

---

## 3.2 AIR QUALITY

---

### Introduction

---

This section describes existing air quality conditions in the region and in the project vicinity. Changes to these conditions will occur with construction and operation of the proposed project, primarily because of increases in local traffic associated with the higher intensity uses and mix of uses. The changes in air quality conditions examined in this section include the potential for the proposed project to:

- conflict with or obstruct implementation of air quality plans by the Bay Area Air Quality Management District (BAAQMD),
- violate a state or national ambient air quality standard or contribute substantially to an existing or projected air quality violation (the Bay Area is considered to have not attained the federal and state ozone standards or the state standard for respirable particulate matter),
- result in a cumulatively considerable net increase of any criteria pollutant for which the region is in non-attainment,
- expose sensitive receptors, such as nearby residents, schools, parks, or convalescent homes, to substantial pollutant concentrations (concern usually focuses on carbon monoxide), or
- create objectionable odors affecting a substantial number of people.

Information reported in this section is derived from the BAAQMD, air emission models that predict regional emissions and localized pollutant concentrations, traffic data prepared for this EIR by DKS Associates, and the site plans presented in Chapter 2, Project Description. Information on climate change and greenhouse gas emissions are not presented in this section but can be found in Section 3.13 of this EIR. Comments received in response to the Notice of Preparation (see Appendix C) did not raise any air quality issues or concerns.

### Setting

---

#### Air Quality Background

The City of Menlo Park is located within the San Francisco Bay Area Air Basin, named so because the surrounding mountains confine the movement of air and the pollutants it contains. This area includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, the western half of Solano and the southern half of Sonoma counties. The regional climate within the Bay Area is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. A wide range of emissions sources—such as dense population centers, heavy vehicular traffic, and industry—and meteorology primarily influence the air quality within the Bay Area.

Air pollutant emissions within the Bay Area are generated by stationary, area-wide, and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point source emissions occur at identified locations and are usually associated with manufacturing and industry. Examples are boilers or combustion equipment that produce electricity or generate heat. Area-wide sources consist of many smaller point sources that are widely distributed. Examples of area-wide sources include residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and consumer products, such as barbeque lighter fluid and hair spray. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by the natural sources, such as when fine dust particles are pulled off the ground surface and suspended in the air during high winds.

Both the federal and State governments have established ambient air quality standards for outdoor concentrations of various pollutants in order to protect public health. The national and State ambient air quality standards have been set at levels where concentrations could be generally harmful to human health and welfare, and to protect the most sensitive persons from illness or discomfort with a margin of safety.

The air pollutants for which national and State standards have been promulgated and which are most relevant to air quality planning and regulation in the Bay Area include ozone, carbon monoxide (CO), respirable particulate matter (PM<sub>10</sub>), fine particulate matter (PM<sub>2.5</sub>), sulfur dioxide (SO<sub>2</sub>), and lead. In addition, toxic air contaminants (TACs) are of concern in the Bay Area. Each of these is briefly described below.

- *Ozone* is a gas that is formed when reactive organic gases (ROG) and nitrogen oxides (NO<sub>x</sub>)—both byproducts of internal combustion engine exhaust—undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are conducive to its formation.
- *Carbon Monoxide* (CO) is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest in the winter morning when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines—unlike ozone—and motor vehicles operating at slow speeds are the primary source of CO in the Bay Area, the highest ambient CO concentrations are generally found near congested transportation corridors and intersections.
- *Respirable Particulate Matter* (PM<sub>10</sub>) and fine particulate matter (PM<sub>2.5</sub>) consists of extremely small, suspended particles or droplets 10 microns and 2.5 microns or smaller in diameter. Most particulate matter in urban areas is produced by fuel combustion, motor vehicle travel, and construction activities.
- *Nitrogen Dioxide* (NO<sub>2</sub>) is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract and is an essential ingredient in the formation of ozone. It is emitted as a by-product of fuel combustion.

- *Sulfur dioxide* (SO<sub>2</sub>) is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal, and from chemical processes occurring at chemical plants and refineries.

*Toxic Air Contaminants* (TACs) is a general term for a diverse group of air pollutants that can adversely affect human health, but have not had ambient air quality standards established for them. They are not fundamentally different from the pollutants discussed above, but lack ambient air quality standards for a variety of reasons (e.g., insufficient data on toxicity, association with particular workplace exposures rather than general environmental exposure, etc.). The health effects of TACs can result from either acute or chronic exposure; many types of cancer are associated with chronic TAC exposures.

### Existing Regional Air Quality

The emissions inventory for the entire Bay Area and San Mateo County is summarized in Table 3.2-1. In the Bay Area, motor vehicles generate the majority of ROG, NO<sub>x</sub>, and CO, stationary sources generate the most SO<sub>x</sub>, and area-wide sources generate the most airborne particulates.

<b>Table 3.2-1 2008 Estimated Average Daily Emissions</b>						
<b>Emissions Source</b>	<b>Emissions in Tons per Day</b>					
	<b>ROG</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>
San Francisco Bay Area Air Basin	378	448	1748	62	212	81
San Mateo County	35	58	174	8	20	7
<i>Source:</i> California Air Resources Board, <i>California Almanac of Emissions and Air Quality</i> , <a href="http://www.arb.ca.gov/app/emsinv/emssumcat.php">http://www.arb.ca.gov/app/emsinv/emssumcat.php</a> , 2009.						

Measurements of ambient concentrations of the criteria pollutants are used by the US Environmental Protection Agency (US EPA) and the California Air Resources Board (ARB) to assess and classify the air quality of each regional air basin, county, or, in some cases, a specific urbanized area. The classification is determined by comparing actual monitoring data with national and State standards. If a pollutant concentration in an area is lower than the standard, the area is classified as being in “attainment” for that pollutant. If the pollutant concentration exceeds the standard, the area is classified as a “nonattainment” area. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated “unclassified.”

