4.4 AIR QUALITY

4.4 AIR QUALITY

INTRODUCTION

The Air Quality section describes the effects of the Downtown Specific Plan on local and regional air quality. The section includes a discussion of the existing air quality; construction-related air quality impacts resulting from grading and equipment emissions; direct and indirect emissions associated with the project; the impacts of these emissions on both the local and regional scale; and mitigation measures warranted to reduce or eliminate any identified significant impacts. The section is based on an *Air Quality Impact Analysis* (included as Appendix F of this DEIR) provided by Don Ballanti, Certified Consulting Meteorologist[1]. Information for the Air Quality section was also drawn from the City of Brentwood General Plan[2] and its associated EIR.[3]

ENVIRONMENTAL SETTING

The following setting information provides an overview of the existing air quality in the Downtown Brentwood area, located within the Brentwood City Limits, in eastern Contra Costa County. In addition, the regulatory agencies and required permits associated with air quality are described.

Existing Conditions

Brentwood is located on the south side of the San Joaquin River delta, east of the Carquinez Straits. Brentwood's location between the greater Bay Area and the Central Valley has great influence on the climate and air quality of the area. Brentwood is located at the eastern boundary of the nine-county San Francisco Bay Area Air Basin. Brentwood is also a few miles west of San Joaquin County, which is part of the 8-county San Joaquin Valley Air Basin.

Brentwood has a relatively low potential for air pollution given the persistent and strong winds typical of the area. Wind records from the closest wind-measuring sites show a strong predominance of westerly winds. Average wind speed is relatively high and the frequency of calm winds is quite low. These winds dilute pollutants and transport them away from the area, so that emissions released in the project area have more influence on air quality in the Sacramento and San Joaquin valleys than they do locally. However, several major stationary sources currently exist in upwind cities that can influence local air quality. In addition, the project's location downwind of the greater Bay Area also means that pollutants from other areas are transported to the area.

Attainment Status and Regional Air Quality Plans

The federal Clean Air Act and the California Clean Air Act of 1988 require that the State Air Resources Board, based on air quality monitoring data, designate portions of the state where the federal or State ambient air quality standards are not met as "non-attainment areas." Because of the differences between the national and State standards, the designation of non-attainment areas is different under the federal and State legislation.

The Bay Area is currently classified as non-attainment for 1-hour ozone standard. However, in April 2004, U.S. EPA made a final finding that the Bay Area has attained the national 1-hour ozone standard. The finding of attainment does not mean the Bay Area has been reclassified as an attainment area for the 1-hour standard. The region must first submit a re-designation request to EPA in order to be reclassified as an attainment area.

In addition, the U. S. Environmental Protection Agency (USEPA) has classified the San Francisco Bay Area as a non-attainment area for the federal 8-hour ozone standard. The Bay Area was designated as unclassifiable/attainment for the federal $PM_{2.5}$ standards.

Under the California Clean Air Act, Contra Costa County is a non-attainment area for ozone and particulate matter (PM_{10} and $PM_{2.5}$). The County is either attainment or unclassified for other pollutants. The California Clean Air Act requires local air pollution control districts to prepare air quality attainment plans. These plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods, or if not, the plans must provide for adoption of "all feasible measures on an expeditious schedule."

Sensitive Receptors

The Bay Area Air Quality Management District (BAAQMD) defines sensitive receptors as facilities where sensitive receptor population groups (children, the elderly, the acutely ill and the chronically ill) are likely to be located. These land uses include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics.

Sensitive land uses within or near the project area include residential properties and the Liberty Union High School, Edna Hill Middle School, and Faith Christian Learning Center.

Local Air Quality Monitoring

The federal Clean Air Act and the California Clean Air Act require all areas of California to be classified as attainment, non-attainment, or unclassified as to their status with regard to the national and/or State Ambient Air Quality Standards. The BAAQMD has for many years operated a multi-pollutant monitoring site in nearby Bethel Island. Table 4.4-1 shows historical occurrences of pollutant levels exceeding the State/federal ambient air quality standards for the three-year period (2002-2004). The number of days that each standard was exceeded is shown.

