5.2 AIR QUALITY

This section of the Torrance General Plan Update Draft EIR (DEIR) evaluates the potential for the proposed general plan update to impact air quality in the local and regional contexts. The analysis in this section is based on an air quality analysis completed by The Planning Center, which is based on land uses associated with buildout of the proposed land use plan for year 2030 (see Tables 3-3 and 3-4). The air quality model output sheets are included as Appendix D.

5.2.1 Environmental Setting

South Coast Air Basin

The project site is in the South Coast Air Basin (SoCAB), which includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino Counties. The air basin is a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region is in the semipermanent high-pressure zone of the eastern Pacific. The climate is mild, tempered by cool sea breezes. This weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds. The City's coastal location means that local air quality conditions are generally better than indicated for the basin as a whole.

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station nearest the site is in Torrance (ID No. 048973). The average low is reported at 44.2°F in January and the average high is 78.6°F in August. All areas in the SoCAB have recorded temperatures above 100°F in recent years.

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast with slightly heavier shower activity in the east and over the mountains. Rainfall averages around 13.58 inches per year in the project area, as measured in Torrance.

Humidity

Although the SoCAB has a semiarid climate, the air near the surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the ocean effect is dominant. Periods of heavy fog, especially along the coastline, are frequent; low stratus clouds, often called high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the east portions of the SoCAB.

Wind

Wind patterns across the south coastal region are characterized by westerly and southwesterly onshore winds during the day and easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting the eastward transport of pollutants. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These inversions are the marine/subsidence inversion and the radiation inversion. The height of the base of the inversion at any given time is known as the "mixing height." The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area.

Air Pollutants of Concern

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. These are known as criteria air pollutants and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_X), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. VOC and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

Presented below is a description of each of the primary and secondary criteria air pollutants and their known health effects. Other pollutants, such as carbon dioxide, a natural by-product of animal respiration that is also produced in the combustion process, have been linked to such phenomena as global warming (see Section 5.6, *Greenhouse Gas Emissions*).

Carbon Monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005).

Volatile Organic Compounds (VOC) are compounds comprised primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. VOCs are synonymous with reactive organic gases. Other sources of VOC include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by VOC, but rather by reactions of VOC to form secondary pollutants such as ozone (SCAQMD 2005).

Nitrogen Oxides (NO_X) serve as integral participants in the process of photochemical smog production. The two major forms of NO_X are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO_X acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens (SCAQMD 2005).

NO_2 is a by-product of fuel combustion. The principal form of NO_2 produced by combustion is NO, but NO reacts with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 part per million (ppm). NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 also contributes to the formation of PM_{10}, $PM_{2.5}$, and ozone (SCAQMD 2005).

Sulfur Dioxide (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. Fuel combustion is the primary source of SO_2. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. A primary source of SO_2 emissions is high-sulfur-content coal. Gasoline and natural gas have very low sulfur content and hence do not release significant quantities of SO_2 (SCAQMD 2005).

Particulate Matter (PM) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized. Inhalable coarse particles, or PM_{10}, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 one-millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns (i.e., 2.5 one-millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind action on arid landscapes also contributes substantially to local particulate loading. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems (SCAQMD 2005). Diesel particulates are classified by the CARB as a carcinogen.

Fugitive dust primarily poses two public health and safety concerns. The first concern is that of respiratory problems attributable to the particulates suspended in the air. The second concern is that of motor vehicle accidents caused by reduced visibility during severe wind conditions. Fugitive dust may also cause significant property damage during strong windstorms by acting as an abrasive (much like sandblasting). Finally, fugitive dust can result in a nuisance factor due to the soiling of proximate structures and vehicles (SCAQMD 2005).

Ozone (O_3), or smog, is one of a number of substances called photochemical oxidants that are formed when VOC and NO_X (both by-products of the internal combustion engine) react with sunlight. O_3 is present in relatively high concentrations in the SoCAB, and the damaging effects of photochemical smog are generally related to the concentrations of O_3. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Additionally, O_3 has been tied to crop damage, typically in the form of stunted growth and premature death. O_3 can also be a corrosive, resulting in property damage such as the degradation of rubber products (SCAQMD 2005).

Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to

reduce exposure to these contaminants to protect the public health. The Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the federal Clean Air Act (42 United Sates Code Section 7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through the California Air Resources Board (CARB), is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. CARB has, to date, established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

Since the last update to the TAC list in December 1999, CARB has designated 244 compounds as TACs (CARB 1999). Additionally, the CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

In 1998, the CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in the diesel exhaust were considered as TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

In 2000, the South Coast Air Quality Management District (SCAQMD) conducted a study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,400 in a million. The largest contributor to this risk was diesel exhaust, accounting for 71 percent of the air toxics risk. In 2008, SCAQMD conducted its third update to their study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in a million. The largest contributor to this risk was diesel exhaust, accounting for approximately 84 percent of the air toxics risk (SCAQMD 2008).

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the City of Torrance are best documented by measurements made by SCAQMD. The City is in the central portion of Source Receptor Area (SRA) 3 – Southwest Los Angeles County Coastal (Coastal). SCAQMD air quality monitoring station in the SRA 3 that is closest to the City is the Lynwood Monitoring Station. However, this station only monitors

CO, NO_2, O_3, and $PM_{2.5}$. Consequently, data was supplemented from the LAX Monitoring Station for SO_2 and PM_{10}. Data from these two stations are summarized in Table 5.2-1. The data show recurring violations of both the state and federal O_3 standards. The data also indicate that the area regularly exceeds federal $PM_{2.5}$ standards; however the state PM_{10} standard was only exceeded once in the last five years. The CO, SO_2, and NO_2 standards have not been violated in the last five years at the stations.