The EPA and the ARB use different standards for determining whether the Bay Area is an attainment area. Under national standards, the Bay Area is currently classified as a nonattainment area for ozone. However, EPA recently lowered the national ozone standard and will issue final designations based upon the new standard by March 2010. The Bay Area is in attainment or designated as unclassified for all other pollutants under national standards. Under State standards, the Bay Area is designated as a nonattainment area for ozone and PM<sub>10</sub>, and an attainment area for all other pollutants.

## Existing Local Air Quality

The BAAQMD monitors ambient air pollutant concentrations through a series of monitoring stations located throughout the Bay Area. There is no monitoring station in Menlo Park, but there is one in Redwood City, a few miles to the north, that currently measures criteria pollutant concentrations, including ozone, CO, NO<sub>2</sub>, and particulates (both PM<sub>10</sub> and PM<sub>2.5</sub>). The air quality in the South Bay, including Menlo Park, has generally improved over the past 20 years, as motor vehicles have become cleaner, agricultural and residential burning has been curtailed, and consumer products containing ROG have been reformulated or replaced.

Table 3.2-2 identifies the national and State ambient air quality standards for relevant air pollutants along with the ambient pollutant concentrations that have been measured at the Redwood City monitoring station through the period of 2006 to 2008. Measurements over the past three years indicate that State standards for ozone were not exceeded. Particulate air quality is a moderate problem in the South Bay. There were two violations of the State 24-hour standard in 2006, and one exceedance in 2007 at Redwood City. Carbon monoxide, a product of incomplete combustion, was formerly a problem for the South Bay; but with improved motor vehicles and fuels, air quality at Redwood City easily meets State and federal standards; this is probably true for Menlo Park as well.

Existing uses adjacent to the project area include office, research and development (R&D), and light industrial uses in the center portion of the project area (see Figure 2-2 in Chapter 2, Project Description), as well as to the west and east. Bayfront Expressway and Bedwell Bayfront Park is located to the north, with US 101 and its on/off ramps to the south. Existing residential uses lie further to the south and east with recreational uses to the south at the Onetta Harris Community Center. Motor vehicles are the primary source of air pollutants in the project vicinity.

Land uses such as schools, hospitals, and convalescent homes are considered to be sensitive receptors to poor air quality because the very young, the old, and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Residential uses are also considered sensitive because people in residential areas are often at home, and therefore exposed to pollutants, for extended periods of time. Recreational areas are considered moderately sensitive to poor air quality, because vigorous exercise associated with recreation places a high demand on the human respiratory function.

The BAAQMD recommends the use of CALINE4, a dispersion model for predicting CO concentrations, as the preferred method for estimating pollutant concentrations at sensitive receptors near congested roadways and intersections. In this case, residences are close to the major traffic access routes in the project site vicinity and would be affected by traffic generated by the proposed project and other cumulative development. Exposure of these receptors to CO from existing and future traffic is discussed below in the Impacts and Mitigation Measures section.

## Regulatory Setting

Air quality within the Bay Area is addressed through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality within the Bay Area are discussed below.

**US Environmental Protection Agency.** The US EPA is responsible for setting and enforcing the federal ambient air quality standards for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The EPA also has jurisdiction over emissions sources outside state waters (outer continental shelf), and establishes various emissions standards for vehicles sold in states other than California.

<b>Table 3.2-2 Summary of Ambient Air Quality in the Project Vicinity</b>			
<b>Air Pollutants Monitored at San Mateo County Monitoring Stations</b>	<b>Year</b>		
	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>Ozone</b>			
Maximum 1-hour concentration measured	0.085 ppm	0.077 ppm	0.082 ppm
Days exceeding State 0.09 ppm 1-hour standard	0	0	0
Maximum 8-hour concentration measured	0.063 ppm	0.070 ppm	0.069 ppm
Days exceeding national 0.08 ppm 8-hour standard	0	0	0
Days exceeding State 0.07 ppm 8-hour standard	0	0	0
<b>Respirable Particulate Matter (PM<sub>10</sub>)</b>			
Maximum 24-hour concentration measured (national)	66 µg/m <sup>3</sup>	52 µg/m <sup>3</sup>	38 µg/m <sup>3</sup>
No. of days exceeding national 150 µg/m <sup>3</sup> 24-hour standard	0	0	0
Days exceeding State 50 µg/m <sup>3</sup> 24-hour standard	2	1	0
<b>Fine Particulate Matter (PM<sub>2.5</sub>)</b>			
Maximum 24-hour concentration measured	75 µg/m <sup>3</sup>	45 µg/m <sup>3</sup>	28 µg/m <sup>3</sup>
No. of days exceeding national 65 µg/m <sup>3</sup> 24-hour standard	0	0	0
<b>Carbon Monoxide (CO)</b>			
Maximum 8-hour concentration measured	2.44 ppm	2.33 ppm	2.33 ppm
Number of days exceeding national and State 9.0 ppm 8-hour standard	0	0	0
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>			
Maximum 1-hour concentration measured	0.069ppm	0.057ppm	0.069 ppm
Days exceeding State 0.25 ppm 1-hour standard	0	0	0
<p><i>Source:</i> California Air Resources Board, <a href="http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start">www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start</a>, or the BAAQMD annual air quality summaries, <a href="http://www.baaqmd.gov/pio/aq_summaries/index.htm">www.baaqmd.gov/pio/aq_summaries/index.htm</a>, 2009.</p> <p><i>Notes:</i></p> <ol style="list-style-type: none"> <li>1. ppm = parts by volume per million of air.</li> <li>2. µg/m<sup>3</sup> = micrograms per cubic meter.</li> </ol>			

As part of its enforcement responsibilities, the EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, State, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP.