Table 4.4-1
Air Quality Data Summary for Bethel Island (2002-2004)

Pollutant	Standard		Days Exceeding Standard During:		
	State	Federal	2002	2003	2004
Ozone (O_3)	1-Hour	—	5	0	1
	—	1-Hour	0	0	0
	—	8-Hour	3	0	0
Carbon Monoxide (CO)	8-Hour	8-Hour	0	0	0
	1-Hour	—	0	0	0
Nitrogen Dioxide (NO_2)	1-Hour	—	0	0	0
Sulfur Dioxide (SO_2)	1-Hour	—	0	0	0
	24-Hour	—	0	0	0
PM_{10}	24-Hour	—	3	1	0
	—	24-Hour	0	0	0

Source: Air Resources Board, Aerometric Data Analysis and Management (ADAM), 2005. (http: //www.arb.ca.gov./adam/cgi-bin/adamtop/d2wstart)

Table 4.4-1 shows that all federal ambient air quality standards are met in the Brentwood area with the exception of ozone. Additionally, the state ambient standards of ozone and PM_{10} are regularly exceeded.

***Ozone*:** Ozone is produced by chemical reactions, involving nitrogen oxides (NO_x) and reactive organic gases (ROG) that are triggered by sunlight. Nitrogen oxides are created during combustion of fuels, while reactive organic gases are emitted during combustion and evaporation of organic solvents. Because ozone is not directly emitted to the atmosphere, but is formed as a result of photochemical reactions, it is considered a secondary pollutant. In the San Joaquin Valley Air Basin, which is located only a few miles to the west of Brentwood, ozone is a seasonal problem, occurring roughly from April through October.

Ozone is a strong irritant that attacks the respiratory system, leading to the damage of lung tissue. Asthma, bronchitis, and other respiratory ailments as well as cardiovascular diseases are aggravated by exposure to ozone. A healthy person exposed to high concentrations may become nauseated or dizzy, may develop headache or cough, or may experience a burning sensation in the chest.

Research has shown that exposure to ozone damages the alveoli (the individual air sacs in the lung where the exchange of oxygen and carbon dioxide between the air and blood takes place). Research has shown that ozone also damages vegetation.

***Suspended Particulate**:* Suspended particulate matter (PM) is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such

as metals, soot, soil, and dust. "Inhalable" PM consists of particles less than 10 microns in diameter, and is defined as "suspended particulate matter" or PM_{10}. Particles between 2.5 and 10 microns in diameter arise primarily from natural processes, such as wind-blown dust or soil.

Fine particles are less than 2.5 microns in diameter ($PM_{2.5}$). $PM_{2.5}$, by definition, is included in PM_{10}. Fine particles are produced mostly from combustion or burning activities. Fuel burned in cars and trucks, power plants, factories, fireplaces and wood stoves produces fine particles.

The level of fine particulate matter in the air is a public health concern because it can bypass the body's natural filtration system more easily than larger particles, and can lodge deep in the lungs. The health effects vary depending on a variety of factors, including the type and size of particles. Research has demonstrated a correlation between high PM concentrations and increased mortality rates. Elevated PM concentrations can also aggravate chronic respiratory illnesses such as bronchitis and asthma.

Carbon Monoxide: Carbon monoxide is a local pollutant in that high concentrations are found only very near the source. The major source of carbon monoxide, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes.

Carbon monoxide's health effects are related to its affinity for hemoglobin in the blood. At high concentrations, carbon monoxide reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity and impaired mental abilities.

Carbon monoxide concentrations are highly seasonal, with the highest concentrations occurring in the winter. The seasonality is partly due to the fact that automobiles create more carbon monoxide in colder weather and also partly due to the very stable atmospheric conditions that exist on cold winter evenings when winds are calm. Concentrations typically are highest during stagnant air periods occurring most commonly from November through January.

Nitrogen Oxide: Nitrogen oxides (NO_X) are produced from burning fuels, including gasoline and coal. Nitrogen oxides react with ROG (found in paints and solvents) to form smog, which can harm health, damage the environment, and cause poor visibility. Additionally, NO_X emissions are a major component of acid rain. Health effects related to NO_X include lung irritation and lung damage.

Sulfur Dioxide: Sulfur dioxides (SO_2) are colorless gases and constitute a major element of pollution in the atmosphere. SO_2 is commonly produced by fossil fuel combustion. In the atmosphere, SO_2 is usually oxidized by ozone and hydrogen

peroxide to form sulfur trioxide (a secondary pollutant). If SO_2 is present during condensation, acid rain may occur.

Toxic Air Contaminants: In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. Unlike criteria pollutants, safe levels of exposure to TACs cannot be established, and many different types of TACs exist, with varying degrees of toxicity. Sources of TAC's include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage and death.

