyes or irritation to the lungs, nose and throat. Demolition, excavation, grading and other construction activities can cause wind-blown dust to add to particulate matter in the local atmosphere. Depending on exposure, adverse health effects can occur due to this particulate matter in general and also due to specific contaminants such as lead or asbestos that may be constituents of soil.

In response, as noted under Regulatory Setting (p. 383), the San Francisco Board of Supervisors approved a series of amendments to the *San Francisco Building* and *Health Codes* generally referred hereto as the Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) with the intent of reducing the quantity of dust generated during site preparation, demolition and construction work in order to protect the health of the general public and of onsite workers, minimize public nuisance complaints, and to avoid orders to stop work by the Department of Building Inspection (DBI).

Level of Significance After Mitigation

Implementation of the above measure would result in the maximum feasible reduction of diesel emissions that would contribute to construction-period health risk, thereby lowering both lifetime cancer risk and the concentration of $PM_{2.5}$ to which receptors would be exposed. Furthermore, the above analysis indicates that use of interim Tier 4 diesel construction equipment or Tier 2/ Tier 3 equipment with Level 3 VDECS would reduce the health risk to a level that would not exceed any of the significance thresholds identified by the BAAQMD. It is also noted that construction emissions could be lower if newer equipment is employed or less powerful or smaller diesel equipment is used than assumed in the analysis. Emissions could also be higher if more or larger diesel equipment is used. Depending on the regulations in place at the time construction begins, and depending on the precise mix of diesel-powered construction equipment employed, it is possible that the impact would be reduced to a less-than-significant level. However, because it cannot be stated with certainty that either cancer risk or $PM_{2.5}$ concentration would be reduced to below the BAAQMD-recommended significance thresholds, and because of the uncertainty concerning the availability and feasibility of using construction equipment that meets the requirements of Mitigation Measure M-AQ-7, this impact is conservatively judged to be **significant and unavoidable**.

Operational Air Quality Impacts

Impact AQ-8: Operation of the proposed Transit Tower would not conflict with *2010 Clean Air Plan,* result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment, either individually or cumulatively. (Less than Significant)

Based on the project transportation analysis,[253] the proposed project would generate approximately 4,000 vehicle trips per day. Operational emissions from project traffic and from operation of the proposed building were calculated using the URBEMIS 2007 (version 9.2.4) model, and are presented in **Table 35**. As shown in Table 6, emission increases attributable to the proposed project would be substantially below the significance thresholds established by the BAAQMD. Therefore, the project's effects of regional criteria pollutant emissions would be less than significant.

The proposed project would be generally consistent with the San Francisco General Plan, as proposed for amendment by the draft Transit Center District Plan. Additionally, the General Plan, Planning Code, and City Charter implement various Transportation Control Measures identified in the 2010 Bay Area Clean Air Plan through the City's Transit First Program, bicycle parking requirements, transit development impact fees applicable to commercial uses, and other actions. The draft Plan would also be consistent with the Transportation Control Measures in the 2010 Clean Air Plan, as described in the analysis under Impact AQ-1, above, and the Transit Tower would be an integral part of the proposed Plan. In light of the above, the project would not make a considerable contribution to cumulative air quality impacts, nor

253 AECOM, *Transit Tower Transportation Impact Study* (see footnote 155, p. 276).

TABLE 35
TRANSIT TOWER ESTIMATED DAILY REGIONAL EMISSIONS (2016)

	Projected Emissions (Pounds per Day)[1,2]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area-Source Emissions	1.1	7.4	0.02	0.02
Mobile-Source (Vehicle) Emissions	23.7	26.5	55.1	10.4
TOTAL	24.7	33.9	55.1	10.4
BAAQMD Threshold	54	54	82	54

NOTES:
1 Emission factors were generated by the URBEMIS 2007 (v. 9.2.4) model for San Francisco County, and assume a default vehicle mix. All daily estimates are the average of summer and winter conditions. Traffic generated emissions based on trip generation from the project transportation study.
2 Columns may not total due to rounding.

SOURCE: Environmental Science Associates, 2011.

would it interfere with implementation of the 2010 Clean Air Plan, which is the applicable regional air quality plan developed to improve air quality and to effectively meet the state and federal ambient air quality standards.

Mitigation: None required.

Local Air Quality Impacts

Impact AQ-9: Operation of the proposed Transit Tower would not result in emissions of carbon monoxide that would exceed state or federal standards, either individually or cumulatively. (Less than Significant)

The San Francisco Bay Area Air Basin is designated as "attainment" for carbon monoxide (CO). As stated in the 2010 update of the BAAQMD *CEQA Air Quality Guidelines*, "Emissions and ambient concentrations of CO have decreased dramatically in the Bay Area Air Basin with the introduction of the catalytic converter in 1975. No exceedances of the CAAQS or NAAQS for CO have been recorded at nearby monitoring stations since 1991."[254] Accordingly, as noted in the Significance Criteria, BAAQMD states that CO impacts may be determined to be less than significant if a project is consistent with the applicable congestion management plan and would not increase traffic volumes at local intersections to more than 24,000 vehicles per hour, for locations, such as the project site, in heavily urban areas, where "urban canyons" formed by buildings tend to reduce air circulation. The project would be consistent with applicable congestion management planning and, as described under Impact AQ-1, above, the greatest

254 BAAQMD *CEQA Air Quality Guidelines* (see footnote 205, p. 370); p. 6-1.

EXHIBIT 10

Volume 2
Draft Environmental Impact Report

&

San Francisco Planning Department Case No. 2010.0493E
State Clearinghouse No. 2011022040

Draft EIR Publication Date: July 11, 2011
Draft EIR Public Hearing Date: August 11, 2011
Draft EIR Public Comment Period: July 11, 2011 – August 25, 2011

Written comments should be sent to the
Environmental Review Officer
1650 Mission Street, Suite 400
San Francisco, CA 94103

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Table 5.8-2. California ambient standards tend to be at least as protective as national ambient standards and are often more stringent.

In 1988, California passed the California Clean Air Act (California Health and Safety Code Sections 39600 et seq.), which, like its federal counterpart, called for the designation of areas as attainment or nonattainment, but based on state ambient air quality standards rather than the federal standards. As indicated in Table 5.8-2, the Bay Area Air Basin is designated as "nonattainment" for state ozone, PM_{10}, and $PM_{2.5}$ standards. The Bay Area Air Basin is designated as "attainment" for most other pollutants listed in the table.

The California Clean Air Act requires that air districts in which state air quality standards are exceeded prepare a plan that documents reasonable progress towards attainment. A three-year update is required. In the Bay Area, this planning process is incorporated into the BAAQMD Clean Air Plan, as discussed in Section 5.8.2.3, Local Regulations, below under Regional Air Quality Planning.

5.8.2.3 Local Regulations

Regional Air Quality Planning

The BAAQMD is the regional agency responsible for air quality regulation within the San Francisco Bay Area Air Basin. The BAAQMD regulates air quality through its planning and review activities and has permit authority over most types of stationary emission sources. The BAAQMD can require stationary sources to obtain permits, and can impose emission limits, set fuel or material specifications, or establish operational limits to reduce air emissions. The BAAQMD regulates new or expanding stationary sources of toxic air contaminants.

For state air quality planning purposes, the Bay Area is classified as a serious nonattainment area for ozone. The "serious" classification triggers various plan submittal requirements and transportation performance standards. One such requirement is that the BAAQMD updates the *Clean Air Plan* (CAP) every three years to reflect progress in meeting the air quality standards and to incorporate new information regarding the feasibility of control measures and new emission inventory data. The Bay Area's record of progress in implementing previous measures must also be reviewed. On September 15, 2010, the BAAQMD adopted the most recent revision to the CAP—the 2010 CAP. The goals of the 2010 CAP are to:

- Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
- Consider the impacts of ozone control measures on PM_{10} and $PM_{2.5}$, TACs, and greenhouse gases (GHGs) in a single, integrated plan;
- Review progress in improving air quality in recent years; and
- Establish emission control measures to be adopted or implemented in the 2009–2012 timeframe.

In June 2010, BAAQMD issued its *CEQA Air Quality Guidelines*, replacing former guidelines adopted in December 1999, and adopted new thresholds of significance (BAAQMD Thresholds) to assist lead agencies in determining when potential air quality impacts would be considered significant under CEQA. Updated in May 2011,[20] these guidelines include recommendations for analytical methodologies to determine air quality impacts and identify mitigation measures that can be used to avoid or reduce air quality impacts. The analysis herein uses the BAAQMD Thresholds and the *CEQA Air Quality Guidelines* to determine the proposed project's significance with respect to air pollutant emissions.

Local Air Quality Planning

San Francisco General Plan Air Quality Element

The *San Francisco General Plan* (General Plan) includes the 1997 Air Quality Element.[21] The objectives specified by the City include the following:

> *Objective 1*: Adhere to state and federal air quality standards and regional programs.
>
> *Objective 2*: Reduce mobile sources of air pollution through implementation of the Transportation Element of the General Plan.
>
> *Objective 3*: Decrease the air quality impacts of development by coordination of land use and transportation decisions.
>
> *Objective 4*: Minimize particulate matter emissions from road and construction sites.
>
> *Objective 5*: Link the positive effects of energy conservation and waste management to emission reductions.

San Francisco Construction Dust Control Ordinance

San Francisco Health Code Article 22B and San Francisco Building Code Section 106.A.3.2.6, which collectively comprise the Construction Dust Control Ordinance, require that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from the Department of Building Inspection (DBI).

Pursuant to Health Code Article 22B, Section 1247, all departments, boards, commissions, and agencies of the City and County of San Francisco — including the Port of San Francisco — that authorize construction or improvements on land under their jurisdiction under circumstances where no building, excavation, grading, foundation or other permits are required to be obtained under the San Francisco Building Code shall adopt rules and regulations to ensure that the same dust control requirements that are set forth in this article are followed.

[20] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, updated May 2011.

[21] San Francisco Planning Department, Air Quality Element of the *San Francisco General Plan*, July 1997, updated in 2000.

Dust suppression activities may include watering of all active construction areas sufficiently to prevent dust from becoming airborne; increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the San Francisco Public Works Code. If not required, reclaimed water should be used whenever possible. Contractors shall provide as much water as necessary to control dust (without creating runoff in any area of land clearing and/or earth movement). During excavation and earth-moving activities, contractors must wet sweep or vacuum the streets, sidewalks, paths, and intersections where work is in progress at the end of the work day. Inactive stockpiles (where no disturbance occurs for more than seven days) greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base and soil must be covered with a 10-millimeter (0.01-inch) polyethylene plastic (or equivalent) tarp, braced down, or other equivalent soil stabilization techniques must be used.

For project sites greater than one-half acre in size, the ordinance requires that the project sponsor submit a Dust Control Plan for approval by the San Francisco Health Department. Interior-only tenant improvements, even if over one-half acre, that will not produce exterior visible dust are exempt from the site-specific Dust Control Plan requirement.

San Francisco Health Code Provisions

The City and County of San Francisco adopted Article 38 of the San Francisco Health Code in 2008, requiring that an Air Quality Assessment be prepared for new residential projects of ten or more units located in proximity to high-traffic roadways, as mapped by the Department of Public Health, to determine whether residents would be exposed to potentially unhealthful levels of $PM_{2.5}$.

San Francisco Clean Construction Ordinance

The San Francisco Board of Supervisors adopted the Clean Construction Ordinance in 2007, which became effective in 2009. The Clean Construction Ordinance is implemented for public works projects in the City of San Francisco or City-financed construction projects. The ordinance amended the Administrative Code to add Section 6.25 to require City contractors to adopt clean construction practices including use of biodiesel fuels and emission controls. The ordinance also requires departments that are authorized to award contracts to compare bids on the basis that the work will be performed using cleaner off-road diesel equipment and biodiesel fuel. The proposed projects would be subject to the Clean Construction Ordinance.