**California Air Resources Board.** The ARB, a part of the California Environmental Protection Agency (Cal-EPA), is responsible for the coordination and administration of both federal and State air pollution control programs within California. In this capacity, the ARB conducts research, sets California Ambient Air Quality Standards, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The ARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hair spray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 1998, following a 10-year scientific assessment process, the ARB identified particulate matter from diesel-fueled engines as a toxic air contaminant. The ARB has since addressed this issue by preparing and approving the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (approved on September 28, 2000). This plan represents the State's comprehensive plan to substantially reduce diesel particulate emissions throughout the State. The plan contains the following three components:

1. New regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce diesel PM emissions by about 90 percent overall from current levels;
2. New retrofit requirements for existing on-road, off-road, and stationary diesel-fueled engines and vehicles where determined to be technically feasible and cost effective; and
3. New phase 2 diesel fuel regulations to reduce the sulfur content levels of diesel fuel to no more than 15 parts per million (ppm) to provide the quality of diesel fuel needed by the advanced diesel PM emission controls.

**Bay Area Air Quality Management District.** The BAAQMD is the primary agency responsible for comprehensive air pollution control in the entire San Francisco Bay Area Air Basin, including San Mateo County. To that end, the BAAQMD, a regional agency, works directly with the Association of Bay Area Governments (ABAG), the Metropolitan Transportation Commission, and local governments and cooperates actively with all federal and State government agencies. The BAAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emissions sources, and enforces such measures through educational programs or fines, when necessary.

The BAAQMD is directly responsible for reducing emissions from stationary (area and point) sources and for assuring that State controls on mobile sources are effectively implemented. It has responded to this requirement by preparing a sequence of Ozone Attainment Plans and Clean Air Plans that comply with the federal Clean Air Act and the California Clean Air Act to accommodate growth, reduce the

pollutant levels in the Bay Area, meet federal and State ambient air quality standards, and minimize the fiscal impact that pollution control measures have on the local economy. The Ozone Attainment Plans are prepared for the federal ozone standard, and the Clean Air Plans are prepared for the State ozone standards. Currently, there are two plans for the Bay Area:

- 2001 Ozone Attainment Plan, which describes the Bay Area's strategy for compliance with the federal 1-hour O<sub>3</sub> standard. Although the US EPA revoked the federal 1-hour O<sub>3</sub> standard on June 15, 2005, the emission reduction commitments in the plan are still being carried out by the BAAQMD.
- The Bay Area 2005 Ozone Strategy, which is the Bay Area's current, adopted plan describing the strategy for compliance with the state 1-hour O<sub>3</sub> standard and is the most current triennial update to the 1991 Clean Air Plan.

Although no plans are currently required to demonstrate attainment of federal or State particulate matter standards, the Clean Air Plan discusses this pollutant since the health effects of particulates can be serious, and many of the measures identified in the Plan to reduce ozone precursor emissions will also reduce ambient concentrations of particulate matter.

Although the BAAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate the air quality issues associated with plans and new development projects within the Bay Area. Instead, the BAAQMD has used its expertise and prepared the *BAAQMD CEQA Guidelines* to indirectly address these issues in accordance with the projections and programs of the Ozone Attainment Plan and Clean Air Plan. The purpose of the *BAAQMD CEQA Guidelines* is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties, in evaluating potential air quality impacts of projects and plans proposed in the Bay Area. Specifically, the *BAAQMD CEQA Guidelines* explain the procedures that the BAAQMD recommends be followed during environmental review processes required by CEQA. The *BAAQMD CEQA Guidelines* provide direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. The BAAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the Bay Area, and adverse impacts will be minimized.

**City of Menlo Park.** Local jurisdictions, such as the City of Menlo Park, have the authority and responsibility to reduce air pollution through their police power and decision-making authority. Specifically, the City is responsible for assessing the potential for and mitigating air quality problems that result from its land use decisions. The City of Menlo Park is also responsible for the implementation of transportation control measures as outlined in the Clean Air Plan.

In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces the implementation of such mitigation. The City uses the *BAAQMD CEQA Guidelines* as its guidance document for the environmental review of plans and development proposals within its jurisdiction.

The City of Menlo Park's General Plan does not contain any goals or policies specific to air quality.

## **Impacts and Mitigation Measures**

---

### **Air Quality Analysis Methodology**

**Consistency with the Clean Air Plan.** Although the *BAAQMD CEQA Guidelines* identify specific significance thresholds for a project's emissions or concentrations of most criteria air pollutants (as specified below), there is no similar air quality-related threshold or methodology to determine whether a general development project would conflict with or obstruct implementation of the Clean Air Plan. The *BAAQMD CEQA Guidelines* specify that, in jurisdictions where the local general plan is consistent with the Clean Air Plan (as is Menlo Park's General Plan), if a project is consistent with the local general plan's land use designation, then it is consistent with the Clean Air Plan. For the purposes of this analysis, where there would be a General Plan amendment as part of the project, the analysis will focus on the project's effects on consistency of the City's General Plan with the General Plan amendment and with the most recently adopted regional air quality plan. The analysis below uses the ABAG population and employment forecasts that were in place at the time of writing of the regional air quality plan. The most recently adopted regional air quality plan is the Bay Area 2005 Ozone Strategy, which was based on ABAG's *Projections 2003*.

**Construction Period Emissions.** Construction-related activities are generally short-term in duration, and the BAAQMD does not recommend any thresholds of significance for their associated emissions. Instead, the BAAQMD bases the determination of significance on a consideration of the control measures to be implemented. If all appropriate emissions control measures recommended by the *BAAQMD CEQA Guidelines* are implemented for a project, then construction emissions are not considered significant. Currently, these control measures only apply to emissions of fugitive dust. Emission controls are not required for the emissions generated by construction vehicle engines.