Diesel exhaust is a TAC of growing concern in California. The California Air Resources Board (CARB) in 1998 identified diesel engine particulate matter as a TAC. The exhaust from diesel engines contains hundreds of different gaseous and particulate components, many of which are toxic. Many of these compounds adhere to the particles, and because diesel particles are so small, they penetrate deep into the lungs. Diesel engine particulate has been identified as a human carcinogen. Mobile sources, such as trucks, buses, automobiles, trains, ships and farm equipment, are by far the largest source of diesel emissions.

REGULATORY CONTEXT

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

Air Pollutants and Ambient Air Quality Standards

Both USEPA and CARB have established air quality standards for common pollutants. These ambient air quality standards represent the safest levels for each contaminant, according to the various thresholds of each pollutant for causing adverse health effects. The standards cover what are called “criteria” pollutants because health and other effects of each pollutant are described in criteria documents. Although the State and federal ambient standards were developed independently, with differing purposes and methods, both processes shared an attempt to avoid health-related effects. As a result, some differences between federal and State standards occur, as illustrated in Table 4.4-2.

Table 4.4-2
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standards	State Standard
Ozone	1-Hour	0.12 PPM	0.09 PPM
	8-Hour	0.08 PPM	—
Carbon Monoxide	8-Hour	9.0 PPM	9.0 PPM
	1-Hour	35.0 PPM	20.0 PPM
Nitrogen Dioxide	Annual Average	0.05 PPM	—
	1-Hour	—	0.25 PPM
Sulfur Dioxide	Annual Average	0.03 PPM	—
	24-Hour	0.14 PPM	0.05 PPM
	1-Hour	—	0.25 PPM
PM_{10}	Annual Average	50 $\mu g/m^3$	20 $\mu g/m^3$
	24-Hour	150 $\mu g/m^3$	50 $\mu g/m^3$
$PM_{2.5}$	Annual Average	15 $\mu g/m^3$	12 $\mu g/m^3$
	24-Hour	65 $\mu g/m^3$	—
Lead	Calendar Quarter	1.5 $\mu g/m^3$	—
	30 Day Average	—	1.5 $\mu g/m^3$
Sulfates	24 Hour	25 $\mu g/m^3$	—
Hydrogen Sulfide	1-Hour	0.03 PPM	—
Vinyl Chloride	24-Hour	0.01 PPM	—

PPM = Parts-per-Million
$\mu g/m^3$ = Micrograms-per-Cubic Meter
Source: California Air Resources Board, Ambient Air Quality Standards (7/9/03) http://www.arb.ca.gov.aqs/aaqs2.pdf

In general, the California state standards are more stringent, in particularly for ozone and particulate matter (PM_{10} and $PM_{2.5}$)

The U.S. Environmental Protection Agency established new national air quality standards for ground-level ozone and for fine particulate matter in 1997. The existing 1-hour ozone standard of 0.12 PPM microns or less) is to be phased out and replaced by an 8-hour standard of 0.08 PPM. Implementation of the 8-hour standard was delayed by litigation, but was determined to be valid and enforceable by the U. S. Supreme Court in a decision issued in February of 2001.

The State of California regularly reviews scientific literature regarding the health effects and exposure to particulate matter and other pollutants. On May 3, 2002, the California Air Resources Board (CARB) staff recommended lowering the level of the annual standard for PM_{10} and establishing a new annual standard for $PM_{2.5}$ (particulate matter 2.5 microns in diameter or less). The new standards became effective on July 5, 2003.

California Clean Air Act

The California Clean Air Act (CCAA) requires that air quality plans be prepared for areas of the State that have not met State air quality standards for ozone, CO, NO_X, and SO_2. Among other requirements of the CCAA, the plans must include a wide range of

implementable control measures, which often include transportation control measures and performance standards. In order to implement the transportation-related provisions of the CCAA, local air pollution control districts have been granted explicit authority to adopt and implement transportation controls.

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) has permitting authority for stationary air pollutant sources in the region and operates a total of seven air monitoring sites within Contra Costa County.

City of Brentwood General Plan

The Brentwood General Plan is applicable to the proposed project. The General Plan sets forth various goals, policies and programs that would apply to projects in the City of Brentwood. The following goals, policies and programs are applicable to the proposed project.

Conservation/Open Space Element

Policy 3.3 – Air Quality: Preserve and improve air quality in the Brentwood Planning Area.

3.3.1 – Program Implementation: Work with Contra Costa County and the Bay Area Air Quality Management District to implement programs aimed at improving regional air quality.