5.8.3 Impacts and Mitigation Measures

5.8.3.1 Significance Criteria

The City has not formally adopted significance standards for impacts related to air quality, but generally considers that implementation of the project could have a potentially significant impact related to air quality if it were to:

- Conflict with or obstruct implementation of the applicable air quality plan;

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

As described above, the BAAQMD issued CEQA Air Quality Guidelines,[22] including Air Quality CEQA Thresholds of Significance, in June 2010 and updated them in May 2011. These guidelines provide reference thresholds for considering whether a project would have a significant air quality impact. The guidelines, published for assessing impacts relative to these thresholds, also provide recommended procedures for evaluating potential air quality impacts during the environmental review process. Additionally, the BAAQMD has adopted new risk and hazard exposure thresholds for the siting of new sensitive receptors that apply to projects for which the Notice of Preparation (NOP)was issued*)* and environmental analysis began subsequent to May 1, 2011. However, neither the proposed AC34 events nor the proposed cruise terminal would permanently locate a new sensitive receptor, and this threshold is not applicable to the proposed projects. The following analysis has been conducted in accordance with BAAQMD's *CEQA Air Quality Guidelines* (May 2011).

AC34 Event and Cruise Terminal Construction Impact Criteria

Under the BAAQMD CEQA thresholds, a project would have a significant air quality impact if it would result in average daily construction-related emissions of ROG, NOx, or $PM_{2.5}$ (non-inclusive of fugitive dust[23]) of 54 pounds (25 kilograms) average daily emissions or greater. There is a separate emission threshold for PM_{10} (non-inclusive of fugitive dust[24]) of 82 pounds (37 kilograms) average daily emissions. The thresholds for PM_{10} and $PM_{2.5}$ are inclusive only of construction exhaust emissions. BAAQMD guidance regarding construction-related emission of fugitive dust identifies implementation of best management practices as its threshold of significance.[25] The BAAQMD *CEQA Air Quality Guidelines* identify a list of eight "Basic Construction Mitigation Measures Recommended for All Proposed Projects" and consider implementation of these measures as meeting the best management practices requirements for fugitive dust emissions.[26]

[22] BAAQMD, *CEQA Air Quality Guidelines*, May 2011, http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines%20May%202011.ashx.
[23] Fugitive dust consists of very small liquid and solid particulate matter that is suspended in the air by the wind and human activities. Fugitive dust originates primarily from the soil.
[24] Fugitive dust is PM suspended in the air by the wind and human activities. It originates primarily from the soil and is not emitted from exhaust pipes, vents, or stacks.
[25] BAAQMD, *CEQA Air Quality Guidelines*, Table 2-1.
[26] BAAQMD, *CEQA Air Quality Guidelines*, Table 8-2.

The 2010 BAAQMD CEQA thresholds indicate that a project would also have a significant air quality impact if construction activities would result in an incremental increase in localized annual average concentrations of $PM_{2.5}$ exceeding 0.3 micrograms per cubic meter ($\mu g/m^3$) within a 1,000-foot radius from the property line of the construction area or a receptor. A project would also have a significant air quality impact if it would expose persons to substantial levels of TACs (including DPM), such that the probability of contracting cancer for the Maximally Exposed Individual (MEI)[27] exceeds 10 in one million or if it would expose persons to TACs such that a non-cancer Hazard Index of 1.0 would be exceeded. A Hazard Index is a summation of the non-cancer hazard quotients for all chemicals to which an individual is exposed.

AC34 Event and Cruise Terminal Operational Impact Criteria

For the AC34 event and Cruise Terminal project impact operational analyses, the 2011 BAAQMD *CEQA Air Quality Guidelines* include various thresholds and tests of significance. For ROG, NOx, and $PM_{2.5}$, a net increase equal to or greater than 10 tons per year (maximum annual) or 54 pounds average daily emissions is considered significant, while for PM_{10} a net increase equal to or greater than 15 tons per year (maximum annual) or 82 pounds average daily emissions is considered significant.

For CO emissions, an increase would be considered significant if it leads to or contributes to CO concentrations exceeding the state ambient air quality standard, although quantification would not be required if a project is consistent with the local congestion management program and plans and traffic volumes at affected intersections are below 44,000 vehicles per hour or 24,000 vehicles per year in tunnel-like conditions.

Under the 2010 BAAQMD thresholds, project operations would also have a significant air quality impact if they would result in an incremental increase in localized annual average concentrations of $PM_{2.5}$ exceeding 0.3 micrograms per cubic meter.

Additionally, a project would also have a significant air quality impact if project operations would expose persons to substantial levels of TACs, such that the probability of contracting cancer for the MEI exceeds 10 in one million or if the project would expose persons to TACs such that a non-cancer Hazard Index of 1.0 would be exceeded.

Cumulative Impact Criteria

The 2011 BAAQMD *CEQA Air Quality Guidelines* state that if the individual emissions from a project would result in an increase in ROG, NOx, $PM_{2.5}$, or PM_{10} that exceeds the project-level significance criteria, then the project would also be considered to contribute considerably to a significant cumulative effect. Cumulative air quality impacts relative to emissions of $PM_{2.5}$ and TACs are new concepts contained in BAAQMD's updated thresholds.

[27] The Maximally Exposed Individual is the person with the highest exposure in a given population.

With regard to cumulative impacts from $PM_{2.5}$, a significant cumulative air quality impact would occur if localized annual average concentrations of $PM_{2.5}$ would exceed 0.8 micrograms per cubic meter at any receptor from project operations in addition to existing emission sources and cumulative emissions sources within a 1,000-foot radius of the property line of the source or receptor.

With regard to cumulative impacts from TACs, a significant cumulative air quality impact would occur if the probability of contracting cancer for the MEI would exceed 100 in one million or if the project would expose persons to TACs such that a non-cancer chronic Hazard Index of 10.0 would be exceeded at any receptor as a result of project operations, in addition to existing emission sources and cumulative emissions sources within a 1,000-foot radius of the project site.

However, a project's construction or operational impacts would be considered to result in a considerable contribution to an identified cumulative health risk impact if the project's construction or operation activities would exceed the project-level health risk significance thresholds identified above.

5.8.3.2 Approach to Analysis

The air quality impact analysis is organized to address potential impacts from the AC34 events and the Cruise Terminal project separately. Construction and operational emissions are assessed individually as recommended by BAAQMD guidance. Cumulative air quality impacts are discussed with regard to the near-term cumulative construction and operational impacts of the AC34 venues and pier improvements including near-term construction-related effects of the cruise terminal. The cruise terminal would be completed and in operation after the AC34 events end, and long-term (year 2035) operational cumulative impacts are assessed only with respect to the cruise terminal.

Evaluation of air quality impacts from operational and construction air emission sources of the proposed projects under the BAAQMD *CEQA Air Quality Guidelines* requires the quantification of the estimated mass emissions of criteria air pollutants such as ROG, NO_x, PM_{10}, and $PM_{2.5}$. In addition, an evaluation of potential human health effects from the emission of specific toxic air contaminants (TACs) present in the ROG or PM emissions is also required. The following sections describe the emissions estimation, air dispersion modeling, and risk characterization methodologies that were used to evaluate project-related emissions.

Analytical Approach for Construction Emissions

Construction exhaust emissions of criteria air pollutants and toxic air contaminants (TACs, in order to evaluate health risks and hazards) were estimated by first collecting extensive information on all of the different types of air emissions sources involved in project construction and the level of activity anticipated from these sources during each phase of construction. This information was then combined with emission factors applicable to each source type to generate

Impact AQ-2: Construction of the America's Cup facilities would result in emission of criteria pollutants and precursors that would violate an air quality standard or contribute substantially to an existing or projected air quality violation. (Significant and Unavoidable with Mitigation)

A number of temporary and some permanent facilities would be constructed in preparation for the America's Cup events at various locations as described in Chapter 3, Project Description.

Demolition of existing structures would occur at Piers 27-29 and Piers 30-32 in 2012. Installation of temporary floating docks would occur at Piers 30-32, Pier 80, and Marina Green for the AC34 2012 events. Other construction activities in 2012 would include construction of the new cruise terminal building "cold shell" and paving/concrete improvements at Piers 27-29, and installation of the team base at Piers 30-32 and/or Pier 80. Emissions would also result from construction and erection of facilities at spectator locations. For the AC34 2013 events, construction of temporary floating docks and/or wave attenuators would occur at several locations (e.g., Piers 30-32, 32-36, 27-29, 26-28, 23, and 1; Piers 9-15 water basin; Rincon Point Open Water Basin; Piers 17-19; and Fort Mason). Mooring anchoring would be installed at Brannan Street Wharf Open Water Basin and Piers 27-29, and dredging would occur at Brannan Street Wharf Open Water Basin and Pier 28. The team base would remain at Piers 30-32. In addition, all temporary floating docks, wave attenuators, the communications barge, associated pilings and mooring anchoring, and the Pier 80 and Piers 30-32 team bases would be removed in 2013 after completion of the AC34 events. Phase 2 buildout of the new cruise terminal at Piers 27-29 would also start at the end of 2013 for proposed operation of the new cruise terminal in 2014, the impacts of which are addressed in Impacts AQ-9 and AQ-10, below, relative to the Cruise Terminal project.

Criteria and ozone precursor pollutant (NOx, ROG, PM_{10}, $PM_{2.5}$) emissions from construction equipment exhaust would incrementally add to the regional atmospheric loading of these pollutants during project construction. The BAAQMD *CEQA Air Quality Guidelines* recommend the quantification of project-related criteria pollutant exhaust emissions from construction, separate from operational emissions, and comparison with significance thresholds included in the guidelines. Daily engine exhaust emissions from construction activities associated with the proposed project are compared with emission BAAQMD significance thresholds in **Table 5.8-5**. Emissions were estimated separately for construction scheduled to occur in 2012 and 2013 and then combined. Total construction emissions were divided by the number of construction days to derive average daily emissions for comparison against BAAQMD significance threshold levels. The BAAQMD construction significance thresholds for criteria pollutants are established in terms of average daily emissions, and this is how emissions are reported in Table 5.8-5.

The emissions presented in Table 5.8-5 would be generated by many different construction sources including off-road construction equipment such as loaders, backhoes, pile drivers, and cranes; in-water construction sources such as assist tugs, barges and dredge equipment; and on-road trucks. The predominant source of emissions would be off-road equipment, which would generate approximately double the emissions of in-water construction sources at most locations, except those where dredging would occur; in dredging locations, in-water construction would be the predominant emissions source. At all locations, emissions from on-road trucks would be substantially lower than emissions from either off-road or water sources.

TABLE 5.8-5
AC34 AVERAGE DAILY CONSTRUCTION-RELATED EMISSIONS

	Average Daily Construction Emissions (pounds/day)			
	ROG	**NOx**	**PM10**	**PM2.5**
Cruise Terminal Phase I and AC34 Construction				
Demolition at Piers 27-29	0.2	1.3	0.1	0.05
Shell Construction Piers 27-29	16	90	7	6
AC34 Venue Construction	8	69	4	3
Total[a]	24	160	10	10
BAAQMD Threshold	54	54	82	54
Above Threshold?	No	Yes	No	No

NOTES:

[a] The total emissions may not sum precisely due to rounding of subtotals.

SOURCE: ENVIRON, 2011

Construction of the America's Cup facilities would result in emission of criteria pollutants and precursors that, with the exception of NOx, would be at levels below the BAAQMD thresholds of significance. However, the estimated construction emissions of NOx would exceed the BAAQMD significance threshold, resulting in a significant air quality impact.

Impact Summary

Construction of the America's Cup facilities would result in emission of NOx that would exceed BAAQMD thresholds of significance, a *significant* impact. Implementation of **Mitigation Measure M-AQ-2a** (Construction Vehicle Emissions Minimization) and **M-AQ-2b** (Off-Road Construction Equipment), requiring use of off-road equipment that meets the most stringent U.S. EPA standards, as available, and the requirements specified under the Clean Construction Ordinance would reduce the severity of the impact. However, as discussed below, the ability of the mitigation measures to reduce the impact to less than significant depends on the feasibility of implementing the measures.