Table 5.2-1
Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2004	2005	2006	2007	2008
Ozone (O_3)[1]					
State 1-Hour ≥ 0.09 ppm	0	1	0	1	0
State 8-Hour ≥ 0.070 ppm	0	2	0	2	0
Federal 8-Hour > 0.075[2] ppm	0	1	0	1	0
Max. 1-Hour Conc. (ppm)	0.083	0.111	0.088	0.102	0.078
Max. 8-Hour Conc. (ppm)	0.069	0.082	0.067	0.078	0.061
Carbon Monoxide (CO)[1]					
State/Federal 8-Hour > 9.0 ppm	0	0	0	0	0
Max. 8-Hour Conc. (ppm)	6.50	5.87	6.24	5.32	4.26
Nitrogen Dioxide (NO_2)[1]					
State 1-Hour ≥ 0.18[4] ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.102	0.107	0.137	0.099	0.118
Sulfur Dioxide (SO_2)[3]					
State 24-Hour ≥ 0.04 ppm	0	0	0	0	0
Federal 24-Hour ≥ 0.14 ppm	0	0	0	0	0
Max 24-Hour Conc. (ppm)	0.007	0.012	0.010	0.009	0.004
Coarse Particulates (PM_{10})[3]					
State 24-Hour > 50 $\mu g/m^3$	0	0	0	3	0
Federal 24-Hour > 150 $\mu g/m^3$	0	0	0	0	0
Max. 24-Hour Conc. ($\mu g/m^3$)	47.0	44.0	45.0	128.0	50.0
Fine Particulates ($PM_{2.5}$)[1]					
Federal 24-Hour > 35[5] $\mu g/m^3$	8	8	4	4	1
Max. 24-Hour Conc. ($\mu g/m^3$)	55.8	54.6	55.0	48.9	36.5

Source: CARB, Ambient Air Quality Monitoring Data, obtained June 2009.
ppm: parts per million; $\mu g/m^3$, or micrograms per cubic meter
[1] Data obtained from the Lynwood Monitoring Station.
[2] The USEPA revised the 8-hour O_3 standard from 0.08 ppm to 0.075 ppm, effective May 2008.
[3] Data obtained from the LAX Monitoring Station
[4] The NO_x standard was amended on February 22, 2007, to lower the 1-hr standard from 0.25 ppm to 0.18 ppm.
[5] The USEPA recently revised the 24-hour $PM_{2.5}$ standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$. However, this standard did not take effect until December 2006. Federal exceedance based on measured day the ambient air quality concentrations exceeded the 24-hour standard.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to

any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Existing and proposed industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

Regulatory Setting

Development associated with buildout of the proposed land use plan for the City of Torrance has the potential to release gaseous emissions of criteria pollutants and dust into the ambient air; therefore, it falls under the ambient air quality standards (AAQS) promulgated at the local, state, and federal levels. The project site is in the SoCAB and is subject to the rules and regulations imposed by SCAQMD. However, SCAQMD reports to CARB, and all criteria emissions are also governed by the California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to project are summarized below.

Ambient Air Quality Standards

The federal Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act Amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting NAAQS and the Prevention of Significant Deterioration program. The 1990 Amendments are the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollutant. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the CAAQS by the earliest practical date. The CAAQS tend to be more restrictive than the NAAQS and are based on even greater health and welfare concerns.

These NAAQS and CAAQS standards are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both the State of California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 5.2-2, these pollutants are O_3, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and Pb. In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 5.2-2
Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Ozone (O_3)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.075 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9.0 ppm	
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	*	
Sulfur Dioxide (SO_2)	Annual Average	*	0.03 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	*	
	24 hours	0.04 ppm	0.14 ppm	
Suspended Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 $\mu g/m^3$	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 $\mu g/m^3$ (PM_{10})	150 $\mu g/m^3$ (PM_{10})	
Suspended Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 $\mu g/m^3$	15 $\mu g/m^3$	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 $\mu g/m^3$	
Lead (Pb)	Monthly	1.5 $\mu g/m^3$	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	*	1.5 $\mu g/m^3$	
Sulfates (SO_4)	24 hours	25 $\mu g/m^3$	*	Industrial processes.

Source: CARB 2008
ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.

Air Quality Management Planning

SCAQMD and the Southern California Association of Governments (SCAG) are the agencies responsible for preparing the air quality management plan (AQMP) for the SoCAB. Since 1979, a number of AQMPs have been prepared.

The most recent adopted comprehensive plan is the 2007 AQMP, adopted on June 1, 2007, which incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2007 AQMP proposes attainment demonstration of the federal $PM_{2.5}$ standards through a more focused control of SO_X, directly emitted $PM_{2.5}$, and focused control of NO_X and VOC by 2015. The eight-hour ozone control strategy builds

upon the $PM_{2.5}$ strategy, augmented with additional NO_X and VOC reductions to meet the standard by 2024, assuming an extended attainment date is obtained.

The AQMP provides local guidance for the State Implementation Plan, which provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. Severity classifications for ozone nonattainment range in magnitude: marginal, moderate, serious, severe, and extreme. The attainment status for the SoCAB is included in Table 5.2-3. The SoCAB is also designated as attainment of the CAAQS for SO_2, lead, and sulfates. According to the 2007 AQMP, the SoCAB will have to meet the new federal $PM_{2.5}$ standards by 2015 and the 8-hour ozone standard by 2024, and will most likely have to achieve the recently revised 24-hour $PM_{2.5}$ standard by 2020.

Table 5.2-3
Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	*State*	*Federal*
Ozone – 1-hour	Extreme Nonattainment	Extreme Nonattainment[1]
Ozone – 8-hour	Extreme Nonattainment	Severe-17 Nonattainment[2]
PM_{10}	Serious Nonattainment	Serious Nonattainment[3]
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment[4]
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
All others	Attainment/Unclassified	Attainment/Unclassified

Source: California Air Resource Board, based on 2006 State Area Designations and National Area Designations current as of July 2007.
[1] Under prior standard.
[2] May petition for Extreme.
[3] Annual Standard Revoked September 2006.
[4] The USEPA granted the request to redesignate the SoCAB from nonattainment to attainment for the CO NAAQS on May 11, 2007 (Federal Register Volume 71, No. 91), which became effective as of June 11, 2007.

5.2.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.

AQ-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

AQ-3 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

AQ-4 Expose sensitive receptors to substantial pollutant concentrations.

AQ-5 Create objectionable odors affecting a substantial number of people.

South Coast Air Quality Management District Thresholds

Regional Significance Thresholds

CEQA allows for the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. SCAQMD has established thresholds of significance for air quality for construction activities and project operation as shown in Table 5.2-4. It should be noted that these thresholds were developed for assessing impacts of individual development project and not citywide planning efforts like the proposed project.