3.3.2 – Development Review: Discourage development that does not support alternative transportation modes and improve the jobs/housing balance with the Planning Area.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

State and Federal Standards

Both USEPA and CARB have established ambient air quality standards covering a wide variety of common pollutants. Only a few of these pollutants are problems in the Bay Area either due to the strength of the emission or the climate of the region.

The federal standards are divided into primary standards, which are designed to protect the public health, and secondary standards, which are designed to protect the public

welfare. California State standards for air quality tend to be more stringent than the federal standards.

Bay Area Air Quality Management District

BAAQMD CEQA Guidelines[4] provide the following definitions of a significant air quality impact:

- A project contributing to carbon monoxide (CO) concentrations exceeding the State Ambient Air Quality Standard of 9 parts per million (ppm) averaged over 8 hours or 20 ppm for 1 hour would be considered to have a significant impact.

- A project that generates criteria air pollutant emissions in excess of the BAAQMD annual or daily thresholds would be considered to have a significant air quality impact. The current thresholds are 15 tons/year or 80 pounds/day for Reactive Organic Gases (ROG), Nitrogen Oxides (NO_x) or PM_{10}. Any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact.

- Any project with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

- Any project with the potential to expose sensitive receptors or the general public to substantial levels of toxic air contaminants would be deemed to have a significant impact.

Despite the establishment of both federal and State standards for $PM_{2.5}$ (particulate matter, 2.5 microns), the BAAQMD has not developed a threshold of significance for this pollutant. For this analysis, $PM_{2.5}$ impacts would be considered significant if project emissions of PM_{10} (which includes $PM_{2.5}$) exceed 80 pounds per day.

The BAAQMD significance threshold for construction dust impacts is based on the appropriateness of construction dust controls. The BAAQMD guidelines provide feasible control measures for construction emission of PM_{10}. If the appropriate construction controls are to be implemented, then air pollutant emissions for construction activities would be considered less-than-significant.

Method of Analysis

Donald Ballanti prepared an air quality report for the proposed project (*Air Quality Impact Analysis for the Proposed Barrington Project, City of Brentwood)*. The following information outlines the methods of analysis in the report.

CALINE-4

The CALINE-4 model is a fourth-generation line source air quality model that is based on the Gaussian diffusion equation and employs a mixing zone concept to characterize pollutant dispersion over the roadway. Given source strength, meteorology, site geometry and site characteristics, the model predicts pollutant concentrations for receptors located within 150 meters of the roadway. The CALINE-4 model allows roadways to be broken into multiple links that can vary in traffic volume, emission rates, height, width, etc.

A screening-level form of the CALINE-4 program was used to predict concentrations. Normalized concentrations for each roadway size (2 lanes, 4 lanes, etc.) are adjusted for the two-way traffic volume and emission factor. Calculations were made for a receptor at a corner of the intersection, located at the curb. Emission factors were derived from the California Air Resources Board EMFAC7-2002 computer program based on a 2005 and 2025 Bay Area vehicle mix.

The screening form of the CALINE-4 model calculates the local contribution of nearby roads to the total concentration. The other contribution is the background level attributed to more distant traffic. The 1-hour background level in 2005 was taken as 2.5 PPM and the 8-hour background concentration was taken as 2.3 PPM. The 1-hour background level in 2025 was taken as 2.3 PPM and the 8-hour background concentration was taken as 1.7 PPM. These backgrounds were estimated using isopleth maps and correction factors developed by the Bay Area Air Quality Management District.

Eight-hour concentrations were obtained from the 1-hour output of the CALINE-4 model using a persistence factor of 0.7.

URBEMIS-2002

Estimates of regional emissions generated by project traffic were made using the URBEMIS-2002 modeling program. The program estimates the emissions that result from various land use development projects. Land use projects can include residential uses such as single-family dwelling units, apartments and condominiums, and nonresidential uses such as shopping centers, office buildings, and industrial parks. URBEMIS-2002 contains default values for much of the information needed to calculate emissions. However, project-specific, user-supplied information can also be used when it is available.

Inputs to the URBEMIS-2002 program include trip generation rates, vehicle mix, average trip length by trip type, and average speed. Trip generation rates for project land uses were provided by the project transportation consultant. Average trip lengths and vehicle mixes for the Bay Area were used. Average speed for all types of trips was assumed to be 30 MPH.