A discussion of available mitigation and associated feasibility of implementation is presented with the mitigation measures below. The results indicate that limited emission reduction would be expected due to lack of available feasible mitigation. Therefore, this impact would remain *significant and unavoidable with mitigation*.

Mitigation Measure M-AQ-2a: Construction Vehicle Emissions Minimization

To reduce construction vehicle emissions, the project sponsors shall incorporate the following into construction specifications:

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure, Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

Operational Impacts

Impact AQ-4: Operations of the America's Cup facilities would violate an air quality standard or contribute substantially to an existing or projected air quality violation. (Significant and Unavoidable with Mitigation)

Operations of the America's Cup events during 2012 and 2013 would involve a wide variety of activities, both on water and on land, as well as helicopter activities. On-water activities would include boat and yacht trips (e.g., race-sponsored spectator vessels, race support vessels, small and large private spectator boats, and assist tugs). Boat lifts would be used at several locations. On-land activities would include generators and other equipment used at race-sponsored viewing sites and on-road vehicle trips. Helicopters would be used for broadcasting and media operations and would follow each race route. In addition, the increase in cruise ship emissions at Pier 27 during 2013 associated with the loss of the shore power hookup (which would be relocated and disconnected until completion of the AC34 events at Piers 27-29) during the America's Cup are included in the AC34 operational emissions total. No existing emissions were assumed for the AC34 event itself, as all emissions associated with the event were assumed to be new, additional emissions.

Criteria and ozone precursor pollutant (ROG, CO, NOx, PM_{10}, and $PM_{2.5}$) emissions associated with these activities were estimated for 2012 and 2013 using methods and data sources described previously and in Appendix AQ. Emissions for 2012 and 2013 were summed and divided by the total number of days of race operations to determine daily average emissions that were then compared with BAAQMD *CEQA Air Quality Guidelines* threshold levels as presented in **Table 5.8-7**. Because a variety of activities would occur throughout the AC34 event period, the number of days of "race operations" in each year was determined on the basis of the length of time that major operations are scheduled to take place (assumed to be 20 days in 2012 and 50 days in 2013 for vessel and on-road traffic and 80 days in 2012 and 90 days in 2013 for other sources), not simply the number of days on which actual races are scheduled.

As shown in Table 5.8-7, estimated average daily emissions of ROG, NOx, PM_{10}, and $PM_{2.5}$ would exceed the BAAQMD significance thresholds. Over 90 percent of daily PM and daily ROG emissions shown in Table 5.8-7 are attributable to operation of private spectator and race-support vessels. Daily emissions of NOx have substantial contributions from all sources except assist tugs.

Annual emissions from AC34 operations in 2012 and 2013 were also tabulated and compared to the BAAQMD threshold levels shown in Table 5.8-7. Emissions of ROG, NOx, PM_{10}, and $PM_{2.5}$ are predicted to exceed the BAAQMD significance thresholds. As per the above discussion of daily average emissions, over 90 percent of the annual ROG and particulate emissions would be generated by private spectator and race-support vessel operations.

America's Cup operations would result in emission of criteria pollutants and precursors that could exceed BAAQMD thresholds of significance for NOx, ROG, PM_{10}, and $PM_{2.5}$; this would be a significant air quality impact.

TABLE 5.8-7
AC34 AVERAGE DAILY AND MAXIMUM ANNUAL OPERATIONAL EMISSIONS

	Average Daily Emissions (pounds/day)			
	ROG	**NOx**	**PM10**	**PM2.5**
Race Operations				
Race Sponsored Vessels	9	102	4	4
Race Support Vessels	875	104	155	143
Small Private Vessels	1,272	198	212	195
Large Private Vessels	22	244	10	10
Assist Tugs	0	1	0	0
Other Sources[a]	21	174	5	5
Shoreside Power Temporary Decommissioning (2013)	4	94	2	2
Overall Spectator Traffic	30	62	4	4
Total Overall (2012+2013)	2,233	979	392	362
BAAQMD Threshold	54	54	82	54
Above Threshold?	Yes	Yes	Yes	Yes

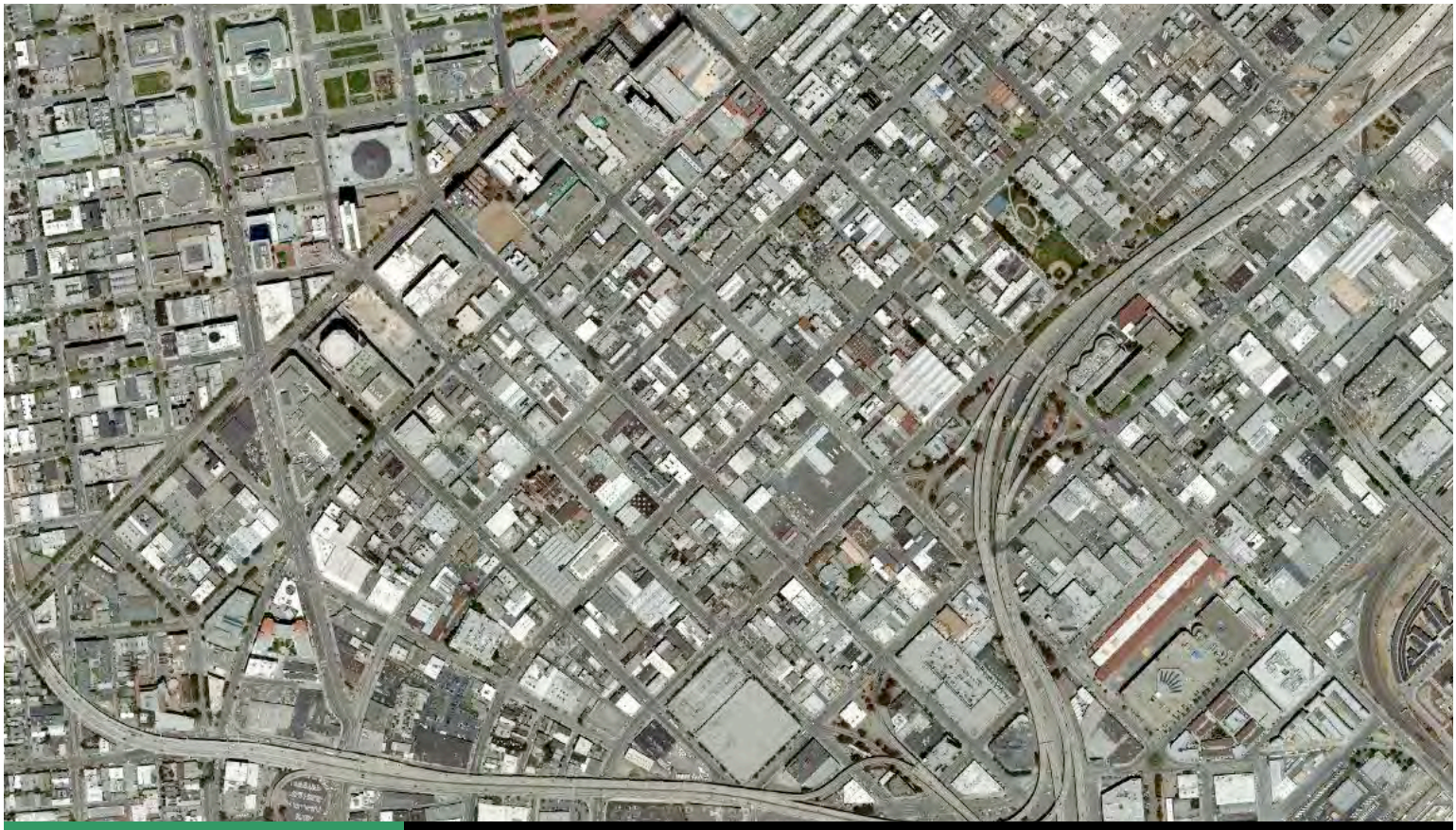
	Maximum Annual Emissions (short tons/year)			
	ROG	**NOx**	**PM10**	**PM2.5**
2012 Race Operations				
Race Sponsored Vessels	1	6	0	0
Race Support Vessels	37	4	6	6
Small Private Vessels	83	12	13	12
Large Private Vessels	0	0	0	0
Assist Tugs	0	0	0	0
Other Sources[a]	1	8	0	0
Spectator Traffic	2	4	0	0
2012 Total	124	35	20	18
BAAQMD Threshold	10	10	15	10
Above Threshold?	Yes	Yes	Yes	Yes
2013 Race Operations				
Race Sponsored Vessels	1	17	1	1
Race Support Vessels	157	19	28	26
Small Private Vessels	200	32	34	31
Large Private Vessels	5	54	2	2
Assist Tugs	0	0	0	0
Other Sources[a]	4	31	1	1
Shoreside Power Temporary Decommissioning (2013)	1	21	0	0
Spectator Traffic	5	10	1	1
2013 Total	372	183	67	62
BAAQMD Thresholds	10	10	15	10
Above Threshold?	Yes	Yes	Yes	Yes

NOTES:
BAAQMD = Bay Area Air Quality Management District

[a] Other sources include boat lifts, generators, helicopters, and truck trips.

SOURCE: ENVIRON, 2011

EXHIBIT 11



DRAFT ENVIRONMENTAL IMPACT REPORT

Western SoMa Community Plan, Rezoning of Adjacent Parcels, and 350 Eighth Street Project

PLANNING DEPARTMENT
CASE NOS. 2008.0877E AND 2007.1035E
STATE CLEARINGHOUSE NO. 2009082031

SAN FRANCISCO
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DEPARTMENT

Draft EIR Publication Date:	JUNE 20, 2012
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Written comments should be sent to:
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ENVIRONMENTAL PLANNING | SAN FRANCISCO PLANNING DEPARTMENT

Impacts and Mitigation Measures

Significance Criteria

In 1999, the BAAQMD adopted its *CEQA Guidelines – Assessing the Air Quality Impacts of Projects and Plans*, as a guidance document to provide lead government agencies, consultants, and project proponents with uniform procedures for assessing air quality impacts and preparing the air quality sections of environmental documents for projects subject to CEQA. These BAAQMD guidelines were revised and updated in May 2011 and May 2012, as the *BAAQMD CEQA Air Quality Guidelines*.

The 2011 *CEQA Air Quality Guidelines* is an advisory document intended to assist lead agencies in evaluating the air quality impacts of projects and plans in the Air Basin during the environmental review process.[29] The document describes the criteria that the BAAQMD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for use in determining whether projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. In practice, most local agencies rely on the *BAAQMD CEQA Air Quality Guidelines* when assessing the significance of air quality impacts.

BAAQMD's adoption of the significance thresholds for CEQA air quality analysis is the subject of recent judicial actions. In a ruling dated March 5, 2012, Alameda County Superior Court Judge Frank Roesch found that, in adopting updated significance thresholds for air quality impacts, the BAAQMD violated CEQA by not first studying the potential environmental impacts of its new rules, and required that the thresholds be rescinded pending formal CEQA review.[30]

Western SoMa Community Plan and Rezoning of Adjacent Parcels

Criteria Air Pollutants

The significance thresholds for assessment of a planning document, such as the proposed *Western SoMa Community Plan* and the Rezoning of Adjacent Parcels, involve an evaluation of whether:

(1) The plan would be consistent with the control measures contained in the current regional air quality plan (the *2010 Clean Air Plan*) and would support the primary objectives of that plan and would not hinder implementation of that plan; and

(2) The projected rate of increase in vehicle miles traveled or vehicle trips under the plan would be less than or equal to projected rate of population increase under the plan.

If the two foregoing questions can be answered in the affirmative, the Draft Plan would neither:

- Conflict with or obstruct implementation of the applicable air quality plan;

[29] BAAQMD, *CEQA Air Quality Guidelines*, May 2012. Available online at http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en, accessed on June 13, 2012; p 1-1.