Table 5.2-4
SCAQMD Regional Significance Thresholds

Air Pollutant	*Construction Phase*	*Operational Phase*
Volatile Organic Compounds (VOC)	75 lbs/day	55 lbs/day
Nitrogen Oxides (NO_X)	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Sulfur Oxides (SO_X)	150 lbs/day	150 lbs/day
Particulates (PM_{10})	150 lbs/day	150 lbs/day
Fine particulates ($PM_{2.5}$)	55 lbs/day	55 lbs/day

Source: SCAQMD 2007

CO Hotspot Analysis

Localized CO impacts are determined based on the presence of congested intersections. The significance of localized project impacts depends on whether the project would cause substantial concentrations of CO. A project is considered to have significant impacts if project-related mobile-source emissions result in an exceedance of the California one-hour and eight-hour CO standards, which are:

- 1 hour = 20 parts per million
- 8 hour = 9 parts per million

Localized Significance Thresholds

SCAQMD has developed localized significance thresholds (LSTs) for emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at a project site (off-site mobile-source emissions are not included the LST analysis). LSTs are the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS. LSTs are based on the ambient concentrations of that pollutant within the project SRA and the distance to the nearest sensitive receptor. SCAQMD's *Final Localized Significance Threshold Methodology* states that the LST methodology applies to project-specific level projects and not to regional projects such as General Plans. Table 5.2-5 shows the localized significance thresholds for future development projects. However, the LST methodology will not used in this air quality assessment because the project is a general plan-level analysis.

Table 5.2-5
SCAQMD Localized Significance Thresholds

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO_2 Standard (CAAQS)	0.18 ppm
24-Hour PM_{10} Standard (SCAQMD)[1]	10.4 $\mu g/m^3$
24-Hour PM_{10} Standard (SCAQMD)[1]	2.5 $\mu g/m^3$

Notes: ppm – parts per million; μg/m3 – micrograms per cubic meter
[1] Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM_{10} and $PM_{2.5}$, the threshold is established as an "allowable change" in concentration. Therefore, background concentration is irrelevant.

5.2.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.2-1: BUILDOUT OF THE CITY OF TORRANCE IN ACCORDANCE WITH THE PROPOSED LAND USE PLAN WOULD POTENTIALLY CONFLICT WITH THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT'S AIR QUALITY MANAGEMENT PLAN. [THRESHOLD AQ-1]

Impact Analysis: CEQA requires that general plans be evaluated for consistency with the AQMP. A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the AQMP. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration at a stage early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to clean air goals contained in the AQMP. Only new or amended general plan elements, specific plans, and major projects need to undergo a consistency review. This is because the AQMP strategy is based on projections from local general plans. Projects that are consistent with the local General Plan are considered consistent with the air quality-related regional plan. There are two key indicators of consistency:

Indicator 1: Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the AAQS or interim emission reductions in the AQMP.

Indicator 2: Whether the project would exceed the assumptions in the AQMP. The AQMP strategy is, in part, based on projections from local general plans.

Indicator 1

The SoCAB is designated by the state and USEPA as nonattainment for O_3, PM_{10}, and $PM_{2.5}$. Because the project involves long-term growth associated with buildout of the City of Torrance, cumulative emissions generated by construction and operation of individual projects would exceed the SCAQMD regional and localized thresholds (see Impact 5.2-2 and Impact 5.2-3). Consequently, emissions generated by development projects in addition to existing sources within the City are considered to cumulatively contribute to the nonattainment designations of the SoCAB. Buildout of the proposed land use plan would therefore contribute to an increase in frequency or severity of air quality violations and delay attainment of the AAQS or interim emission reductions in the AQMP, and emissions generated from buildout of the proposed land use

plan would result in a significant air quality impact. The project would not be consistent with the AQMP under the first indicator.

Indicator 2

The land use designations of the general plan form, in part, the foundation for the emissions inventory for the SoCAB in the AQMP. The AQMP is based on projections in population, employment, and vehicle miles traveled (VMT) in the SoCAB region projected by SCAG. Table 5.2-6 compares the trip generation of the proposed land use plan compared to the existing conditions and projections based on the current general plan using the URBEMIS2007 computer model. SCAG projections for the City are based on the current general plan. As shown in this table, trip generation and VMT under the proposed land use plan would be greater. In addition, according to population projections from SCAG (see Section 5.13, *Population and Housing*), the general plan update would generate substantially more growth in population and employment than SCAG projections. It should be noted that the growth projected by SCAG is based on demographic trends in the region; whereas, growth projections assume full buildout of the City in approximately 20–25 years, since there is no schedule for when this development would occur (see Section 5.13, *Population and Housing*). As a result, the growth projections that are based on SCAG's Regional Transportation Plan and the associated emissions inventory in SCAQMD's AQMP do not include the additional growth forecast of the proposed general plan update. Consequently, the 2007 AQMP does not consider emissions associated with the proposed Land Use Plan. Once the proposed general plan update is adopted and the AQMP is revised, SCAG and SCAQMD will incorporate the growth projections associated with buildout of the proposed land use plan in their regional planning projections and the proposed general plan update would be consistent with the AQMP. However, since full buildout associated with the proposed general plan update is not currently included in the emissions inventory for the SoCAB, impacts associated with the second indicator are also considered significant.

Table 5.2-6
Increase in Trip Generation and Vehicle Miles Traveled at Buildout

Scenario	*Trip Generation*	*Estimated Vehicle Miles Traveled (VMT)*
Existing Land Uses (Baseline)	1,878,681	12,390,999
Existing General Plan	1,918,102	12,639,487
Proposed Land Use Plan	**1,975,398**	**13,118,730**
Increase from Existing	96,717	727,731
Increase Compared to Existing General Plan	57,296	479,243

Source: URBEMIS2007, Version 9.2.4, based on land use statistics in Tables 3-3 and 3-4, in Chapter 3, *Project Description*, of this Draft EIR.

Summary

As described above, the project would not be consistent with the AQMP because air pollutant emissions associated with buildout of the City of Torrance would cumulatively contribute to the nonattainment designations in the SoCAB. Furthermore, buildout of the proposed land use plan would exceed current estimates of population, employment, and VMT for Torrance and therefore these emissions are not included in the current regional emissions inventory for the SoCAB. Consequently, the project would be considered inconsistent with the AQMP, resulting in a significant impact.