One of the reasons that construction-level air quality emissions are not compared with a quantified threshold is that the construction industry is an existing source of emissions within the Bay Area, and the entire State. In general, construction equipment operates at one site for a short time, and when finished, moves on to a new construction site. The same situation occurs for the construction employees who make a living going from one site to another doing similar construction work. For those reasons, construction exhaust emissions are included in the regional emission inventory that is the basis for regional air quality plans. Further as shown in Table 4 on page 12 of the *Revised San Francisco Bay Area Ozone Attainment Plan for the 1-Hour National Ozone Standard* (2001), construction equipment comprises a good portion of the past, existing, and future (through 2006) emission inventory within the Bay Area. Also, Table 1 on page 3 of the *Bay Area 2000 Clean Air Plan* states that PM<sub>10</sub> emissions from "other sources" include construction operations for the past, present, and future (2006) emissions inventory. For these reasons, the BAAQMD does not expect construction emissions to impede attainment or maintenance of ozone or CO standards in the Bay Area.

**Operational Emissions – Daily Emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>.** The BAAQMD currently recommends that projects with operational emissions that exceed any of the following thresholds be

considered significant. These thresholds apply to the operational emissions associated with individual projects only; they do not apply to construction-related emissions. The operational emissions that are generated by individual projects and exceed these thresholds are also considered to be cumulatively considerable by the BAAQMD.

- 80 pounds per day (ppd) of ROG
- 80 ppd of NO<sub>x</sub>
- 80 ppd of PM<sub>10</sub>

Also, operational emissions of CO are considered significant if they cause or contribute to violations of the federal or State ambient air quality standards for CO (i.e., 35 ppm and 20 ppm, respectively, for one-hour averages; 9 ppm for eight-hour averages).

**Operational Emissions – Toxic Air Contaminants.** The BAAQMD recommends that projects that could emit carcinogenic or TACs that exceed the maximum individual cancer risk of 10 in one million or a hazard index greater than 1 be considered significant.

## Standards of Significance

The proposed project would result in a significant impact if it would:

- **Impact Criterion #1:** Conflict with or obstruct implementation of the applicable air quality plan.
- **Impact Criterion #2:** Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- **Impact Criterion #3:** Expose sensitive receptors to substantial pollutant concentrations.
- **Impact Criterion #4:** Create objectionable odors affecting a substantial number of people.
- **Impact Criterion #5:** 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).

## Project Evaluation

The following analysis is based both on trip rates associated with the proposed GPA/ZOA included in Section 3.11, Traffic and Circulation, when applicable, as well as development that could occur under the proposed Menlo Gateway project.

***Impact AQ-1:** Development within the project area would result in an increase in pollutant emissions; however, it would not conflict with or obstruct implementation of the Clean Air Plan. (LTS)*

The Clean Air Plan was prepared to accommodate growth, reduce the pollutant levels in the Bay Area, meet federal and State ambient air quality standards, and minimize the fiscal impact that pollution control measures have on the local economy. The Clean Air Plan assumed that future growth would

occur within the General Plan and zoning restrictions in effect at the time of its adoption. As mentioned in Chapter 2, Project Description, the project's current General Plan designation and M-2 zoning could allow for some of the proposed project's office uses, but would not permit hotel and related facilities; such uses would require the site to be redesignated in the General Plan and rezoned to the proposed M-3 district. Under the M-3 zoning, the development potential would be greater than under the M-2 zoning upon which the Clean Air Plan projections were based. Thus, there is potential for the proposed project to result in greater emissions than were predicted under the Clean Air Plan.

The most recent ozone attainment plan is the Bay Area 2005 Ozone Strategy. This plan uses ABAG's *Projections 2003* as the basis for future growth projections.<sup>1</sup> *ABAG Projections 2003* indicates that the population in the City of Menlo Park would be 41,200 persons in the year 2025, and that there would be 37,050 jobs in the City in 2025. These projections are greater than were assumed in the most recent update to the ABAG projections (*Projections 2007*), as shown in Section 3.9, Population and Housing. As stated in Section 3.9, Population and Housing, the increase in employment generated by the proposed project is consistent with the projections within the *ABAG Projections 2007*, which projected less population and employment growth than was assumed in the *Projections 2003*. Therefore, the project would also be consistent with the *ABAG Projections 2003* on which the 2005 Ozone Strategy was based. Although the development potential in the project area is greater than would be allowed under existing zoning, the anticipated growth would have been accounted for in the 2005 Ozone Strategy. Therefore, it would not conflict with implementation of the 2005 Ozone Strategy.

In addition, Chapter 4 of the *BAAQMD CEQA Guidelines* also identifies a number of measures that can be implemented to reduce air quality impacts of new development projects. Several of these measures are already included as part of the project, as outlined in Chapter 2, Project Description, and would help to reduce the emissions that would otherwise be generated by the project. Under the City of Menlo Park and the City/County Association of Governments (C/CAG) requirements, the proposed project would be required to implement a Transportation Demand Management (TDM) program because the project would generate 100 or more peak hour trips (see Section 3.11, Traffic and Circulation). Specific measures recommended in the *BAAQMD CEQA Guidelines* include the following:

- Implement carpool/vanpool program;
- Provide on-site shops and services for employees;
- Provide secure, weather-protected bicycle parking for employees;
- Provide showers and lockers for employees bicycling or walking to work;
- Provide safe, direct access for bicyclists to adjacent bicycle routes; and
- Provide direct, safe, attractive pedestrian access from project to adjacent development.

All of the above measures have been included as part of the project, as well as additional measures listed in Chapter 2.

---

<sup>1</sup> The *ABAG Projections 2003* include the City of Menlo Park as well as the City's Sphere of Influence.