[30] *California Building Industry Association v. Bay Area Air Quality Management District*, 2012. Statement of Decision. Case No. RG10-548693. Superior Court of the State of California in and for the County of Alameda.

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation; nor
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).[31]

Community Risk and Hazard Impacts

This analysis responds to the criterion that asks whether the proposed Draft Plan would:

- Expose sensitive receptors to substantial pollutant concentrations.

For plan-related health risks and hazards resulting from emissions of TACs, the BAAQMD *CEQA Air Quality Guidelines* (2011) recommend that overlay zones be established around existing and proposed land uses that emit TACs and $PM_{2.5}$. These overlay zones should be included in proposed plan policies, land use maps, and implementing ordinances. Additionally, the plan must "identify goals, policies, and objectives to minimize potential impacts."[32]

Odors

The Proposed Project would result in a significant impact with respect to odors if it would:

- Create objectionable odors affecting a substantial number of people.

For odors, a proposed land use plan must identify the location of existing and planned odor sources. The proposed land use plan must also include policies to reduce potential odor impacts. Typical odor sources of concern include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, and coffee roasting facilities. BAAQMD identifies a screening distance for new sources of potential odors, such as wastewater treatment plants, landfills and transfer stations, refineries, asphalt and chemical plants, food processing facilities, and the like, of 1 or 2 miles, depending on use. In general, such setback distances would avoid the potential for significant odor impacts.

Proposed Transportation Improvements and 350 Eighth Street Project

For the proposed transportation improvements to be undertaken in the Draft Plan Area and for an individual development project such as the 350 Eighth Street project, the City relies on the quantitative thresholds of significance. **Table 4.G-3**, on the following page, summarizes these thresholds of significance. A discussion of each threshold is provided below.

[31] The bulleted statements are the first three significance criteria in the City's CEQA Initial Study checklist.
[32] BAAQMD, *CEQA Air Quality Guidelines*, May 2011. Available online at http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx, accessed on April 19, 2012; p. 9-71.

TABLE 4.G-3
AIR QUALITY SIGNIFICANCE THRESHOLDS

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82	82	15
$PM_{2.5}$	54	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	10 per 1 million	10 per 1 million	
Chronic or Acute Hazard Index	1.0	1.0	
Incremental annual average $PM_{2.5}$	0.3 $\mu g/m^3$	0.3 $\mu g/m^3$	
Health Risks and Hazards for Sensitive Receptors (Cumulative from all sources within 1,000 foot zone of influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	100 per 1 million		
Chronic Hazard Index	10.0		
Annual Average $PM_{2.5}$	0.8 $\mu g/m^3$		

ppm – parts per million
µg/m3 – microgram per cubic meter

SOURCE: San Francisco Planning Department, 2012.

Ozone Precursors

As discussed previously, the Air Basin is currently designated as nonattainment for ozone and particulate matter (PM_{10} and $PM_{2.5}$). The potential for a project to result in a cumulatively considerable net increase in criteria air pollutants, which may contribute to an existing or projected air quality violation, is based on the state and federal Clean Air Acts' emissions limits for stationary sources. The federal New Source Review program was created under the federal Clean Air Act to ensure that stationary sources of air pollution are constructed in a manner that is consistent with attainment of federal health based ambient air quality standards. Similarly, to ensure that new stationary sources do not cause or contribute to a violation of an air quality standard, BAAQMD Regulation 2, Rule 2 requires that any new source that emits criteria air pollutants above a specified emissions limit must offset those emissions. For ozone precursors, ROG and NO_x, the offset emissions level is an annual average of 10 tons per year (or 54 lbs. per day).[33] These levels represent emissions 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.

[33] BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*. October 2009; p. 17.

Although this regulation applies to new or modified stationary sources, land use development projects result in ROG and NO_x emissions as a result of increases in vehicle trips, architectural coating, and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of land use projects and those projects that result in emissions below these thresholds, would not be considered to contribute to an existing or projected air quality violation or result in a cumulatively considerable net increase in ROG and NO_x emissions. Because construction activities are temporary in nature only the average daily thresholds are applicable to construction phase emissions.

Particulate Matter (PM_{10} and $PM_{2.5}$)

The BAAQMD has not established an offset limit for $PM_{2.5}$ and the current federal Prevention of Significant Deterioration (PSD) offset limit of 100 tons per year for PM_{10} is too high and would not be an appropriate significance threshold for the Bay Area considering the nonattainment status of PM_{10}. However, the federal New Source Review emissions limits for stationary sources in nonattainment areas provide for appropriate thresholds. For PM_{10} and $PM_{2.5}$, the emissions limit under New Source Review is 15 tons per year (82 pounds per day) and 10 tons per year (54 pounds per day), respectively. These emissions limits represent levels at which a source is not expected to have an impact on air quality.[34] Similar to ozone precursor thresholds identified above, land use development projects typically result in particulate matter emissions as a result of increases in vehicle trips, space heating and natural gas combustion, landscape maintenance, and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of a land use project. Those projects that result in emissions below the New Source Review emissions limits would not be considered to contribute to an existing or projected air quality violation or result in a cumulatively considerable net increase in PM_{10} and $PM_{2.5}$ emissions. Because construction activities are temporary in nature only the average daily thresholds are applicable to construction-phase emissions.

Other Criteria Pollutants

Regional concentrations of CO in the Bay Area have not exceeded the state standards in the past 11 years and SO_2 concentrations have never exceeded the standards. The primary source of CO emissions from land use projects is vehicle traffic. Construction-related SO_2 emissions represent a negligible portion of the total basin-wide emissions and construction-related CO emissions represent less than five percent of the Bay Area total basin-wide CO emissions.[35] As discussed previously, the Bay Area is in attainment for both CO and SO_2. Furthermore, the BAAQMD has demonstrated, based on modeling, that in order to exceed the California ambient air quality standard of 9.0 ppm (8-hour average) or 20.0 ppm (1-hour average) for CO, project traffic in addition to existing traffic would need to exceed 44,000 vehicles per hour at affected intersections (or 24,000 vehicles per hour where vertical and/or horizontal mixing is limited). Therefore, given the Bay Area's attainment status and the limited CO and SO_2 emissions that could result from a land use projects, land use projects would not result in a cumulatively considerable net increase in CO or SO_2, and quantitative analysis not required.

[34] *Ibid.*, p. 16.
[35] *Ibid.*, p. 27.

these mid-block streets are very low, these improvements would result in minimal changes in traffic patterns, particularly because most traffic on these streets is presumably local. To the extent that the pedestrian improvements might discourage existing cut-through traffic, the volumes in question are so small as to not represent a meaningful impact relative to vehicular emissions. Therefore, no substantial air quality impacts would ensue, and the impact of installation of pedestrian improvements would be less than significant.

Mitigation: None required.

Impacts of the 350 Eighth Street Project (Project-Level Analysis)

Air quality impacts from the proposed 350 Eighth Street project would fall into two categories: short-term impacts due to construction, and long-term impacts due to project operation. These potential impacts are consistent with those described above for development in the Project Area as a whole. First, during project construction, the 350 Eighth Street project would affect local particulate concentrations primarily due to fugitive dust sources, and would also generate emissions of both criteria air pollutants and TACs from construction equipment exhaust. Over the long term, the 350 Eighth Street project would result in an increase in emissions primarily due to increased motor vehicle trips, as well as from operation of on-site stationary sources—in this case, a backup generator. Area sources (such as landscaping and the use of consumer products) would generate lesser quantities of air pollutants.

Construction Air Quality Impacts

Impact AQ-10: Construction of the 350 Eighth Street project would not result in emissions of criteria air pollutants, including ozone precursors, that would contribute to an existing or projected air quality violation or result in a cumulatively considerable increase in criteria pollutants, and would not result in substantial construction dust. (Less than Significant)

Demolition, grading and new construction activities would temporarily affect local air quality during the 350 Eighth Street project's proposed three-year construction schedule, causing temporary increases in particulate dust and other pollutants. Emissions generated from construction activities include combustion emissions of criteria air pollutants (ROG, NOx, CO, SOx, and PM_{10} and $PM_{2.5}$) primarily from construction equipment and worker vehicles, evaporative criteria pollutant emissions (ROG) from asphalt paving and architectural coating applications, and dust (including PM_{10} and $PM_{2.5}$) primarily from "fugitive" sources; that is, dust generated by construction activities and that escapes from the construction site.

Criteria Air Pollutants

Criteria pollutant emissions of ROG, NOx, PM_{10}, and $PM_{2.5}$ from construction equipment during construction of the 350 Eighth Street project would incrementally add to the regional atmospheric loading of these pollutants. The Planning Department requires quantification of project-related exhaust emissions and comparison of the emissions to applicable significance thresholds.

The HRA for the proposed Plan included an estimate of construction criteria air pollutant impacts specific to the 350 Eighth Street Project. Average daily criteria air pollutant emissions from project construction were estimated using the California Emissions Estimator Model (CalEEMod). Averaged daily construction criteria air pollutant emissions are based on estimates of construction phasing and equipment expected to be used, as provided by the project sponsor. Where project-specific data were not available (e.g., equipment horsepower and load factors) default assumptions from CalEEMod and ARB's 2011 In-Use Off-Road Equipment Emissions Inventory Model were used to estimate construction emissions. Additional modeling parameters are detailed in the HRA prepared for the proposed project. Average daily emissions are presented in **Table 4.G-5**, page 4.G-54. The methodology used to estimate construction-period emissions is described under "Approach to Analysis" on page 4.G-26.[74]

TABLE 4.G-5
350 EIGHTH STREET PROJECT CONSTRUCTION EXHAUST EMISSIONS ESTIMATES

	Estimated Daily Emissions (pounds per day)[a]			
Construction Phase	**ROG**	**NOx**	**PM10[b]**	**PM2.5[b]**
Demolition	28	88	16	16
Grading	88	628	28	28
Building Construction	1,600	6,100	288	288
Architectural Coating	11,700	720	76	76
Total Construction Emissions	13,146	7,536	408	408
Average Daily Emissions[c]	**18**	**10**	**0.6**	**0.6**
Significance Threshold	54	54	82	54
Significant?	No	No	No	No

[a] Project construction emissions estimates are based on output from CalEEMod v. 2011.1.1 air quality model, using the model's default assumptions. Assumes construction starts in 2013 and ends in 2015.
[b] Vehicle exhaust only.
[c] Based on 730-day construction schedule

SOURCE: Environ International, 2012

As indicated in Table 4.G-6, emissions from the construction of 350 Eighth Street project would not exceed the applicable significance thresholds for criteria pollutants, and construction-related air pollutant impacts would be less than significant.

Fugitive Dust

Dust can be an irritant causing watering eyes or irritation to the lungs, nose and throat. Demolition, excavation, grading and other construction activities can cause wind-blown dust to add to particulate matter in the local atmosphere. Depending on exposure, adverse health effects can occur due to this

[74] CalEEMod output sheets are presented in the health risk assessment (see footnote 53), which is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2008.0877E.

standard are infeasible. It should be noted that, for specialty equipment types (e.g., drill rigs, shoring rigs and concrete pumps), it may not be feasible for construction contractors to modify their current, older equipment to accommodate the particulate filters, or for them to provide newer models with these filters pre-installed.

Significance after Mitigation: Implementation of the above measure would result in the maximum feasible reduction of diesel emissions that would contribute to construction-period health risk, thereby lowering both lifetime cancer risk and the concentration of $PM_{2.5}$ to which receptors would be exposed. However, Tier 4 equipment is not readily available at this time. Both federal (EPA) and ARB Interim Tier 4 standards took effect in January 2011 for new equipment, and it is anticipated that it will take several years, at a minimum, for this equipment to be placed in widespread use, because heavy construction equipment typically has a useful life of 15 years or more. Meanwhile, as also noted above under "Toxic Air Contaminant (TAC) Regulations," ARB has delayed implementation of emissions standards for existing off-road diesel engines, including requirements that construction equipment use so-called Best Available Control Technology or that each operator's fleet of equipment meet a specified average emissions standards. Moreover, retrofitting of off-road equipment with Level 3 VDECS is not yet required by ARB.