IMPACT 5.2-2: CONSTRUCTION ACTIVITIES ASSOCIATED WITH BUILDOUT OF THE TORRANCE GENERAL PLAN UPDATE WOULD GENERATE SHORT-TERM EMISSIONS THAT EXCEED THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT'S REGIONAL SIGNIFICANCE THRESHOLDS FOR VOC, CO, NO_X, PM_{10}, AND $PM_{2.5}$; CUMULATIVELY CONTRIBUTE TO THE SOUTH COAST AIR BASIN NONATTAINMENT DESIGNATIONS FOR O_3, PM_{10}, AND $PM_{2.5}$; AND POTENTIALLY ELEVATE CONCENTRATIONS OF AIR POLLUTANTS AT SENSITIVE RECEPTORS. [THRESHOLDS AQ-2, AQ-3, AND AQ-4]

Impact Analysis: Construction activities associated with the proposed land use plan would occur over the buildout horizon of the proposed general plan update, which would cause short-term emissions of criteria air pollutants. The primary source of NO_x, CO, and SO_x emissions is the operation of construction equipment. The primary sources of particulate matter (PM_{10} and $PM_{2.5}$) emissions include activities that disturb the soil, such as grading and excavation, road construction, and building demolition and construction. The primary sources of VOC emissions are the application of architectural coating and off-gas emissions associated with asphalt paving. A discussion of health impacts associated with air pollutant emissions generated by construction activities is included in section 5.2-1, *Environmental Setting, Air Pollutants of Concern*.

Information regarding specific development projects, soil types, and the locations of receptors would be needed in order to quantify the level of impact associated with construction activity. Due to the scale of development activity associated with buildout of the proposed land use plan, emissions would be expected to exceed SCAQMD's regional significance thresholds. In accordance with SCAQMD's methodology, emissions that exceed the regional significance thresholds would cumulatively contribute to the nonattainment designations of the SoCAB. The SoCAB is designated as nonattainment for O_3 and particulate matter (PM_{10} and $PM_{2.5}$). Emissions of VOC and NO_x are precursors to the formation of O_3. In addition, NO_x is a precursor to the formation of particulate matter (PM_{10} and $PM_{2.5}$). Therefore, the project would cumulatively contribute to the nonattainment designations of the SoCAB for O_3 and particulate matter (PM_{10} and $PM_{2.5}$). Air quality emissions related to construction must be addressed on a project-by-project basis. For this broad-based General Plan, it is not possible to determine whether the scale and phasing of individual projects involved in the buildout of the proposed Torrance General Plan Update would result in the exceedance of SCAQMD's short-term regional or localized construction emissions thresholds. In addition to regulatory measures (e.g., SCAQMD Rule 201, Rule 403, Rule 1113, Rule 1403, and CARB Rule 2840), mitigation may include extension of construction schedules and/or use of special equipment. Nevertheless, the likely scale and extent of construction activities pursuant to the proposed general plan update would likely continue to exceed the relevant SCAQMD thresholds for at least some projects. Consequently, construction-related air quality impacts associated with development of the proposed land use plan are deemed significant.

IMPACT 5.2-3: BUILDOUT OF THE TORRANCE GENERAL PLAN UPDATE WOULD GENERATE LONG-TERM OPERATIONAL PHASE EMISSIONS THAT EXCEED THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT'S REGIONAL SIGNIFICANCE THRESHOLDS FOR VOC, CO, NO_X, PM_{10}, AND $PM_{2.5}$ AND CUMULATIVELY CONTRIBUTE TO THE SOUTH COAST AIR BASIN NONATTAINMENT DESIGNATIONS FOR O_3, PM_{10}, AND $PM_{2.5}$. [THRESHOLDS AQ-2 AND AQ-3]

Impact Analysis: The proposed general plan update guides growth and development in the City of Torrance by designating land uses in the proposed land use plan and through implementation of the goals and policies of the general plan. With that growth comes additional emissions generated by stationary and vehicular sources. These emissions contribute to the overall emissions inventory in the SoCAB. A discussion of health impacts associated with air pollutant emissions generated by construction activities is included in section 5.2-1, *Environmental Setting, Air Pollutants of Concern*.

The project includes the planned development of residential, commercial, office, institutional, and industrial uses in developed and undeveloped portions of the City. The proposed land use plan intensifies the development of existing land uses in the City. Upon buildout of the proposed land use plan, the City of Torrance would comprise the land uses shown previously in Table 3-4. The increase in trip generation from existing conditions is shown in Table 5.2-6.

City of Torrance Emissions Inventory

The increase in air pollutant emissions associated with buildout of the proposed land use plan was estimated using the UBEMIS2007 emissions inventory model. The increase is based on the difference between existing land uses (see Table 5.9-1) and land uses associated with buildout of the proposed land use plan (see Tables 3-3 and 3-4). While buildout would ultimately be market driven, for modeling purposes this analysis is based on the assumption that all uses are on the ground by the year 2030.

Emissions occurring from land uses in the City of Torrance include local and regional vehicle emissions, and stationary-source emissions from the use of natural gas, landscape maintenance equipment, fireplaces, and consumer products such as aerosol sprays. Various industrial and commercial processes (e.g., dry cleaning) allowed under the proposed general plan update would also be expected to release emissions, some of which could be hazardous. Those emissions would be controlled at the local and regional level through permitting and would be subject to further study and health risk assessment prior to the issuance of any necessary air quality permits under SCAQMD Rule 1401. Because the nature of those emissions cannot be determined at this time and are subject to further regulation and permitting, they will not be addressed further in this analysis. Transportation emissions were based on the URBEMIS2007 computer model. Tables 5.2-7 and 5.2-8 compare the increase in the emissions inventory for the City of Torrance to SCAQMD's regional emissions thresholds. It should be noted that SCAQMD's regional emissions thresholds were designed for individual projects.

Table 5.2-7
Operational Phase City of Torrance Regional Emissions Inventory - Summer (in pounds per day)

Year 2030	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Existing Land Uses (Table 5.9-1)						
Area Sources[1]	3,522	1,081	1,844	0	5	5
Transportation	4,503	3,934	44,010	131	21,382	4,146
Existing Land Uses Total	8,024	5,015	45,855	131	21,388	4,152
Proposed Land Use Plan (Tables 3-3 & 3-4)						
Area Sources[1]	3,522	1,081	1,844	0	5	5
Transportation	4,752	4,161	46,561	139	22,638	4,390
Proposed Land Use Plan Total	8,274	5,242	48,405	139	22,643	4,395
Increase in Emissions	249	227	2,551	8	1,256	243
SCAQMD Regional Significance Threshold	55	55	550	150	150	55
Significant?	**Yes**	**Yes**	**Yes**	No	**Yes**	**Yes**

Source: URBEMIS2007, Version 9.2.4.
[1] Includes emissions reduction associated with new development under SCAQMD Rule 445, Wood Burning Devices, which prohibits installation of wood-burning stoves and/or fireplaces in new development.