As discussed above, the proposed project would be within the population and employment estimates of the 2005 Ozone Strategy. The proposed project would also comply with the BAAQMD's recommended transportation control and trip reduction measures. Therefore, the proposed project would not conflict with or obstruct the implementation of the Clean Air Plan and the impact is less than significant.

***Impact AQ-2: Construction activities associated with the proposed project would generate dust or diesel emissions exposing people to particulate matter. This would be a temporary but potentially significant impact. (PS)***

The 16-acre project area includes existing one- and two-story buildings at the Independence site totaling approximately 85,000 square feet (sf), and one- and two-story buildings at the Constitution site totaling approximately 134,000 sf. There are also surface parking lots and vacant parcels, at each of the two sites (Constitution site and the Independence site). The existing structures and pavement on the project site would be demolished as part of the proposed project. After demolition, construction activities would include site preparation, grading, placement of utilities and other infrastructure, placement of foundations for structures, and actual construction of the structures. Demolition and construction activities would require the use of heavy trucks, excavating and grading equipment, concrete crusher, concrete mixers, and other mobile and stationary construction equipment. Emissions during demolition and construction would be caused by material handling, traffic on unpaved or unimproved surfaces, demolition of structures, use of paving materials and architectural coatings, exhaust from construction worker vehicle trips, and exhaust from diesel-powered construction equipment.

Heavy construction activity on dry soil exposed during construction activities could cause dust emissions (usually monitored as PM<sub>10</sub>), which could be annoying and/or unhealthy to persons near the construction area. ROG, NO<sub>x</sub>, CO, and particulate matter emissions also would result from the combustion of diesel fuel by heavy equipment and construction worker vehicles. Throughout the construction period, construction and demolition-related emissions would vary day-to-day depending on the phase of the proposed project. When considered in the context of long-term proposed project operations, demolition and construction-related emissions would be short-term and temporary, but these activities could still cause significant effects on local air quality.

The BAAQMD does not recommend any thresholds of significance for construction-related emissions. Instead, the BAAQMD bases the determination of significance on a consideration of the control measures to be implemented to reduce construction emissions. At this time, the only construction-related control measures the BAAQMD recommends are those related to dust. If all appropriate emissions control measures recommended by the *BAAQMD CEQA Guidelines* relating to dust are implemented for a project, then construction emissions are considered less than significant. Conversely, if all of the appropriate emissions control measures recommended by the BAAQMD are not implemented, then construction emissions are considered significant, unless the lead agency explains in detail why a specific measure is unnecessary or infeasible. Because the project would generate PM<sub>10</sub> and emissions from construction equipment, the impact is considered potentially significant.

MITIGATION MEASURE. Mitigation Measure AQ-2.1 includes all appropriate dust control measures recommended by the BAAQMD. Inclusion of these measures in the construction contracts for future development in the project area would reduce construction-related air quality impacts to a less-than-significant level. Although there are no construction-phase significance thresholds for ozone precursor emissions, Mitigation Measure AQ-2.2 would reduce the emissions generated by heavy-duty diesel-powered construction equipment operating in the project area to a less-than-significant level. Implementation of Mitigation Measures AQ-2.1 and AQ-2.2 would reduce construction-related impacts to a less-than-significant level. (LTS)

*AQ-2.1 Implement Recommended Dust Control Measures.* To reduce particulate matter emissions during project demolition, excavation and construction phases, the project contractor(s) shall comply with the dust control strategies developed by the BAAQMD. The project sponsor shall include in all construction contracts the following requirements, or measures shown to be equally effective.

- All trucks hauling soil, sand, and other loose construction and demolition debris from the site shall be covered, or all such trucks shall maintain at least two feet of freeboard.
- All exposed or disturbed soil surfaces in active construction areas shall be watered at least twice daily.
- All unpaved parking areas and staging areas shall either be paved, watered three times daily, or treated with (non-toxic) soil stabilizers.
- All paved parking areas and staging areas shall be swept daily (with water sweepers).
- Mud and dirt carried onto paved streets from the construction areas shall be cleaned daily.
- Exposed stockpiles (i.e., dirt, sand, etc.) shall be enclosed, covered, watered twice daily or non-toxic soil binders applied.
- Traffic speeds shall be limited on unpaved roads to 15 mph.
- Sandbags or other erosion control measures shall be used to prevent silt runoff to public roadways.
- Vegetation in disturbed areas shall be replanted as quickly as possible.
- Wheel washers shall be installed for all exiting trucks, or truck tires and tracks of all trucks and equipment leaving the site shall be washed.
- Wind breaks at the windward side(s) of construction areas shall be installed.
- Excavation and grading activity shall be suspended when winds (instantaneous gusts) exceed 25 miles per hour over a 30-minute period or more.
- To the extent possible, the area subject to excavation, grading, and other dust-generating construction activity shall be limited to only one activity.

*AQ-2.2 Reduce Emissions from Heavy-duty Diesel-powered Equipment.* The project sponsor shall include in all construction contracts the following requirements, or measures shown to be equally effective, to reduce the emissions generated by heavy-duty diesel-powered construction equipment operating in the project area by the following means:

- All construction equipment shall be maintained in proper working condition in accordance with manufacturer's specifications.
- Diesel-powered construction equipment shall comply with the BAAQMD requirements or meet Tier 3 or Tier 4 EPA/ARB standards.
- To the extent feasible, the existing electricity infrastructure surrounding the construction sites shall be used rather than electrical generators powered by internal combustion engines.