It is noted that construction emissions could be lower if newer equipment is employed or less powerful or smaller diesel equipment is used than assumed in the analysis. Emissions could be higher if more or larger diesel equipment is used. Depending on the regulations in place at the time construction begins, and depending on the precise mix of diesel-powered construction equipment employed, it is possible that the impact would be reduced to a less-than-significant level. However, because it cannot be stated with certainty that estimated excess cancer risk from construction emissions would be reduced to below the applicable significance thresholds, and because of the uncertainty concerning the availability and feasibility of using construction equipment that meets the performance requirements of Mitigation Measure M-AQ-11, this impact is conservatively judged to be **significant and unavoidable**.

Operational Air Quality Impacts

Impact AQ-12: Operation of the proposed 350 Eighth Street project would not conflict with the *2010 Clean Air Plan,* violate or contribute to violation of an air quality standard, or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment, either individually or cumulatively. (Less than Significant)

Based on the Proposed Project transportation analysis,[78] the 350 Eighth Street project would generate approximately 1,870 vehicle trips per day. Operational emissions from project traffic and from operation of the proposed building were calculated using the CalEEMod (version 2011.1.1) model, and are presented in **Table 4.G-6**, page 4.G-59. As shown in Table 4.G-7, emission increases attributable to the 350 Eighth Street project would be substantially below the applicable significance thresholds. Therefore, the 350 Eighth Street project's effects of regional criteria pollutant emissions would be less than significant.

78 LCW Consulting, *Western SoMa Community Plan Transportation Study, June 15, 2012*

TABLE 4.G-6
350 EIGHTH STREET PROJECT ESTIMATED DAILY REGIONAL EMISSIONS (2016)

	Daily Projected Emissions (Pounds per Day)[a,b,c]			
	ROG	**NOx**	**PM_{10}**	**$PM_{2.5}$**
Area-Source Emissions	12	1	<1	<1
Mobile-Source (Vehicle) Emissions	15	27	22	2
TOTAL	**27**	**29**	**22**	**2**
Significance Threshold	*54*	*54*	*82*	*54*
Significant?	No	No	No	No
	Annual Projected Emissions (Tons per Year)[a,b,c]			
	ROG	**NOx**	**PM_{10}**	**$PM_{2.5}$**
Area-Source Emissions	2.3	0.3	<0.1	<0.1
Mobile-Source (Vehicle) Emissions	0.8	1.4	1.3	0.1
TOTAL	**3.1**	**1.6**	**1.4**	**0.1**
Significance Threshold	*10*	*10*	*15*	*10*
Significant?	No	No	No	No

NOTES:

[a] Emission factors were generated by the CalEEMod (v. 2011.1.1) model for San Francisco County, and assume a default vehicle mix. All daily estimates are the average of summer and winter conditions. Traffic generated emissions based on trip generation from the project transportation study.

[b] Columns may not total due to rounding.

[c] Emergency generator emissions not included, as they were modeled in the SCREEN3 model and found to amount to less than 0.002 pounds per day of any pollutant averaged over the course of the year, and less than 0.02 pounds per day of any pollutant on a day when the generator is tested.

SOURCE: Environ International, 2012; Environmental Science Associates, 2012.

The proposed 350 Eighth Street project would be generally consistent with the *San Francisco General Plan*, as proposed for amendment by the *Western SoMa Community Plan*. Additionally, the General Plan, Planning Code, and City Charter implement various Transportation Control Measures identified in the *2010 Clean Air Plan* through the City's Transit First Program, bicycle parking requirements, transit development impact fees applicable to commercial uses, and other actions.

Consistency with this *2010 Bay Area Clean Air Plan* is the basis for determining whether the proposed project would conflict with or obstruct implementation of an applicable air quality plan. A consistency analysis of the proposed project in relation to the goals and objectives of the *Clean Air Plan* focuses on the proposed project's support of the primary goals in the *Clean Air Plan*, the proposed project's implementation of applicable control measures in the *Clean Air Plan*, and evaluation of any potential disruption to or hindrance of implementation of the *Clean Air Plan*. In determining whether a proposed project or plan would conflict with the *Clean Air Plan*, three criteria area evaluated: would the Project implement the applicable control measures in the *Clean Air Plan*; would the Project disrupt or hinder implementation of any of these control measures; and would the Project support the primary goals of the *Clean Air Plan*?

EXHIBIT 12

DRAFT ENVIRONMENTAL IMPACT REPORT

200-214 6th Street Affordable Housing with Ground-Floor Retail Project

PLANNING DEPARTMENT
CASE NO. 2011.0119E

STATE CLEARINGHOUSE
NO. 2012082052

Draft EIR Publication Date:	**February 27, 2013**
Draft EIR Public Hearing Date:	**April 4, 2013**
Draft EIR Public Comment Period:	**February 27, 2013 – April 15, 2013**

SAN FRANCISCO
PLANNING
DEPARTMENT

Written comments should be sent to:
Environmental Review Officer | 1650 Mission Street, Suite 400 | San Francisco, CA 94103

Topics:		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
7.	**AIR QUALITY—Would the project:**					
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐	☐
b)	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐	☐
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)?	☐	☐	☒	☐	☐
d)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐	☐
e)	Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐	☐

Setting

The Bay Area Air Quality Management District (BAAQMD) is the regional agency with jurisdiction over the nine-county San Francisco Bay Area Air Basin (SFBAAB), which includes San Francisco, Alameda, Contra Costa, Marin, San Mateo, Santa Clara and Napa counties and portions of Sonoma and Solano counties. BAAQMD is responsible for attaining and maintaining air quality in the SFBAAB within federal and state air quality standards, as established by the federal Clean Air Act (CAA) and the California Clean Air Act (CCAA), respectively. Specifically, the BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the SFBAAB and to develop and implement strategies to attain the applicable federal and state standards. The CAA and the CCAA require plans to be developed for areas that do not meet air quality standards, generally. The most recent air quality plan, the *2010 Clean Air Plan*, was adopted by the BAAQMD on September 15, 2010. The *2010 Clean Air Plan* updates the *Bay Area 2005 Ozone Strategy* in accordance with the requirements of the CCAA to implement all feasible measures to reduce ozone; provide a control strategy to reduce ozone, particulate matter, air toxics, and GHGs in a single, integrated plan; and establish emission control measures to be adopted or implemented. The primary goals of the *2010 Clean Air Plan* are to:

- Attain air quality standards;

- Reduce population exposure and protect public health in the San Francisco Bay Area; and
- Reduce GHG emissions and protect the climate.

The *2010 Clean Air Plan* represents the most current applicable air quality plan for the SFBAAB. Consistency with this plan is the basis for determining whether the proposed project would conflict with or obstruct implementation of an applicable air quality plan.

Criteria Air Pollutants

In accordance with the state and federal CAAs, air pollutant standards are identified for the following six criteria air pollutants: ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2) 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 SFBAAB experiences low concentrations of most pollutants when compared to federal or state standards. The SFBAAB is designated as either in attainment[40] or unclassified for most criteria pollutants with the exception of ozone, $PM_{2.5}$, and PM_{10}, for which these pollutants are designated as non-attainment for either the state or federal standards. By its very nature regional air pollution is largely a cumulative impact in that no single project is sufficient in size to, by itself, result in non-attainment of air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality impacts. If a project's contribution to cumulative air quality impacts is considerable, then the project's impact on air quality would be considered significant.[41]

Land use projects may contribute to regional criteria air pollutants during the construction and operational phases of a project. Table 3, page 71, identifies air quality significance thresholds followed by a discussion of each threshold. Projects that would result in criteria air pollutant emissions below these significance thresholds would not violate an air quality standard, contribute substantially to an air quality violation or result in a cumulatively considerable net increase in criteria air pollutants within the SFBAAB.

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[40] "Attainment" status refers to those regions that are meeting federal and/or state standards for a specified criteria pollutant. "Non-attainment" refers to regions that do not meet federal and/or state standards for a specified criteria pollutant. "Unclassified" refers to regions where there is not enough data to determine the region's attainment status.

[41] Bay Area Air Quality Management District (BAAQMD). *California Environmental Quality Act Air Quality Guidelines*. May 2011. Page 2-1.

Table 3 Criteria Air Pollutant Significance Thresholds			
Pollutant	**Construction Thresholds**	**Operational Thresholds**	
	Average Daily Emissions (lbs./day)	**Average Daily Emissions (lbs./day)**	**Annual Average Emissions (tons/year)**
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	

Ozone Precursors. As discussed previously, the SFBAAB is currently designated as non-attainment for ozone and particulate matter (PM_{10} and $PM_{2.5}$[42]). Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_x). The potential for a project to result in a cumulatively considerable net increase in criteria air pollutants, which may contribute to an existing or projected air quality violation, are based on the state and federal Clean Air Acts emissions limits for stationary sources. The federal New Source Review (NSR) program was created by the federal CAA to ensure that stationary sources of air pollution are constructed in a manner that is consistent with attainment of federal health based ambient air quality standards. Similarly, to ensure that new stationary sources do not cause or contribute to a violation of an air quality standard, BAAQMD Regulation 2, Rule 2 requires that any new source that emits criteria air pollutants above a specified emissions limit must offset those emissions. For ozone precursors, ROG and NO_x, the offset emissions level is an annual average of 10 tons per year (or 54 pounds (lbs.) per day).[43] These levels represent emissions 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.

Although this regulation applies to new or modified stationary sources, land use development projects result in ROG and NO_x emissions as a result of increases in vehicle trips, architectural coating and construction activities. Therefore, the above thresholds can be applied to the construction and operational

[42] PM_{10} is often termed "coarse" particulate matter and is made of particulates that are 10 microns in diameter or larger. $PM_{2.5}$, termed "fine" particulate matter, is composed of particles that are 2.5 microns or less in diameter.

[43] BAAQMD, Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance. October 2009. At page 17.

phases of land use projects and those projects that result in emissions below these thresholds, would not be considered to contribute to an existing or projected air quality violation or result in a considerable net increase in ROG and NO_x emissions. Due to the temporary nature of construction activities, only the average daily thresholds are applicable to construction phase emissions.

Particulate Matter (PM_{10} and $PM_{2.5}$). The BAAQMD has not established an offset limit for $PM_{2.5}$. However, the emissions limit in the federal NSR for stationary sources in nonattainment areas is an appropriate significance threshold. For PM_{10} and $PM_{2.5}$, the emissions limit under NSR is 15 tons per year (82 lbs. per day) and 10 tons per year (54 lbs. per day), respectively. These emissions limits represent levels at which a source is not expected to have an impact on air quality.[44] Similar to ozone precursor thresholds identified above, land use development projects typically result in particulate matter emissions as a result of increases in vehicle trips, space heating and natural gas combustion, landscape maintenance, and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of a land use project. Again, because construction activities are temporary in nature, only the average daily thresholds are applicable to construction-phase emissions.

Fugitive Dust. Fugitive dust emissions are typically generated during construction phases. Studies have shown that the application of best management practices (BMPs) at construction sites significantly control fugitive dust.[45] Individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to 90 percent.[46] The BAAQMD has identified a number of BMPs to control fugitive dust emissions from construction activities.[47] The City's Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) requires a number of measures to control fugitive dust to ensure that construction projects do not result in visible dust. The BMPs employed in compliance with the City's Construction Dust Control Ordinance is an effective strategy for controlling construction-related fugitive dust.

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44 Ibid, p. 16.

45 Western Regional Air Partnership. 2006. *WRAP Fugitive Dust Handbook*. September 7, 2006. This document is available online at *http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf*, accessed February 16, 2012.