Table 5.2-8
Operational Phase City of Torrance Regional Emissions Inventory - Winter
(in pounds per day)

Year 2030	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Existing Land Uses (Table 5.9-1)						
Area Sources[1]	11,628	1,763	23,696	65	3,582	3,449
Transportation	5,020	4,720	41,764	109	21,382	4,146
Existing Land Uses Total	16,649	6,483	65,461	173	24,965	7,595
Proposed Land Use Plan (Tables 3-3 and 3-4)						
Area Sources[1]	11,628	1,763	23,696	65	3,582	3,449
Transportation	5,295	4,993	44,168	115	22,638	4,390
Proposed Land Use Plan Total	16,924	6,756	67,865	180	26,220	7,838
Increase in Emissions	275	273	2,404	6	1,256	243
SCAQMD Regional Significance Threshold	55	55	550	150	150	55
Significant?	**Yes**	**Yes**	**Yes**	No	**Yes**	**Yes**

Source: URBEMIS2007, Version 9.2.4.
[1] Includes emissions reduction associated with new development under SCAQMD Rule 445, Wood Burning Devices, which prohibits installation of wood-burning stoves and/or fireplaces in new development.

As shown in Tables 5.2-7 and 5.2-8, buildout of the proposed land use plan would generate long-term emissions that exceed the daily SCAQMD thresholds for all criteria pollutants. Emissions of VOC and NO_x are precursors to the formation of O_3. In addition, NO_x is a precursor to particulate matter (PM_{10} and $PM_{2.5}$). Consequently, emissions of VOC and NO_x that exceed SCAQMD's regional significance thresholds would contribute to the O_3 nonattainment designation of the SoCAB, while emissions of NO_x, PM_{10}, and $PM_{2.5}$ that exceed SCAQMD's regional significance thresholds would contribute to the particulate matter (PM_{10} and $PM_{2.5}$) nonattainment designation of the SoCAB under the national and California AAQS. Consequently, operational-related air quality impacts associated with development of the proposed land use plan are significant.

IMPACT 5.2-4: INCREASE IN TRAFFIC CONGESTION IN THE CITY OF TORRANCE AT BUILDOUT OF THE PROPOSED LAND USE PLAN WOULD NOT EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS. [THRESHOLD AQ-4]

Impact Analysis: The project would expose sensitive receptors to elevated pollutant concentrations if it would cause or contribute significantly to elevated pollutant concentration levels. Unlike the mass (pounds) of operational emissions shown in Tables 5.2-7 and 5.2-8 (pounds per day), localized concentrations refer to the amount of pollutant in a volume of air (ppm or $\mu g/m^3$) and can be correlated to potential health effects.

Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9.0 ppm. Note that the federal levels are based on one- and eight-hour standards of 35 and 9 ppm, respectively. Thus, an exceedance condition would occur based on the state standards before the federal standards.

Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. Typically, for an intersection to exhibit a significant CO concentration, it would operate at level of service (LOS) E or worse without improvements (Caltrans 1997; CALINE4). Table 5.2-9 shows the intersections that are projected to operate at LOS E or worse without improvements.

Table 5.2-9
Intersections with LOS E or Worse

Intersection	*AM Peak Hour (methodology*)*	*PM Peak Hour (methodology)*
Anza Avenue at Sepulveda Boulevard	ICU	HCM and ICU
Arlington Avenue at Plaza Del Amo-Washington Avenue	ICU	–
Crenshaw Boulevard at 182nd Street	ICU	ICU
Crenshaw Boulevard at 190th Street	ICU	HMC and ICU
Crenshaw Boulevard at Torrance Boulevard	–	ICU
Crenshaw Boulevard at Carson Street	–	ICU
Crenshaw Boulevard at Lomita Boulevard	ICU	HCM and ICU
Crenshaw Boulevard at Pacific Coast Highway	ICU	HCM and ICU
Hawthorne Boulevard at Torrance Boulevard	–	ICU
Hawthorne Boulevard at Carson Street	–	ICU
Hawthorne Boulevard at Sepulveda Boulevard	–	HCM and ICU
Hawthorne Boulevard at Lomita Boulevard	ICU	HCM and ICU
Hawthorne Boulevard at Pacific Coast Highway	ICU	ICU
Madrona Avenue at Sepulveda Boulevard	–	ICU
Prairie Avenue at Redondo Beach Boulevard	ICU	HCM and ICU
Prairie Avenue at 190th Street	–	ICU
Western Avenue at 223rd Street	–	ICU
Western Avenue at Sepulveda Boulevard	ICU	HCM and ICU

Source: Caltrans 1997; CALINE 4.
*See Section 5.15, *Transportation and Traffic*, for a discussion of the HMC and ICU methodologies.

These seven intersections were modeled because they would experience levels of traffic congestion that are most conducive to the formation of CO hot spots. Table 5.2-10 lists the one-hour and eight-hour CO concentrations that would occur at these intersections at buildout of the proposed land use plan. Based on the CALINE4 analyses, traffic generated CO concentrations is not anticipated to exceed any of the state one-hour or eight-hour CO AAQS at this intersection. Consequently, sensitive receptors in the area would not be substantially affected by CO emissions generated at buildout of the proposed land use plan. Localized air quality impacts related to mobile-source emissions would therefore be less than significant.

Table 5.2-10
Opening Year CO Concentrations at Congested Intersections in the Project Vicinity (parts per million)

Intersection	Highest 1-Hour CO Concentration	1-Hour CAAQS	Highest 8-Hour CO Concentration	8-Hour CAAQS	Exceeds CAAQS	
					1-Hour	8-Hour
Anza Avenue at Sepulveda Boulevard	7.6	20	5.3	9	No	No
Crenshaw Boulevard at 190th Street	7.6	20	5.3	9	No	No
Crenshaw Boulevard at Lomita Boulevard	7.7	20	5.4	9	No	No
Crenshaw Boulevard at Pacific Coast Highway	7.6	20	5.3	9	No	No
Hawthorne Boulevard at Lomita Boulevard	7.7	20	5.4	9	No	No
Prairie Avenue at Redondo Beach Boulevard	7.6	20	5.3	9	No	No
Western Avenue at Sepulveda Boulevard	7.6	20	5.3	9	No	No

Source: CALINE4, Version 1.31. Based on traffic volumes, roadway configurations, and speed limits obtained from the traffic study prepared by RBF Consulting, 2009. CO concentrations include a background ambient CO concentration of 7.3 ppm obtained from SCAQMD, http://www.aqmd.gov/ceqa/handbook/CO/CO.html, for SRA 3 in year 2030. 8-Hour CO concentrations obtained by multiplying 1-Hour CO concentrations by a persistence factor of 70 percent.