***Impact AQ-3:*** *Operation of the proposed project would create new area and mobile sources of air pollutants that would generate emissions of NO<sub>x</sub>, and PM<sub>10</sub> that would exceed BAAQMD's significance thresholds. This impact would be significant. (S)*

Operational emissions generated by both stationary and mobile sources would result from normal day-to-day activities proposed in the project area. Stationary and area source emissions would be generated by the consumption of natural gas for space and water heating devices, the operation of landscape maintenance equipment, and the use of consumer products. Mobile emissions would be generated by the motor vehicles traveling to and from the project area.

The analysis of daily operational emissions has been prepared using the URBEMIS 2007 (Version 9.2.4) computer model recommended by the BAAQMD and the projected daily motor vehicle trip generation for the proposed project. As shown in Section 3.11, Traffic and Circulation, the proposed project would generate approximately 11,113 net new daily trips to the project area. This trip generation figure of 11,113 trips is based on the average number of daily trips for office buildings, retail and hotel uses, as found in the most recent Institute of Transportation Engineers (ITE) Trip Generation Manual. URBEMIS 2007 incorporates these daily trip rates into its calculations. The estimated daily emissions for stationary and mobile sources associated with operation of the proposed project are identified in Table 3.2-3 along with the thresholds of significance recommended by the BAAQMD. As shown, the average daily emissions would exceed the thresholds of significance recommended by the BAAQMD for NO<sub>x</sub>, and PM<sub>10</sub>.

As noted above under Impact AQ-1, the proposed project would be required to include a TDM program and has already included many of the TDM measures as part of the project. Incorporation of the required TDM measures would result in emissions below those predicted in Table 3.2-3. Therefore, the actual air quality impact could be less than that predicted without the TDM program credits. However, since operational emissions under the model indicate an exceedance of the BAAQMD thresholds, impacts would be significant.

<b>Table 3.2-3</b>					
<b>Projected Daily Operational Stationary and Mobile Source Emissions at the Independence and Constitution Sites</b>					
<b>Emission Source</b>	<b>Emissions in Pounds Per Day</b>				
	<b>ROG</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>SO<sub>2</sub></b>	<b>PM<sub>10</sub></b>
<b>Existing Emissions</b>					
Stationary/Area	1.51	1.48	2.77	0.00	0.01
Mobile	17.98	21.31	221.14	0.20	36.01
<b>Total Emissions</b>	<b>19.49</b>	<b>22.79</b>	<b>223.91</b>	<b>0.20</b>	<b>36.02</b>
<b>Proposed Project</b>					
Stationary/Area	6.44	7.48	13.93	0.00	0.04
Mobile	88.99	107.11	1,094.69	1.01	180.59
<b>Total Emissions</b>	<b>95.43</b>	<b>114.59</b>	<b>1,108.62</b>	<b>1.01</b>	<b>180.63</b>
<i>Net Increase Above Existing Emissions</i>	<i>75.94</i>	<i>91.80</i>	<i>884.71</i>	<i>0.81</i>	<i>144.61</i>
<b>BAAQMD Thresholds</b>	<b>80.00</b>	<b>80.00</b>	<b>NT</b>	<b>NT</b>	<b>80.00</b>
<b>Significant Impact?</b>	<b>No</b>	<b>Yes</b>	<b>NT</b>	<b>NT</b>	<b>Yes</b>
<i>Source:</i> PBS&J, 2008. Based on long-range year 2025 emission factors.					
<i>Note:</i> NT - No threshold.					

MITIGATION MEASURE. The TDM measures identified in Section 3.11, Traffic and Circulation, would serve to further reduce the trip generation from the proposed project and thus the mobile source emissions. However, the TDM measures would need to reduce daily trips by about 12 percent to reduce emissions for NO<sub>x</sub> and at least 36 percent to reduce emissions to below BAAQMD thresholds for PM<sub>10</sub>. If the TDM measures resulted in a 13 percent reduction of project-related trips, the net increase in project emissions of NO<sub>x</sub> would be reduced to below the BAAQMD threshold of 80 pounds per day. Even with a 13 percent reduction in project-related trips, the net increase in project emissions of PM<sub>10</sub> would exceed the BAAQMD thresholds. However, to be conservative, no trip credits were taken for the proposed project as part of this analysis. Because it is unknown what level of effectiveness the proposed TDM measures would have, and because, even with TDM measures, project emissions of NO<sub>x</sub> or PM<sub>10</sub> would exceed the BAAQMD thresholds, the exceedance of the BAAQMD significance standards for these criteria pollutants would remain significant and unavoidable. (SU)

**Impact AQ-4:** *The addition of project-related traffic would result in increased concentrations of carbon monoxide around intersections in the project vicinity, but not to the extent that the ambient air quality standards for CO would be exceeded. As a result, impacts of localized CO concentrations would be less than significant. (LTS)*

Because project-related traffic would affect intersections that would be operating at Level of Service (LOS) D or worse, under future conditions, project traffic has the potential to generate emissions of CO that could adversely affect localized air quality. CO emissions are specifically analyzed at congested intersections as opposed to other criteria pollutants, because CO tends to form and settle at localized areas where vehicle idling occurs, such as roadway intersections. CO hotspots could potentially affect sensitive receptors within or adjacent to the project area.

The CALINE4 model was used to predict near term CO concentrations at selected locations with and without the proposed project. The results of these calculations are presented in Table 3.2-4, which shows that the predicted CO concentrations at these receptors would not exceed the national or State 1-hour and 8-hour ambient air quality standards for CO. Because the localized CO concentrations around these congested intersections would not violate CO standards, impacts at these and less congested roadway intersections would not be significant. It should also be noted that based on the modeling results, the proposed project would not be expected to change the CO concentration at any of the identified intersections. Therefore, traffic generated by the proposed project would not expose sensitive receptors to substantial pollutant concentrations. Consequently, there would be no significant adverse CO impacts, and the impact is considered less than significant.