46 BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*. October 2009, p. 27.

47 BAAQMD, *CEQA Air Quality Guidelines*, May 2011. This document is available online at *http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx*, accessed February 27, 2012.

(retail, likely restaurant). During the project's approximately 20-month construction period, construction activities would have the potential to result in fugitive dust emissions, criteria air pollutants, and DPM, as discussed further below.

Impact AQ-1: The proposed project's construction activities would generate fugitive dust and criteria air pollutants, but would not violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (Less than Significant)

Fugitive Dust

Project-related demolition, excavation, grading, and other construction activities may cause wind-blown dust that could contribute particulate matter into the local atmosphere. Although there are federal standards for air pollutants and implementation of state and regional air quality control plans, air pollutants continue to have impacts on human health throughout the country. California has found that particulate matter exposure can cause health effects at lower levels than national standards. The current health burden of particulate matter demands that, where possible, public agencies take feasible available actions to reduce sources of particulate matter exposure. According to the California Air Resources Board, reducing ambient particulate matter from 1998-2000 levels to natural background concentrations in San Francisco would prevent over 200 premature deaths.

Dust can be an irritant causing watering eyes or irritation to the lungs, nose, and throat. Demolition, excavation, grading, and other construction activities can cause wind-blown dust to add to particulate matter in the local atmosphere. Depending on exposure, adverse health effects can occur due to general particulate matter and specific contaminants such as lead or asbestos that may be constituents of soil.

In response, the San Francisco Board of Supervisors approved a series of amendments to the San Francisco Building and Health Codes generally referred hereto as the Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) with the intent of reducing the quantity of dust generated during site preparation, demolition and construction work in order to protect the health of the general public and of onsite workers, to minimize public nuisance complaints, and to avoid orders to stop work by the Department of Building Inspection (DBI).

The Ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a

permit from DBI. The Director of DBI may waive this requirement for activities on sites less than one half-acre that are unlikely to result in any visible wind-blown dust.

The project sponsor and the contractor responsible for construction activities at the project site shall use the following practices to control construction dust on the site or other practices that result in equivalent dust control that are acceptable to the Director. Dust suppression activities may include watering all active construction areas sufficiently to prevent dust from becoming airborne; increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the San Francisco Public Works Code. If not required, reclaimed water should be used whenever possible. Contractors shall provide as much water as necessary to control dust (without creating run-off in any area of land clearing, and/or earth movement). During excavation and dirt-moving activities, contractors shall wet sweep or vacuum the streets, sidewalks, paths and intersections where work is in progress at the end of the workday. Inactive stockpiles (where no disturbance occurs for more than seven days) greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, and soil shall be covered with a 10 millimeter (0.01 inch) polyethylene plastic (or equivalent) tarp, braced down, or use other equivalent soil stabilization techniques.

These regulations and procedures set forth by the San Francisco Building Code would ensure that potential dust-related air quality impacts would be reduced to a level of insignificance.

Criteria Air Pollutants

As discussed above, construction activities would also result in emissions of criteria air pollutants. To assist lead agencies in determining whether short-term construction-related air pollutant emissions require further analysis as to whether the project may exceed the criteria air pollutant significance thresholds shown in Table 4, the BAAQMD, in their *CEQA Air Quality Guidelines* (May 2011), has developed screening criteria. If all the screening criteria are met by a proposed project, then the lead agency or applicant does not need to perform a detailed air quality assessment of the project's air pollutant emissions, and construction of the proposed project would result in less-than-significant criteria air pollutant impacts. Projects that exceed the screening sizes may require further project-level quantification to determine whether criteria air pollutant emissions may exceed significance thresholds. The *CEQA Air Quality Guidelines* note that the screening levels are generally representative of new development on greenfield[56] sites without any form of mitigation measures taken into consideration. In

[56] Agricultural or forest land or an undeveloped site earmarked for commercial, residential, or industrial projects.

addition, the screening criteria do not account for project design features, attributes, or local development requirements that could also result in lower emissions. For projects that are mixed-use, infill and/or proximate to transit service and local services such as the proposed project, emissions would be expected to be less than the greenfield-type project that the screening criteria are based upon.

The proposed project would include 67 residential units and approximately 2,845 square feet of ground-floor commercial space (retail, likely restaurant). The proposed project would be below the criteria air pollutant screening sizes for mid-rise residential (494 units) identified in the BAAQMD's *CEQA Air Quality Guidelines*. The guidelines do not have screening criteria for generic commercial, retail, or restaurant uses; however, the screening criteria for various applicable retail and restaurant uses are at a minimum of 5,000 square feet (24-hour convenience market) or 8,000 square feet (fast food restaurant without drive-through).

Thus, quantification of construction-related criteria air pollutant emissions is not required, and the proposed project's construction activities would not exceed any of the significance thresholds for criteria air pollutants, and would result in a less-than-significant construction criteria air pollutant impact.

Impact AQ-2: The proposed project's construction activities would generate toxic air contaminants, including diesel particulate matter, which would expose sensitive receptors to substantial pollutant concentrations. (Less than Significant with Mitigation)

Off-road equipment (which includes construction-related equipment) was once estimated to be the second largest source of ambient DPM emissions in California. However, newer and more refined emission inventories have substantially lowered the estimates of DPM emissions from off-road equipment such that off-road equipment is now considered the sixth largest source of DPM emissions in California.[57] This reduction in emissions is due, in part, to effects of the economic recession and the decline in construction. Also, more refined emissions estimation methodologies are showing decreases in emissions. For example, revised particulate matter (PM) emission estimates for the year 2010, for which DPM is a major component of total PM, have decreased by 83 percent from previous estimates for the SFBAAB.[58] Approximately half of the reduction can be attributed to the economic recession and

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[57] California Air Resources Board (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*, October 2010.

[58] ARB, "In-Use Off-Road Equipment, 2011 Inventory Model," Query accessed online, April 2, 2012, http://www.arb.ca.gov/msei/categories.htm#inuse_or_category.

EXHIBIT 13

SAN FRANCISCO
PLANNING DEPARTMENT

Preliminary Mitigated Negative Declaration

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

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415.558.6409

Planning
Information:
415.558.6377

Date:	March 20, 2013
Case No.:	**2007.0385E**
Project Title:	**345 Brannan Street**
Zoning:	Mixed Use Office District 65-X Height and Bulk District
Block/Lot:	3788/039
Lot Size:	24,110 square feet
Project Sponsor:	Charles Bloszies, (415) 834-9002
Staff Contact:	Don Lewis, (415) 575-9095, don.lewis@sfgov.org

PROJECT DESCRIPTION:

The "L"-shaped project site is located mid-block between Stanford and Third Streets on the block bounded by Brannan Street to the north, Third Street to the west, Townsend Street to the south, and Second Street to the east within the South of Market area. The proposed project involves the removal of an existing 94-space surface parking lot and construction of a new, five-story, 65-foot-tall, office building totaling approximately 116,615 square feet in size with 26 below-grade parking spaces. The project sponsor proposes two options for the ground-floor. Option 1 would include ground-floor retail/restaurant use, while Option 2 would include ground-floor office use. Under Option 1, the building would contain 95,585 square feet of office use and 7,000 square feet of ground-floor retail/restaurant use. Under Option 2, the building would contain 102,585 square feet of office use. Under both options, approximately 825 square feet of private open space would be provided on the second floor and approximately 4,000 square feet of common open space would be provided on the roof deck. Pedestrian access would be from Brannan Street and vehicular access to the underground parking garage would be from Stanford Street. The proposed project would require Planning Commission authorization under Planning Code Section 321 (Office Development Annual Limit), Section 329 (Large Project Authorization), and Section 295 (Shadow). The project site is located within the Eastern Neighborhoods Plan Area.

FINDING:

This project could not have a significant effect on the environment. This finding is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15064 (Determining Significant Effect), 15065 (Mandatory Findings of Significance), and 15070 (Decision to prepare a Negative Declaration), and the following reasons as documented in the Initial Evaluation (Initial Study) for the project, which is attached.

Mitigation measures are included in this project to avoid potentially significant effects. See pages 127-134.

cc: Chuck Bloszies, Project Sponsor; Supervisor Jane Kim, District 6; Virna Byrd, M.D.F.

Topics:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Not Applicable
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐	☐

Setting

The Bay Area Air Quality Management District (BAAQMD) is the regional agency with jurisdiction over the nine-county San Francisco Bay Area Air Basin (SFBAAB), which includes San Francisco, Alameda, Contra Costa, Marin, San Mateo, Santa Clara, and Napa Counties and portions of Sonoma and Solano Counties. The BAAQMD is responsible for attaining and maintaining air quality in the SFBAAB within federal and state air quality standards, as established by the federal Clean Air Act (CAA) and the California Clean Air Act (CCAA), respectively. Specifically, the BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the SFBAAB and to develop and implement strategies to attain the applicable federal and state standards. The CAA and the CCAA require plans to be developed for areas that do not meet air quality standards, generally. The most recent air quality plan, the *2010 Clean Air Plan*, was adopted by the BAAQMD on September 15, 2010. The *2010 Clean Air Plan* updates the *Bay Area 2005 Ozone Strategy* in accordance with the requirements of the CCAA to implement all feasible measures to reduce ozone; provide a control strategy to reduce ozone, particulate matter, air toxics, and greenhouse gases in a single, integrated plan; and establish emission control measures to be adopted or implemented. The 2010 Clean Air Plan contains the following primary goals:

- Attain air quality standards;
- Reduce population exposure and protect public health in the San Francisco Bay Area; and
- Reduce greenhouse gas emissions and protect the climate.

The *2010 Clean Air Plan* represents the most current applicable air quality plan for the SFBAAB. Consistency with this plan is the basis for determining whether the proposed project would conflict with or obstruct implementation of an applicable air quality plan.

Criteria Air Pollutants

In accordance with the state and federal CAAs, air pollutant standards are identified for the following six criteria air pollutants: ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), 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 SFBAAB experiences low concentrations of most pollutants when compared to federal or state standards. The SFBAAB is designated as either in attainment[24] or unclassified for most criteria pollutants with the exception of ozone, $PM_{2.5}$, and PM_{10}, for which these pollutants are designated as non-attainment for either the state or federal standards. By its very nature, regional air pollution is largely a cumulative impact in that no single project is sufficient in size to, by itself, result in non-attainment of air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality impacts. If a project's contribution to cumulative air quality impacts is considerable, then the project's impact on air quality would be considered significant.[25]

Land use projects may contribute to regional criteria air pollutants during the construction and operational phases of a project. Table 1, below, identifies air quality significance thresholds followed by a discussion of each threshold. Projects that would result in criteria air pollutant emissions below these significance thresholds would not violate an air quality standard, contribute substantially to an air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants within the SFBAAB.

Ozone Precursors. As discussed previously, the SFBAAB is currently designated as non-attainment for ozone and particulate matter (PM10 and PM2.5[26]). Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NOx). The potential for a project to result in a cumulatively considerable net increase in criteria air pollutants, which may contribute to an existing or projected air quality violation, are based on the state and federal Clean Air Acts emissions limits for stationary sources. The federal New Source Review (NSR) program was created by the federal CAA to ensure that stationary sources of air pollution are constructed in a manner that is consistent with attainment of federal health based ambient air quality standards. Similarly, to ensure that new stationary sources do not cause or contribute to a violation of an air quality standard, BAAQMD Regulation 2, Rule 2 requires that any new source that emits criteria air pollutants above a specified emissions limit must offset those emissions. For ozone precursors ROG and NOx, the offset emissions level is an annual average of 10 tons per

[24] "Attainment" status refers to those regions that are meeting federal and/or state standards for a specified criteria pollutant. "Non-attainment" refers to regions that do not meet federal and/or state standards for a specified criteria pollutant. "Unclassified" refers to regions where there is not enough data to determine the region's attainment status.