IMPACT 5.2-5: APPROVAL OF RESIDENTIAL AND OTHER SENSITIVE LAND USES IN THE VICINITY OF SUBSTANTIAL POLLUTANT GENERATORS WOULD RESULT IN EXPOSURE OF PERSONS TO SUBSTANTIAL CONCENTRATIONS OF AIR POLLUTANT EMISSIONS. [THRESHOLD AQ-4]

Impact Analysis: Because placement of sensitive land uses falls outside CARB jurisdiction, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* in May 2005 to address the siting of sensitive land uses near substantial sources of air pollution such as freeways, distribution centers, rail yards, ports, extraction facilities, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources. However, CARB has not made specific recommendations on the siting of sensitive land uses near an airport, such as the Torrance Airport, because air pollutant emissions sources from this types of facility are complex and beyond the generalized recommendations of CARB's Handbook. CARB is currently evaluating this type of facility and developing methods to identify sources.

CARB's recommendations on the siting of new sensitive land uses were developed from a compilation of recent studies that evaluated data on the adverse health effects ensuing from proximity to air pollution sources. The key observation in these studies is that close proximity to air pollution sources substantially increases both exposure and the potential for adverse health effects. There are three carcinogenic TACs that constitute the majority of the known health risks from motor vehicle traffic: diesel PM from trucks, and benzene and 1,3 butadiene from passenger vehicles. On a typical urban freeway (truck traffic of 10,000 to 20,000/day), diesel PM makes up approximately 84 percent of the potential cancer risk from the vehicle traffic. Table 5.2-11 shows a summary of CARB recommendations for siting new sensitive land uses within the vicinity of air-pollutant-generating sources. Recommendations in Table 5.2-11 are based on data that

show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

Table 5.2-11
CARB Recommendations for Siting New Sensitive Land Uses

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	• Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.
Distribution Centers	• Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). • Take into account the configuration of existing distribution centers and avoid locating residences and other sensitive land uses near entry and exit points.
Rail Yards	• Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. • Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	• Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or CARB on the status of pending analyses of health risks.
Extraction Facilities	• Avoid siting new sensitive land uses immediately downwind of petroleum extraction facilities. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	• Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	• Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. • Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	• Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas-dispensing facilities.

Source: CARB 2005.

New development constructed in accordance with the proposed land use plan within proximity to roadway segments that experience volumes greater than 100,000 vehicles per day (including I-405) and within proximity to industrial/warehousing areas has the potential to expose sensitive receptors to substantial pollutant concentrations from diesel exhaust and other TACs. SCAQMD's Multiple Air Toxic Exposure Study III (Mates III) shows that average health risk from all sources in the City ranges from 468 to 1,104 in a million and average health risk in the entire SoCAB is 1,200 in a million (SCAQMD 2008a). While much of the City has been developed, the proposed land use plan would potentially intensify the density of development in the City, including areas adjacent to industrial areas and freeways (see Chapter 3, *Project Description*). If new sensitive development, consistent with the proposed land use plan, were placed in the vicinity of any of these sources, then sensitive receptors could be exposed to significant concentrations of air pollutants. In accordance with CEQA, new development would be required to assess the localized air quality impacts from placement of new sensitive uses within the vicinity of such sources. Placement of sensitive uses near major pollutant sources would result in potential significant air quality impacts from the exposure of persons to substantial pollutant concentrations.

IMPACT 5.2-6: DEVELOPMENT ASSOCIATED WITH THE TORRANCE GENERAL PLAN UPDATE WOULD NOT EXPOSE A SUBSTANTIAL NUMBER OF PEOPLE TO OBJECTIONABLE ODORS. [THRESHOLD AQ-5]

Impact Analysis: Construction activity would require the operation of equipment that may generate exhaust from either gasoline or diesel fuel. Construction and development would also require the application of paints and the paving of roads, which could generate. As these odors are short-term in nature and quickly disperse into the atmosphere, this is not considered significant.

Future residential and commercial development would involve minor odor-generating activities, such as backyard barbeque smoke, lawn mower exhaust, application of exterior paints for home improvement, etc. These types and concentrations of odors are typical of residential communities and are not considered significant air quality impacts. Individual projects, including commercial, industrial, and residential projects, associated with the proposed general plan update are required to comply with SCAQMD Rule 402 to prevent occurrence of public nuisances. As a result, project-related odors are required to avoid the creation of a public nuisance. Odorous emissions attributable to the proposed project are not considered a significant adverse impact to air quality

5.2.4 Relevant General Plan Update Policies

Circulation Element

Circulation Plan

- Regulate the operation of commercial vehicles to minimize conflicts with surrounding land uses and to optimize vehicular and pedestrian mobility. (Policy CI.1.4)

- Pursue trip reduction and transportation systems management measures to reduce and limit congestion at intersections and along streets throughout the City. (Policy CI.3.1)

- Interconnect traffic signals and perform similar Intelligent Transportation System (ITS) improvements to maximize the smooth progression of traffic flows and to minimize delay and stop-and-go conditions. (Policy CI.3.3)

- Encourage the use of regional rail, buses, bicycling, carpools, and vanpools for work trips to relieve regional traffic congestion. (Policy CI.3.4)

- Encourage site and building design that reduces automobile trips and parking space demand. (Policy CI.3.5)

- Increase average vehicle ridership through the implementation of transportation demand management programs. (Policy CI.4.3)

- Coordinate with the Torrance Unified School District to explore the establishment of drop-off zones at schools where school children can be safely dropped off and picked up while reducing traffic congestion at peak hours. (Policy CI.4.5)

- Establish a system for residents and businesses to receive real-time traffic information to help plan travel routes accordingly. (Policy CI.4.8)

- Expand parking opportunities by encouraging the use of public parking lots and exploring the use of multiple-story parking structures. (Policy CI.5.3)