Dummy variables for project land use and trip generation rates were utilized in order to arrive at the project trip generation figure of 3,058 daily trips projected by Fehr and

Peers' *Traffic Impact Analysis*. The URBEMIS-2002 program projected that project land uses would generate 7,900 daily trips and eliminate 4,842 existing trips, resulting in a net increase of 3,058 daily trips. These new trips were assumed to be primarily commercial in nature. The land use input to the model was 100,000 square feet of commercial space, and the trip rate was set at 30.58 to obtain the correct number of total trips. The URBEMIS-2002 run assumed summertime conditions with an ambient temperature of 85 degrees F.

Project-Specific Impacts and Mitigation Measures

4.4-1 Short-term construction-related air quality impacts.

Although the Downtown Specific Plan is a policy-level document, implementation of the policies within the Specific Plan could result in specific projects. Construction dust could affect local air quality during implementation of the projects proposed as part of the Downtown Specific Plan. The three large-scale projects proposed as part of the Downtown Specific Plan would result in substantial excavation and earthmoving. The movement of earth on the site is a construction activity with a high potential for creating air pollutants. After grading of the site, dust would continue to affect local air quality during construction of the project. Excavation and grading operations, construction vehicle traffic, and wind blowing over exposed earth would generate exhaust emissions and fugitive particulate matter emissions that would affect local and regional air quality during construction of any projects associated with the Downtown Specific Plan.

Construction activities would generate exhaust emissions from vehicles/equipment and fugitive particulate matter emissions that would affect local air quality. Construction activities are also a source of organic gas emissions. Solvents in adhesives, non-waterbase paints, thinners, some insulating materials and caulking materials would evaporate into the atmosphere and would participate in the photochemical reaction that creates urban ozone. Asphalt used in paving is also a source of organic gases for a short time after its application.

During construction, various diesel-powered vehicles and equipment would be in use in the project area. In 1998, CARB identified particulate matter from diesel-fueled engines as a toxic air contaminant (TAC). CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines[5]. High volume freeways, stationary diesel engines and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truckstop) were identified as having the highest associated risk.

Additionally, the proposed project would result in the demolition of existing buildings. The physical demolition of existing structures and other infrastructure are construction activities with a high potential for creating air pollutants. In

addition to the dust created during demolition, substantial dust emissions could be created as debris is loaded into trucks for disposal.

After removal of existing structures, construction dust would continue to affect local air quality during construction of the project. Grading, earthmoving and excavation are the activities that generate the most PM_{10} emissions. The dry, windy climate of the area during the summer months creates a high potential for dust generation when and if underlying soils are exposed to the atmosphere.

Health risks from TACs are functions of both concentration and duration of exposure. Unlike the above types of sources, construction diesel emissions are temporary, affecting an area for a period of days or perhaps weeks. Additionally, construction related sources are mobile and transient in nature, and the bulk of the emission occurs within the project site at a substantial distance from nearby receptors. Because of the short duration of construction activities, health risks form construction emissions of diesel particulate would not be considered substantial.

According to the *BAAQMD CEQA Guidelines*, emissions of ozone precursors (ROG and NOx) and carbon monoxide related to construction equipment are already included in the emission inventory that is the basis for regional air quality plans, and thus are not expected to impede attainment or maintenance of ozone and carbon monoxide standards in the Bay Area. Thus, the effects of construction activities associated with the proposed project would be limited to increased dustfall and locally elevated levels of PM_{10} downwind of construction activity. However, although construction dust has the potential for creating a nuisance at nearby properties, future projects would be required to implement BAAQMD mitigation measures and would require additional analysis. Therefore, the proposed project would result in a ***less-than-significant*** impact.

Mitigation Measure(s)
None required.

4.4-2 Impacts to local air quality due to project trip generation.

On the local scale, the project would change traffic on the local street network, changing carbon monoxide levels along roadways used by project traffic. Carbon monoxide is an odorless, colorless poisonous gas whose primary source in the Bay Area is automobiles. Concentrations of this gas are highest near intersections of major roads.

The Bay Area Air Quality Management District=s *BAAQMD CEQA Guidelines* recommends estimation of carbon monoxide concentrations for projects where project traffic would impact signalized intersections or roadway links operating at Level of Service (LOS) D, E, or F, or would cause Level of Service to decline to D, E, or F.

The traffic study prepared for the project found that two signalized intersections meet the BAAQMD threshold for modeling in the project and cumulative scenarios. Carbon monoxide concentrations under worst-case meteorological conditions have been predicted for these intersections. PM peak traffic volumes were applied to the screening form of the CALINE-4 dispersion model to predict maximum 1-and 8-hour concentrations near these intersections under the worst-case assumption that project traffic changes would occur in 2005. The model results were used to predict the maximum 1- and 8-hour concentrations, corresponding to the 1- and 8-hour averaging times specified in the state and federal ambient air quality standards for carbon monoxide.