<b>Table 3.2-4 Near Term Scenario – Carbon Monoxide Concentrations at Selected Locations</b>				
<b>Closest Intersection</b>	<b>One-Hour Average CO (ppm)</b>		<b>Eight-Hour Average CO (ppm)</b>	
	<b>Future Baseline</b>	<b>Future w/Project</b>	<b>Future Baseline</b>	<b>Future w/Project</b>
Bayfront Expressway/Haven Avenue	2.7	2.7	1.9	1.9
Willow Road/Bayfront Expressway	2.8	2.8	1.9	1.9
Bayfront Expressway/Chrysler Road	2.6	2.6	1.8	1.8
Chrysler/Constitution Drive	2.4	2.4	1.6	1.6
There are no violations of ambient CO standards at any of the receptor locations above.				
CO Background: One-Hour Average -- 2.3 ppm Eight-Hour Average -- 1.6 ppm		Ambient CO Standards: One-Hour Average -- Federal: 35 ppm; State 20 ppm Eight-Hour Average -- Federal and State: 9 ppm		
<i>Source: PBS&amp;J, 2008.</i>				

**Impact AQ-5:** *The proposed project would not expose sensitive receptors to substantial toxic air contaminants. This impact would be less than significant. (LTS)*

Diesel particulate matter (DPM), a known toxic air contaminant (TAC), would be emitted from diesel-powered delivery trucks traveling to and from the project area. To address DPM and other TAC

emissions, ARB has prepared an *Air Quality and Land Use Handbook: A Community Health Perspective* (April 2005) as an “informational guide” to prioritize the important sources of TACs and reduce exposures to proximate populations. Among the important sources of DPM it identifies are distribution centers, warehouses, and other facilities that accommodate 100 or more large diesel trucks per day, and it recommends that no new residential uses be located within 1,000 feet of such facilities (or conversely that no new large sources of DPM be located near existing residential uses).

The proposed project does not include the types of facilities listed above that generate substantial truck trips. The proposed project would not be expected to attract a level of truck deliveries/pickups per day that would exceed the screening level recommended by ARB. In addition, the nearest residential uses or sensitive receptors to the project area would be more than 1,000 feet across US 101 west of the Independence site and also south of Chilco Street to the east. Therefore, the effects of the DPM emissions from future truck delivery operations in the project area would not be expected to be significant and thus project-generated TACs is a less-than-significant impact.

*Impact AQ-6: The proposed project would not be expected to create objectionable odors that would affect a substantial number of people. This impact would be less than significant. (LTS)*

The occurrence and severity of potential odor impacts depend on several factors: the nature of the source, the frequency and strength of the emissions, the presence/absence of odor-sensitive receptors near the source, and the local pattern of wind speeds and directions. While offensive odors rarely cause any physical harm, they can be unpleasant and cause distress among the public and generate citizen complaints.

Construction activities occurring in association with the proposed project would generate airborne odors associated with the operation of construction vehicles (i.e., diesel exhaust) and the application of architectural coatings. These emissions would likely occur during daytime hours only and would be isolated to the immediate vicinity of the construction site and activity. There are no residential uses adjacent to the project area. The nearest existing residential uses are located more than 1,000 feet across US 101 west of the project area or south in the Belle Haven community. Therefore, odors from project construction would not affect a substantial number of people.

Hotel and office uses are not among the land uses that the BAAQMD has identified as prime sources of odors (such sources include wastewater treatment plants, sanitary landfills, and certain manufacturing plants). The most likely potential operational airborne odors associated with operation of the project hotel/office uses could emanate from refuse storage area(s). These odors would be confined to the immediate vicinity of the storage area(s), and since the refuse receptacles would have lids and be emptied on a regular basis, substantial odors would not likely have a chance to develop. In addition, as mentioned the nearest residential uses to the project area are more than 1,000 feet across a major freeway and south across Chilco Street. Therefore, there would be no significant adverse odor impacts to on-site or off-site sensitive receptors, and project-related odor impacts would be less than significant.

## Cumulative Impacts

The geographic context for addressing cumulative impacts of the proposed project on regional air quality is the San Francisco Bay Area Air Basin. The *BAAQMD CEQA Guidelines* cumulative significance criteria is applied to the cumulative analysis of impacts to regional air quality, as discussed below. The geographic context for a discussion of cumulative impacts to localized air quality, such as for CO and PM<sub>10</sub>, is the Menlo Park vicinity, in which the proposed project is located. This cumulative analysis examines the effects of the proposed project, in combination with other current projects, probable future projects, and projected future growth within the City in the next 20 years.

Odors are not addressed cumulatively for this project because the types of uses anticipated to be developed or allowed under the proposed M-3 zoning would not generate significant sources of odor. In addition, the project area is not located in an area where existing or future odor-producing uses are proposed. Therefore, the additive effect of assessing cumulative odor impacts is not relevant for this project.

***Impact AQ-1CM:*** *The proposed project, combined with other development within the City, would be consistent with the Ozone Attainment Plan and the Clean Air Plan. This would be a less-than-significant cumulative impact. (LTS)*

Clean Air Plan control strategies were intended to reduce the Bay Area's high ozone levels without significantly restricting regional population and economic growth. Consequently, as long as growth in the City of Menlo Park is within ABAG growth projections (which in turn depend on an assumption of future development adhering to local zoning restrictions in place at the time of Clean Air Plan adoption) and as long as new development projects in Menlo Park make efforts to reduce the number of vehicle trips associated with their land uses, implementation of the Clean Air Plan would not be obstructed by cumulative growth. As stated under Impact AQ-1, the proposed project would result in greater development under the new M-3 zoning; however, the anticipated growth associated with the proposed development would be consistent with current ABAG projections and also the assumptions that were included in the most recent Clean Air Plan (from *ABAG Projections 2003*). Additionally, the proposed project would implement transportation control and trip reduction measures that are consistent with the BAAQMD's goals for reducing regional air pollutant emissions, as would likely be the case for all other development projects approved under the City of Menlo Park's environmental review process. Therefore, the project's contribution to conflicts with or obstruction of implementation of the Ozone Attainment Plan and the Clean Air Plan is less than considerable, and the cumulative effects with the proposed project would be less than significant.