Alternatives to the Automobile

- Maintain and expand a public relations and information awareness program to promote transit use. (Policy CI.7.1)
- Coordinate transit planning with regional and county planning agencies to maximize local and regional services. (Policy CI.7.2)
- Support and encourage the use of public transit for local trips, trips to major employment and commercial centers, and connections to regional transportation transfer points. (Policy CI.7.3)
- Establish a transit center in the City. (Policy CI.7.4)
- Enhance and encourage the provision of attractive and appropriate transit amenities, including shaded bus stops, to facilitate use of public transportation. (Policy CI.7.5)
- Provide and maintain safe, efficient, and convenient pedestrian pathways that offer access to major activity centers, recreation facilities, schools, community facilities, and transit stops. (Policy CI.8.1)
- Promote walking throughout the community by installing sidewalks where they are missing and making improvements to existing sidewalks when needed for safety purposes. Particular attention will be given to sidewalk improvements near schools and activity centers. (Policy CI.8.2)
- Require that new residential developments provide pedestrian gateways or similar outlets to abutting roadways and sidewalks. (Policy CI.8.3)
- Provide and maintain a comprehensive system of bicycle lanes to meet the needs of cyclists traveling to all destinations within the City consistent with the Bicycle Master Plan. (Policy CI.8.4)
- Promote the provision of reasonable and secure bicycle storage and shower and locker facilities at major commercial developments and employment centers. (Policy CI.8.5)
- Encourage cyclists to use routes that allow for safe cycling. (Policy CI.8.6)
- Promote bicycle safety through educational programs designed for both bicyclists and drivers. (Policy CI.8.7)
- Seek county, State, federal, and private sector assistance to help finance development of bicycle facilities. (Policy CI.8.8)
- Promote the use of compact electric or similar powered vehicles for local trips. (Policy CI.8.9)

Utility Systems

- Support the installation of new technological infrastructure throughout the City, including broadband, fiber optics, wireless, and other developing technologies. (Policy CI.9.6)

Land Use Element

Maintaining a Balanced Community

- Consider both the impact of a proposed development on surrounding property and the impact of existing uses on new development. (Policy LU.2.3)
- Establish landscape or hardscape buffers between residential and non-residential uses, where appropriate, to minimize adverse effects. (Policy LU.2.5)
- To the extent possible, preserve the balance between jobs and housing in Torrance through land use decisions. (Policy LU.2.6)
- Protect natural resources by promoting superior sustainable development. (Policy LU.2.7)
- Encourage site and building design elements in new developments that reduce or better distribute travel demand by promoting and educating residents and developers about transportation demand management strategies. (Policy LU.4.1)
- Encourage the use of development design and amenities that support transit and other alternative forms of transportation, including bicycling and walking. (Policy LU.4.2)
- Require that new development projects provide their full fair share of the improvements necessary to mitigate project-generated impacts on the circulation and infrastructure systems. (Policy LU.4.3)

Urban Design

- Encourage the use of cohesive design elements that encourage movement of pedestrians, bicycles, and other non-automotive modes of transportation between distinct commercial establishments, between commercial and residential areas, and between residential areas, schools, recreational and cultural facilities, libraries, and transit corridors and hubs. (Policy LU.11.7)
- Encourage site and building design that integrates Low Impact Development (LID) Principles. (Policy LU.11.10)

Community Resources Element

Open Space

- Require the provision of on-site open space in new developments. (Policy CR.1.2)
- Require that development projects involving modifications or additions include plans to upgrade or add open space and landscaping. (Policy CR.1.3)
- Encourage planting of new trees and preserve existing street trees in residential neighborhoods. (Policy CR.3.3)

Parks, Recreation, Cultural, and Community Enrichment

- Develop a local bikeway system to provide access to the beach and other recreational and community facilities. (Policy CR.7.3)
- Encourage use of City-sponsored transportation, ride-sharing, and the Torrance Transit System by community residents for transportation to local recreational and community facilities. (Policy CR.7.4)
- Continue to support community access to fresh and local food items and other goods at the farmers market. (Policy CR.9.7)

Resources Conservation

- Continue to participate in the efforts of the State Air Resources Board and the South Coast Air Quality Management District to meet state and federal air quality standards. (Policy CR.13.1)
- Work with neighboring cities to implement local and regional projects that improve mobility on freeways and railways, reduce emissions, and improve air quality. (Policy CR.13.2)
- Support regional air quality goals through conscientious land use and transportation planning and the implementation of resource conservation measures. (Policy CR.13.3)
- Balance the achievement of clean air with other major goals of the City. (Policy CR.13.4)
- Support air quality and energy and resources conservation by encouraging alternative modes of transportation such as walking, bicycling, transit, and carpooling. (Policy CR.13.5)
- Promote citizen awareness and participation in programs to reduce air pollution and traffic congestion. (Policy CR.13.6)
- Encourage the use of alternative fuel vehicles and re-refined oil. (Policy CR.13.7)
- Promote energy-efficient building construction and operation practices that reduce emissions and improve air quality. (Policy CR.13.8)
- Support the California Air Resources Board in its ongoing plans to implement AB32, and fully follow any new AB32-related regulations. (Policy CR.14.1)
- Develop and implement greenhouse gas emissions reduction measures, including discrete, early-action greenhouse gas-reducing measures that are technologically feasible and cost-effective. (Policy CR.14.2)
- Pursue actions recommended in the U.S. Mayors Climate Protection Agreement to meet AB 32 requirements. (Policy CR.14.3)
- Act as a leader and example in sustainability and reduction in greenhouse gas emissions by conducting City business in the most greenhouse gas-sensitive way. (Policy CR.14.4)

- Promote continued research and programs by the Metropolitan Water District, the Water Replenishment District, the West Basin Municipal Water District, and county and state agencies regarding water recycling and desalination of groundwater for domestic use. (Policy CR.15.2)

- Maximize the use of local water resources to reduce imported water supplies. (Policy CR.15.3)

- Encourage residents and businesses in Torrance to practice water conservation through incentive programs and where necessary, programs that penalize wasteful practices. (Policy CR.15.4)

- Reduce the amount of water used for landscaping through such practices as the planting of native and drought-tolerant plants, use of efficient irrigation systems, and collection and recycling of runoff. (Policy CR.15.6)

- Implement the water conservation projects set forth in the City's Urban Water Management Plan. (Policy CR.15.7)

- Expand the use of recycled water at schools, parks, and all City facilities. (Policy CR.15.8)

- Identify opportunities for increased use of reclaimed water. (Policy CR.15.9)

- Preserve specimen trees whether they occur on public or private property, and promote the planting of new trees. (Policy CR.18.1)

- Provide, maintain, and encourage appropriate street trees along all sidewalks and property frontages. (Policy CR.18.2)

- Develop and implement a comprehensive citywide street tree program that includes sidewalk-appropriate, drought-tolerant, and native species. (Policy CR.18.3)

- Promote and encourage energy resource conservation by the public sector, private sector, and local school district. (Policy CR.21.1)

- Partner with utility providers and regional agencies to inform residents and business of the financial benefits of energy conservation. (Policy CR.21.2)