Table 4.4-3 shows the results of the CALINE-4 analysis for the peak 1-hour and 8-hour traffic periods in parts per million (PPM). The 1-hour values are to be compared to the federal 1-hour standard of 35 PPM and the state standard of 20 PPM. The 8-hour values in Table 4.4-3 are to be compared to the state and federal standard of 9 PPM.

Table 4.4-3 shows that existing predicted concentrations near the intersections meet the 1-hour and 8-hour standards. Traffic from the proposed project would increase concentrations by up to 0.2 PPM, but concentrations would remain below the most stringent state or federal standards. Concentrations with project and cumulative traffic growth in 2025 would also not exceed the state/federal ambient air quality standards.

Table 4.4-3
Worst-Case Carbon Monoxide Concentrations
Near Selected Intersections, in Parts Per Million

Intersection	Existing (2005)		Existing + Project (2005)		Cumulative + Project (2025)	
	1-Hr	8-Hr	1-Hr	8-Hr	1-Hr	8-Hr
Brentwood Blvd./ Central Blvd./ Sycamore Avenue	5.8	4.2	6.0	4.3	2.6	1.9
O'Hara Avenue/ Central Blvd.	4.2	3.1	4.4	3.2	3.2	2.3
Most Stringent Standard	*20.0*	*9.0*	*20.0*	*9.0*	*20.0*	*9.0*

Source: Don Ballanti, *Air Quality Impact Analysis, 2005.*

Because traffic associated with implementation of the Downtown Specific Plan would not cause any new violations of the 8-hour standards for carbon monoxide, nor contribute substantially to an existing or projected violation, project impacts on local carbon monoxide concentrations are considered to be ***less-than-significant***.

Mitigation Measure(s)
None required.

4.4-3 Impacts to regional air quality due to project trip generation.

Vehicle trips generated by the project would result in air pollutant emissions affecting the entire San Francisco Bay Air Basin. The project would replace some existing land uses with new uses, and result in new development within currently vacant land. The project is expected to generate an additional 3,058 net new daily vehicle trips. Regional emissions associated with project vehicle use have been calculated using the URBEMIS-2002 emission model.

The incremental daily emission increase associated with project land uses is identified in Table 4.4-4 for reactive organic gases and oxides of nitrogen (two precursors of ozone) and PM_{10}. The Bay Area Air Quality Management District has established threshold of significance for ozone precursors and PM_{10} of 80 pounds per day. Proposed project emissions shown in Table 4.4-4 would not exceed these thresholds of significance, so the proposed project would have a ***less-than-significant*** impact on regional air quality.

Mitigation Measure(s)
None required.

Table 4.4-4
Project Regional Emissions in Pounds Per Day

Pollutant	***Reactive Organic Gasses***	***Nitrogen Oxides***	***PM_{10}***
Project Buildout	16.7 PPD	20.0 PPD	23.9
BAAQMD Significance Threshold	**80.0 PPD**	**80.0 PPD**	**80.0**
Source: Don Ballanti, June 2004			

Cumulative Impacts

4.4-4 Cumulative impacts to regional air quality.

According to BAAQMD significance criteria, any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. For any project that does not have significant operational air quality impacts, the determination of significant cumulative impact should be based on an evaluation of the consistency of the project with the local general plan and of the general plan with the regional air quality plan (the most recently adopted Clean Air Plan).

If a project requires a General Plan Amendment, a significant cumulative impact could occur if the project generates more Vehicle Miles Traveled than anticipated

under the previous land use designation, due to inconsistency with the regional air quality plan. The regional air quality plan is based on ABAG projections, which are in turn based on city/county general plans.

The proposed project does involve a change in General Plan designation for some parcels. In general, these re-designations change proposed uses from commercial and office uses to residential uses, which would generate fewer trips and less Vehicle Miles Traveled than development under the current designation. Therefore, the project would have ***less-than-significant*** cumulative air quality impacts.

Mitigation Measure(s)
None required.

Endnotes

[1] Ballanti, Don. *Air Quality Impact Analysis*, February 2005.
[2] City of Brentwood, *City of Brentwood General Plan Update*, June 2001.
[3] City of Brentwood, *City of Brentwood General Plan Update EIR*, June 2001.
[4] Bay Area Air Quality Management District, *BAAQMD CEQA Guidelines*, 1996 (Revised December 1999).
[5] California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000.