[25] Bay Area Air Quality Management District (BAAQMD), *California Environmental Quality Act Air Quality Guidelines*, May 2011, page 2-1.

[26] PM_{10} is often termed "coarse" particulate matter and is made of particulates that are 10 microns in diameter or smaller. $PM_{2.5}$, termed "fine" particulate matter, is composed of particles that are 2.5 microns or less in diameter.

year (or 54 pounds (lbs.) per day).[27] These levels represent emissions 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.

Although this regulation applies to new or modified stationary sources, land use development projects result in ROG and NOx emissions as a result of increases in vehicle trips, architectural coating and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of land use projects and those projects that result in emissions below these thresholds, would not be considered to contribute to an existing or projected air quality violation or result in a considerable net increase in ROG and NOx emissions. Due to the temporary nature of construction activities, only the average daily thresholds are applicable to construction phase emissions.

Table 1
Criteria Air Pollutant Significance Thresholds

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	

Particulate Matter (PM_{10} and $PM_{2.5}$). The BAAQMD has not established an offset limit for $PM_{2.5}$. However, the emissions limit in the federal NSR for stationary sources in nonattainment areas is an appropriate significance threshold. For PM_{10} and $PM_{2.5}$, the emissions limit under NSR is 15 tons per year (82 lbs. per day) and 10 tons per year (54 lbs. per day), respectively. These emissions limits represent levels at which a source is not expected to have an impact on air quality.[28] Similar to ozone precursor thresholds identified above, land use development projects typically result in particulate matter emissions as a result of increases in vehicle trips, space heating and natural gas combustion, landscape maintenance, and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of a land use project. Again, because

[27] BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, page 17.

[28] BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, page 16.

construction activities are temporary in nature, only the average daily thresholds are applicable to construction-phase emissions.

Fugitive Dust. Fugitive dust emissions are typically generated during construction phases. Studies have shown that the application of best management practices (BMPs) at construction sites significantly control fugitive dust.[29] Individual measures have been shown to reduce fugitive dust by anywhere from 30 to 90 percent.[30] The BAAQMD has identified a number of BMPs to control fugitive dust emissions from construction activities.[31] The City's Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) requires a number of measures to control fugitive dust to ensure that construction projects do not result in visible dust. The BMPs employed in compliance with the City's Construction Dust Control Ordinance is an effective strategy for controlling construction-related fugitive dust.

Local Health Risks and Hazards

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 of short-term) adverse effects to human health, including carcinogenic effects. A TAC is defined in California Health and Safety Code §39655 as an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health. Human health effects of TACs include birth defects, neurological damage, cancer, and death. 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 BAAQMD using a risk-based approach. This approach uses a health risk assessment 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

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[29] Western Regional Air Partnership. *2006. WRAP Fugitive Dust Handbook.* September 7, 2006. This document is available online at *http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf*, accessed February 16, 2012.

[30] BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance*, October 2009, page 27.

[31] BAAQMD, *CEQA Air Quality Guidelines*, May 2011.

Construction Air Quality Impacts

Project-related air quality impacts fall into two categories: short-term impacts due to construction and long term impacts due to project operation. The following addresses construction-related air quality impacts resulting from the proposed project.

Impact AQ-1: The proposed project's construction activities would generate fugitive dust and criteria air pollutants, but would not violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (Less than Significant)

Construction activities (short-term) typically result in emissions of fugitive dust, criteria air pollutants, and DPM. Emissions of criteria pollutants and DPM are primarily a result of the combustion of fuel from on-road and off-road vehicles. However, ROGs are also emitted from activities that involve painting or other types of architectural coatings or asphalt paving activities. The proposed project includes the removal of the surface parking lot and the construction of a five-story office building. During the project's approximately ten to twelve month construction period, construction activities would have the potential to result in fugitive dust emissions, criteria air pollutants and DPM.

Fugitive Dust

Project-related demolition, excavation, grading, and other construction activities may cause wind-blown dust that could contribute particulate matter into the local atmosphere. Although there are federal standards for air pollutants and implementation of state and regional air quality control plans, air pollutants continue to have impacts on human health throughout the country. California has found that particulate matter exposure can cause health effects at lower levels than national standards. The current health burden of particulate matter demands that, where possible, public agencies take feasible available actions to reduce sources of particulate matter exposure. According to the California Air Resources Board, reducing ambient particulate matter from 1998-2000 levels to natural background concentrations in San Francisco would prevent over 200 premature deaths.

Dust can be an irritant causing watering eyes or irritation to the lungs, nose, and throat. Demolition, excavation, grading, and other construction activities can cause wind-blown dust to add to particulate matter in the local atmosphere. Depending on exposure, adverse health effects can occur due to this particulate matter in general and also due to specific contaminants such as lead or asbestos that may be constituents of soil.

In response, the San Francisco Board of Supervisors approved a series of amendments to the San Francisco Building and Health Codes generally referred hereto as the Construction Dust Control

Ordinance (Ordinance 176-08, effective July 30, 2008) with the intent of reducing the quantity of dust generated during site preparation, demolition and construction work in order to protect the health of the general public and of onsite workers, minimize public nuisance complaints, and to avoid orders to stop work by the Department of Building Inspection (DBI).

The Ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from DBI. The Director of DBI may waive this requirement for activities on sites less than one half-acre that are unlikely to result in any visible wind-blown dust.

In compliance with the Construction Dust Control Ordinance, the project sponsor and the contractor responsible for construction activities at the project site would be required to use the following practices to control construction dust on the site or other practices that result in equivalent dust control that are acceptable to the Director. Dust suppression activities may include watering all active construction areas sufficiently to prevent dust from becoming airborne; increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the San Francisco Public Works Code. If not required, reclaimed water should be used whenever possible. Contractors shall provide as much water as necessary to control dust (without creating run-off in any area of land clearing, and/or earth movement). During excavation and dirt-moving activities, contractors shall wet sweep or vacuum the streets, sidewalks, paths, and intersections where work is in progress at the end of the workday. Inactive stockpiles (where no disturbance occurs for more than seven days) greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, and soil shall be covered with a 10 millimeter (0.01 inch) polyethylene plastic (or equivalent) tarp, braced down, or use other equivalent soil stabilization techniques.

For projects over one half-acre, such as the proposed project, the Dust Control Ordinance requires that the project sponsor submit a Dust Control Plan for approval by the San Francisco Department of Public Health. DBI will not issue a building permit without written notification from the Director of Public Health that the applicant has a site-specific Dust Control Plan, unless the Director waives the requirement. Interior-only tenant improvement projects that are over one-half acre in size that will not produce exterior visible dust are exempt from the site-specific Dust Control Plan requirement.

The site-specific Dust Control Plan would require the project sponsor to: submit of a map to the Director of Public Health showing all sensitive receptors within 1,000 feet of the site; wet down

areas of soil at least three times per day; provide an analysis of wind direction and install upwind and downwind particulate dust monitors; record particulate monitoring results; hire an independent, third-party to conduct inspections and keep a record of those inspections; establish shut-down conditions based on wind, soil migration, etc.; establish a hotline for surrounding community members who may be potentially affected by project-related dust; limit the area subject to construction activities at any one time; install dust curtains and windbreaks on the property lines, as necessary; limit the amount of soil in hauling trucks to the size of the truck bed and securing with a tarpaulin; enforce a 15 mph speed limit for vehicles entering and exiting construction areas; sweep affected streets with water sweepers at the end of the day; install and utilize wheel washers to clean truck tires; terminate construction activities when winds exceed 25 miles per hour; apply soil stabilizers to inactive areas; and sweep off adjacent streets to reduce particulate emissions. The project sponsor would be required to designate an individual to monitor compliance with these dust control requirements.

Compliance with these regulations and procedures set forth by the San Francisco Building Code would ensure that potential dust-related air quality impacts would be reduced to a level of insignificance.

Criteria Air Pollutants

As discussed above, construction activities would result in emissions of criteria air pollutants from the use of off- and on-road vehicles and equipment. To assist lead agencies in determining whether short-term construction-related air pollutant emissions require further analysis as to whether the project may exceed the criteria air pollutant significance thresholds shown in Table 1, above, the BAAQMD, in its *CEQA Air Quality Guidelines* (May 2011), developed screening criteria. If a proposed project meets the screening criteria, then construction of the proposed project would result in less-than-significant criteria air pollutant impacts. A project that exceeds the screening criteria may require a detailed air quality assessment to determine whether criteria air pollutant emissions would exceed significance thresholds. The *CEQA Air Quality Guidelines* note that the screening levels are generally representative of new development on greenfield[40] sites 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. For projects that are mixed-use, infill, and/or proximate to transit service and local services, emissions would be expected to be less than the greenfield-type project that the screening criteria are based upon.

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

The proposed project involves the removal of a surface parking lot and construction of a five-story office building with potential ground-floor retail use. The proposed project would be below the criteria air pollutant screening sizes for a General Office Building (277,000 square feet) and Quality Restaurant[41] (277,000 square feet) identified in the BAAQMD's *CEQA Air Quality Guidelines*. Thus, quantification of construction-related criteria air pollutant emissions is not required, and the proposed project's construction activities would not exceed any of the significance thresholds for criteria air pollutants, and would result in a less-than-significant construction criteria air pollutant impact.

Impact AQ-2: The proposed project's construction activities would generate toxic air contaminants, including diesel particulate matter, but would not expose sensitive receptors to substantial pollutant concentrations. (Less than Significant)

Off-road equipment (which includes construction-related equipment) is a large contributor to DPM emissions in California, although since 2007, the ARB has found the emissions to be substantially lower than previously expected.[42]Newer and more refined emission inventories have substantially lowered the estimates of DPM emissions from off-road equipment such that off-road equipment is now considered the sixth largest source of DPM emissions in California.[43] This reduction in emissions is due, in part, to effects of the economic recession and refined emissions estimation methodologies. For example, revised particulate matter (PM) emission estimates for the year 2010, which DPM is a major component of total PM, have decreased by 83 percent from previous estimates for the SFBAAB.[44] Approximately half of the reduction can be attributed to the economic recession and approximately half can be attributed to updated assumptions independent of the economic recession (e.g., updated methodologies used to better assess construction emissions).[45]

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41 Although the retail use of the proposed project Option 1 has not yet been determined, a Quality Restaurant represents a best estimate at this time and is closest to any of uses list on Table 3-1.

42 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.

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*, October 2010.

44 ARB, "In-Use Off-Road Equipment, 2011 Inventory Model," Query accessed online, April 2, 2012, http://www.arb.ca.gov/msei/categories.htm#inuse_or_category.

45 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*, October 2010.

EXHIBIT 14

SAN FRANCISCO
PLANNING DEPARTMENT

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Reception:
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415.558.6377

PRELIMINARY MITIGATED NEGATIVE DECLARATION

Date:	March 27, 2013
Case No.:	2011.0702E
Project Title:	101 Polk Street Residential Development
Block and Lot:	0811/002 & 003
Zoning:	C-3-G (Downtown Commercial General) 120-X Height and Bulk District
Lot Size:	13,200 square feet
Project Sponsor:	Marc Babsin, Emerald Fund, (415) 489-1313 marcb@emeraldfund.com
Staff Contact:	Andrea Contreras, (415) 575-9044 andrea.contreras@sfgov.org

PROJECT DESCRIPTION:

The project site (site) is located at 101 Polk Street, at the northwest corner of Polk and Hayes Streets in the Downtown/Civic Center area of San Francisco, approximately one-half block south of San Francisco City Hall, one block north of Market Street, and about three blocks from the Civic Center Bay Area Rapid Transit (BART) Station. The site is bordered by Hayes Street to the south, Lech Walesa Alley to the north, and Polk Street to the east. The 13,200-square-foot site is currently in use as a surface parking lot. The project sponsor proposes to build a 13-story, 162 unit residential building on the site. A subterranean garage would contain vehicle and bicycle parking, and would be accessible from the adjacent Lech Walesa Alley. Street frontage along Polk and Hayes Streets would consist of walk-up residential units, as well as the building's lobby and leasing area. The proposed project would require three exceptions per Planning Code Section 309 for parking (Code Section 151.1) and rear yard requirements (Code Section 134 (d)), as well as the continuation of existing wind comfort level exceedances (Code Section 148). A Conditional Use Authorization would also be required per Planning Code Sections 215, 124(f), and 303 to allow dwelling unit density in excess of one unit per 125 square feet of lot area and to exempt the on-site inclusionary dwelling units from the floor area ratio limits.