***Impact AQ-2CM:*** *Construction activities associated with the project combined with other construction activities in the City could generate dust or diesel emissions, thus exposing people to particulate matter. This is considered a potentially significant impact. (PS)*

The Bay Area is in nonattainment for State PM<sub>10</sub> standards. Accordingly, the proposed project, in combination with other foreseeable development that involve land-disturbing construction activities, would generate fugitive dust and small particulate matter. While construction-related emissions are

localized and tend not to cumulate with other projects unless they are immediately nearby, the proposed project would build out over a five-year period, and it is possible that other projects could occur in the project vicinity in this time frame. Nevertheless, all projects considered for development in the City of Menlo Park are required to implement appropriate dust control and diesel-powered combustion equipment measures recommended by the BAAQMD. As discussed above under Impact AQ-2, the project would exceed the BAAQMD thresholds for PM<sub>10</sub>. Therefore, the project's contribution to the overall cumulative impact would be considerable resulting in a potentially significant cumulative impact.

MITIGATION MEASURE. Mitigation Measure AQ-2.1, identified for the proposed project, includes all appropriate dust control measures recommended by the BAAQMD; therefore, construction-related air quality impacts associated with the proposed project would be reduced to a less-than-significant level. Mitigation Measure AQ-2.2 would reduce the emissions generated by heavy-duty diesel-powered construction equipment operating in the project area to a less-than-significant level. These measures would reduce the project's contribution to cumulative construction emissions to less than cumulatively considerable. In addition, these same measures would apply to other construction projects that might occur in the vicinity of the project area. As a result, the cumulative impact would be considered to be less than significant. (LTS)

***Impact AQ-3CM: Implementation of the proposed project combined with other cumulative development in the City would create new area and mobile sources of air pollutants that would generate emissions of NO<sub>x</sub> and PM<sub>10</sub> resulting in a cumulatively significant impact. (S)***

According to the *BAAQMD CEQA Guidelines*, any project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact.<sup>2</sup>

The daily operational emissions of NO<sub>x</sub> and PM<sub>10</sub> from the proposed project would individually exceed the thresholds in the *BAAQMD CEQA Guidelines*, as shown under Impact AQ-3. Therefore, there is expected to be a cumulatively significant impact as well with respect to these pollutants.

MITIGATION MEASURE. The TDM measures identified in Section 3.11, Traffic and Circulation, would serve to further reduce the trip generation from the proposed project and thus the mobile source emissions. This would potentially reduce impacts from project-related NO<sub>x</sub> emissions to a less-than-significant level, but not PM<sub>10</sub>. Because the traffic report does not take credit for these reductions as the effectiveness of these measures is unknown, it is conservatively assumed that the TDM measures would not reduce impacts for NO<sub>x</sub> or PM<sub>10</sub> to a less-than-significant level. As a result, the proposed project's contribution to cumulative effects would remain significant and unavoidable. (SU)

---

<sup>2</sup> BAAQMD, *CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans*, Chapter 2.3, p. 18, April 1996.

**Impact AQ-5CM:** Cumulative development in the project vicinity would not result in carbon monoxide concentrations above the ambient air quality standards. Therefore, cumulative impacts on localized CO concentrations would be less than significant. (LTS)

Cumulative traffic levels from DKS Associates (see Section 3.11, Traffic and Circulation, of this document) were used in the CALINE4 model to predict future cumulative CO concentrations. The results of these calculations are presented in Table 3.2-5. As shown, future cumulative CO concentrations at the modeled receptor locations would not exceed the national or State 1-hour and 8-hour ambient air quality standards for CO. Accordingly, implementation of the proposed project in combination with other foreseeable development in the City would not expose any sensitive receptors to substantial CO concentrations, and the cumulative effect on CO would be less than significant.

Closest Intersection	One-Hour Average CO (ppm)		Eight-Hour Average CO (ppm)	
	Cumulative Future Baseline (2025)	Cumulative Future w/Project (2025)	Cumulative Future Baseline (2025)	Cumulative Future w/Project (2025)
Bayfront Expressway/Haven Avenue	2.3	2.3	1.6	1.6
Willow Road/Bayfront Expressway	2.0	2.0	1.4	1.4
Bayfront Expressway/Chrysler Road	2.2	2.2	1.8	1.8
Chrysler/Constitution Drive	2.1	2.1	1.6	1.6
There are no violations of ambient CO standards at any of the receptor locations above.				
CO Background:		Ambient CO Standards:		
One-Hour Average -- 2.3 ppm		One-Hour Average -- Federal: 35 ppm; State 20 ppm		
Eight-Hour Average -- 1.6 ppm		Eight-Hour Average -- Federal and State: 9 ppm		
<i>Source:</i> PBS&J, 2008.				

**Impact AQ-6CM:** The proposed project, combined with other foreseeable development in the project vicinity, would not expose sensitive receptors to substantial toxic air contaminants. Therefore, cumulative impacts from these pollutants would be less than significant. (LTS)

The proposed project, combined with other foreseeable development in the City of Menlo Park, is not expected to expose sensitive receptors to substantial TAC concentrations. The proposed uses in the project area would not be major sources of TACs, so the project’s contribution to cumulative effects would be less than considerable. As a result, the project’s contribution to cumulative impacts from TACs is considered less than significant. In addition, the BAAQMD’s regulations and permitting requirements would set stringent conditions on any proposed TAC sources, which would protect sensitive receptors from substantial TAC concentrations.