FINDING:

This project could have a significant effect on the environment. This finding is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15064 (Determining Significant Effect), 15065 (Mandatory Findings of Significance), and 15070 (Decision to Prepare a Negative Declaration), and the following reasons as documented in the Initial Evaluation (Initial Study) for the project, which is attached.

Mitigation and improvement measures are included in this project to avoid potentially significant effects. See pp.143-150.

measures to reduce ozone; provide a control strategy to reduce ozone, particulate matter, air toxics, and GHGs in a single, integrated plan; and establish emission control measures to be adopted or implemented. The primary goals of the 2010 Clean Air Plan are to:

- Attain air quality standards;
- Reduce population exposure and protect public health in the San Francisco Bay Area; and
- Reduce GHG emissions and protect the climate.

The 2010 Clean Air Plan represents the most current applicable air quality plan for the SFBAAB. Consistency with this plan is the basis for determining whether the proposed project would conflict with or obstruct implementation of an applicable air quality plan.

Criteria Air Pollutants

In accordance with the state and federal CAAs, 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 SFBAAB experiences low concentrations of most pollutants when compared to federal or state standards. The SFBAAB is designated as either in attainment[35]or unclassified for most criteria pollutants with the exception of ozone, $PM_{2.5,}$ and PM_{10}, for which these pollutants are designated as non-attainment for either the state or federal standards. By its very nature regional air pollution is largely a cumulative impact in that no single project is sufficient in size to, by itself, result in non-attainment of air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality impacts. If a project's contribution to cumulative air quality impacts is considerable, then the project's impact on air quality would be considered significant.[36]

Land use projects may contribute to regional criteria air pollutants during the construction and operational phases of a project. Table 6, identifies air quality significance thresholds followed by a discussion of each threshold. Projects that would result in criteria air pollutant emissions below these significance thresholds would not violate an air quality standard, contribute substantially to an air quality violation or result in a cumulatively considerable net increase in criteria air pollutants within the SFBAAB.

[35] "Attainment" status refers to those regions that are meeting federal and/or state standards for specified criteria pollutant. "Non-attainment" refers to regions that do not meet federal and/or state standards for a specified criteria pollutant. "Unclassified" refers to regions where there is not enough data to determine the region's attainment status.

[36] Bay Area Air Quality Management District (BAAQMD), California Environmental Quality Act Air Quality Guidelines, page 2-1. May 2011.

Table 6: Criteria Air Pollutant Significance Threshold

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54	54	10
NOx	54	54	10
PM10	82 (exhaust)	82	15
PM2.5	54 (exhaust)	54	10
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	

Source: BAAQMD CEQA Guidelines, 2010 and 2011.

Ozone Precursors

As discussed previously, the SFBAAB is currently designated as non-attainment for ozone and particulate matter (PM_{10} and $PM_{2.5}$)[37]. Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_x). The potential for a project to result in a cumulatively considerable net increase in criteria air pollutants, which may contribute to an existing or projected air quality violation, are based on the state and federal Clean Air Acts emissions limits for stationary sources. The federal New Source Review (NSR) program was created by the federal CAA to ensure that stationary sources of air pollution are constructed in a manner that is consistent with attainment of federal health based ambient air quality standards. Similarly, to ensure that new stationary sources do not cause or contribute to a violation of an air quality standard, BAAQMD Regulation Two, Rule Two requires that any new source that emits criteria air pollutants above a specified emissions limit must offset those emissions. For ozone precursors, ROG and NO_x, the offset emissions level is an annual average of ten tons per year (or 54 pounds (lbs.) per day).[38] These levels represent emissions 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.

Although this regulation applies to new or modified stationary sources, land use development projects result in ROG and NOx emissions as a result of increases in vehicle trips, architectural coating and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of land use projects and those projects that result in emissions below these thresholds, would not be considered to contribute to an existing or projected air quality violation or result in a considerable net increase in ROG and NOx emissions. Due to the temporary nature of construction activities, only the average daily thresholds are applicable to construction phase emissions.

[37] PM_{10} is often termed "coarse" particulate matter and is made of particulates that are 10 microns in diameter or larger. $PM_{2.5}$, termed "fine" particulate matter, is composed of particles that are 2.5 microns or less in diameter.

[38] BAAQMD, Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance, page 16. October 2009.

Construction Air Quality Impacts

Impact AQ-1: The proposed project's construction activities would generate fugitive dust and criteria air pollutants, but would not violate an air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (Less than Significant)

Construction activities (short-term) typically result in emissions of fugitive dust, criteria air pollutants, and DPM. Emissions of criteria pollutants and DPM are primarily a result of the combustion of fuel from on-road and off-road vehicles. However, ROGs are also emitted from activities that involve painting or other types of architectural coatings or asphalt paving activities. The proposed project includes demolition of a surface parking lot and construction of a new 13-story building with 162 residential units and 635 square feet of commercial space (leasing office). During the project's approximately 18-month construction period, construction activities would have the potential to result in fugitive dust emissions, criteria air pollutants.

Fugitive Dust

Project-related demolition, excavation, grading, and other construction activities may cause wind-blown dust that could contribute particulate matter into the local atmosphere. Although there are federal standards for air pollutants and implementation of state and regional air quality control plans, air pollutants continue to have impacts on human health throughout the country. California has found that particulate matter exposure can cause health effects at lower levels than national standards. The current health burden of particulate matter demands that, where possible, public agencies take feasible available actions to reduce sources of particulate matter exposure. According to the California Air Resources Board, reducing ambient particulate matter from 1998-2000 levels to natural background concentrations in San Francisco would prevent over 200 premature deaths.

Dust can be an irritant causing watering eyes or irritation to the lungs, nose, and throat. Demolition, excavation, grading, and other construction activities can cause wind-blown dust to add to particulate matter in the local atmosphere. Depending on exposure, adverse health effects can occur due to general particulate matter and specific contaminants such as lead or asbestos that may be constituents of soil.

In response, the San Francisco Board of Supervisors approved a series of amendments to the San Francisco Building and Health Codes generally referred hereto as the Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) with the intent of reducing the quantity of dust generated during site preparation, demolition and construction work in order to protect the health of the general public and of onsite workers, to minimize public nuisance complaints, and to avoid orders to stop work by the Department of Building Inspection (DBI).

The Ordinance requires that all site preparation work, demolition, or other construction activities within San Francisco that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specified dust control measures whether or not the activity requires a permit from DBI. The Director of DBI may waive this requirement for activities on sites less than ½ acre

that are unlikely to result in any visible wind-blown dust. The project would disturb 9,000 cubic yards of soil and would be required to implement dust control measures.

The project sponsor and the contractor responsible for construction activities at the project site shall use the following practices to control construction dust on the site or other practices that result in equivalent dust control that are acceptable to the Director. Dust suppression activities may include watering all active construction areas sufficiently to prevent dust from becoming airborne; increased watering frequency may be necessary whenever wind speeds exceed 15 mph. Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the San Francisco Public Works Code. If not required, reclaimed water should be used whenever possible. Contractors shall provide as much water as necessary to control dust (without creating run-off in any area of land clearing, and/or earth movement). During excavation and dirt-moving activities, contractors shall wet sweep or vacuum the streets, sidewalks, paths and intersections where work is in progress at the end of the workday. Inactive stockpiles (where no disturbance occurs for more than seven days) greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, and soil shall be covered with a 10 millimeter (0.01 inch) polyethylene plastic (or equivalent) tarp, braced down, or use other equivalent soil stabilization techniques. Compliance with these regulations and procedures set forth in the San Francisco Building Code would ensure that potential dust-related air quality impacts would remain *less than significant*.

Criteria Air Pollutants

As discussed above, construction activities would also result in emissions of criteria air pollutants. To assist lead agencies in determining whether short-term construction-related air pollutant emissions require further analysis as to whether the project may exceed the criteria air pollutant significance thresholds shown in Table 6, the BAAQMD, in their CEQA Air Quality Guidelines (May 2011), has developed screening criteria. If all the screening criteria are met by a proposed project, then the lead agency or applicant does not need to perform a detailed air quality assessment of the project's air pollutant emissions, and construction of the proposed project would result in less-than-significant criteria air pollutant impacts. Projects that exceed the screening sizes may require further project-level quantification to determine whether criteria air pollutant emissions may exceed significance thresholds. The CEQA Air Quality Guidelines note that the screening levels are generally representative of new development on greenfield[50] sites 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. For projects that are mixed-use, infill and/or proximate to transit service and local services such as the proposed project, emissions would be expected to be less than the greenfield-type project that the screening criteria are based upon.

The proposed project would include 162 residential units and approximately 635 square feet of ground floor commercial space (leasing office). The proposed project would be below the criteria air pollutant screening sizes for mid-rise residential (494 units) identified in the BAAQMD's CEQA Air Quality

[50] Agricultural or forest land or undeveloped site earmarked for commercial, residential, or industrial projects.

Operational Air Quality Impacts

Land use projects typically result in emissions of criteria air pollutants and toxic air contaminants primarily from an increase in motor vehicle trips. However, land use projects may also result in criteria air pollutants and toxic air contaminants from combustion of natural gas, landscape maintenance, use of consumer products, and architectural coating. The proposed project includes landscaped areas, a leasing office, and residences, which would involve the use of consumer products. Construction of the proposed project would include the use of architectural coatings, and the operation of the proposed project would also result in 591 vehicle trips per day. [59]

Impact AQ-3. The proposed project would result in emissions of criteria air pollutants, but not at levels that would violate an air quality standard, contribute to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (Less than Significant)

As discussed above in Impact AQ-1, the BAAQMD in their *CEQA Air Quality Guidelines* (May 2011), has developed screening criteria to determine whether a project requires an analysis of project-generated criteria air pollutants. If all the screening criteria are met by a proposed project, then the lead agency or applicant does not need to perform a detailed air quality assessment. The proposed project includes 162 residential units and approximately 635 square feet of ground-floor commercial space (leasing office). The proposed project would be below the criteria air pollutant screening sizes for mid-rise residential (494 units) and the lowest potential screening criteria for various commercial uses (5,000 square feet for a 24-hour convenience market or 8,000 square feet for a fast-food restaurant without drive-through) identified in the BAAQMD's CEQA Air Quality Guidelines. Thus, quantification of project-generated criteria air pollutant emissions is not required, and the proposed project would not exceed any of the significance thresholds for criteria air pollutants, and would result in a *less-than-significant* impact with respect to criteria air pollutants.

Impact AQ-4: The proposed project would generate toxic air contaminants, including diesel particulate matter, and would expose sensitive receptors to substantial air pollutant concentrations. (Less than Significant with Mitigation)

As discussed above, the San Francisco Planning Department and DPH, in partnership with BAAQMD, has modeled and assessed air pollutant impacts from mobile, stationary and area sources within the City. This assessment has resulted in the identification of air pollutant hot spots, or areas within the City that deserve special attention when siting uses that either emit toxic air contaminants or uses that are considered sensitive to air pollution. The project site is partially within a hot spot (and is considered within a hot spot for CEQA purposes) and sensitive land uses exist in the residential uses adjacent to the project site. With its inclusion of 162 residential units, the proposed project would site new sensitive land uses within this potential air pollutant hot spot.

[59] Transportation Calculations prepared by Rachel Schuett. This document is available for public review as part of Case No. 2011.0702E at the San Francisco Planning Department, 1650 Mission Street, Suite 400 San Francisco, CA.