- Support the development and use of non-polluting, renewable energy resources. (Policy CR.21.3)

- Encourage the construction of homes and buildings that exceed Title 24 standards. Consider adoption of regulations requiring greater energy efficiency in new or remodeled larger homes and businesses. (Policy CR.21.4)

- Educate residents and businesses about the benefits of energy efficiency technologies and practices, such as solar panels and low-energy appliances. (Policy CR.21.5)

- Promote energy-efficient design features, including appropriate site orientation, use of light-colored roofing and building materials, and use of trees to reduce fuel consumption for heating and cooling. (Policy CR.21.6)

- Encourage owners to retrofit existing buildings with energy-conserving lighting fixtures. Also encourage owners to equip new buildings with energy-efficient lighting devices and to design projects to take full advantage of natural lighting. (Policy CR.21.7)

- Explore and consider the cost/benefits of alternative fuel vehicles - including hybrid, natural gas, and hydrogen-powered vehicles - when purchasing new City vehicles. (Policy CR.21.8)

- Support legislation that requires improved fuel economy in private and commercial vehicles. (Policy CR.21.9)

- Provide residents and businesses with comprehensive and efficient solid recycling services that, at a minimum, meet state diversion mandates. (Policy CR.23.1)

- Implement the policies and programs in the Source Reduction and Recycling Element. (Policy R.23.2)

- Establish a construction waste recycling program that mandates the recycling of a high percentage of construction and demolition waste. (Policy CR.23.4)

- Maximize composting opportunities for Torrance residents and businesses. (Policy CR.23.5)

- Work with Los Angeles County and private businesses to continue programs that encourage the recycling of electronics, tires, and motor oil. (Policy CR.23.6)

- Establish permanent collection centers within the City to meet the recycling and hazardous materials disposal needs of residents, businesses, and City government. (Policy CR.23.7)

- Encourage sustainable construction practices and the use of energy-saving technology. Consider establishing a green building program that draws from the LEED (Leadership in Energy & Environmental Design) standards. (Policy CR.24.1)

- Renovate City buildings and facilities to achieve as many LEED or LEED-related pre-requisites and credits as feasible. (Policy CR.24.2)

- Explore the feasibility of adopting green building requirements for all new commercial and industrial development projects of large scale. (Policy CR.24.3)

- Provide information to the residents and the residential development community about options for "going green" in residential construction, including option for Low Impact Development. (Policy CR.24.4)

5.2.5 Existing Regulations and Standard Conditions

Future development projects that were considered for approval pursuant to the proposed general plan update would be required to comply with the following laws and regulations:

State and Federal Regulations

- SCAQMD Rule 201: Permit to Construct
- SCAQMD Rule 402: Nuisance Odors

- SCAQMD Rule 403: Fugitive Dust
- SCAQMD Rule 1113: Architectural Coatings
- SCAQMD Rule 1401: New Source Review of Carcinogenic Air Contaminants
- SCAQMD Rule 1403: Asbestos Emissions from Demolition/Renovation
- CARB Rule 2840: Airborne Toxics Control Measure
- Building Energy Efficiency Standards (Title 24)
- Appliance Energy Efficiency Standards (Title 20)
- Motor Vehicle Standards (AB 1493)

5.2.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, the following impacts would be less than significant: 5.2-4 and 5.2-6.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.2-1 Buildout of the City of Torrance in accordance with the proposed land use plan would potentially conflict with the South Coast Air Quality Management District's Air Quality Management Plan.

- Impact 5.2-2 Construction activities associated with buildout of the Torrance General Plan update would generate short-term emissions that exceed the South Coast Air Quality Management District's regional significance thresholds for VOC, CO, NO_x, PM_{10}, and $PM_{2.5}$; cumulatively contribute to the South Coast Air Basin nonattainment designations for O_3, PM_{10}, and $PM_{2.5}$; and potentially elevate concentrations of air pollutants at sensitive receptors.

- Impact 5.2-3 Buildout of the Torrance General Plan Update would generate long-term operational phase emissions that exceed the South Coast Air Quality Management District's regional significance thresholds for VOC, CO, NO_x, PM_{10}, and $PM_{2.5}$ and cumulatively contribute to the South Coast Air Basin nonattainment designations for O_3, PM_{10}, and $PM_{2.5}$.

- Impact 5.2-5 Approval of residential and other sensitive land uses within the vicinity of substantial pollutant generators would result in exposure of persons to substantial concentrations of air pollutant emissions

5.2.7 Mitigation Measures

Impact 5.2-1

Consistency with the AQMP

Goals and policies are included in the Torrance General Plan update that would facilitate continued City cooperation with SCAQMD and SCAG to achieve regional air quality improvement goals, promotion of energy conservation design and development techniques, encouragement of alternative transportation modes, and implementation of transportation demand management strategies. However, no mitigation measures are available that would eliminate or reduce impacts associated with consistency with the AQMP.

Impact 5.2-2

Construction Emissions

2-1 The City of Torrance Building Department shall require that all new construction projects incorporate feasible mitigation measures to reduce air quality emissions. Potential measures shall be incorporated as conditions of approval for a project and may include:

- Requiring fugitive dust control measures that exceed South Coast Air Quality Management District's Rule 403, such as:
    - Requiring use of nontoxic soil stabilizers to reduce wind erosion.
    - Applying water every four hours to active soil-disturbing activities.
    - Tarping and/or maintaining a minimum of 24 inches of freeboard on trucks hauling dirt, sand, soil, or other loose materials.
- Using construction equipment rated by the United States Environmental Protection Agency as having Tier 3 or more restrictive exhaust emission limits.
- Ensuring construction equipment is properly serviced and maintained to the manufacturer's standards.
- Limiting nonessential idling of construction equipment to no more than five consecutive minutes.
- Using super-compliant VOC paints for coating of architectural surfaces whenever possible. A list of Super-Compliant architectural coating manufactures can be found on the South Coast Air Quality Management District's website: http://www.aqmd.gov/prdas/brochures/Super-Compliant_AIM.pdf.

Impact 5.2-3

Operational Emissions

No feasible mitigation measures are available that reduce operational phase emissions related to buildout of the proposed general plan update.

Impact 5.2-5

Air Quality Compatibility

2-2 The City of Torrance shall evaluate new development proposals in the City for potential air quality incompatibilities according to the California Air Resources Board's *Air Quality and Land Use Handbook: A Community Health Perspective* (April 2005). New development that is inconsistent with the recommended buffer distances shall only be approved if feasible mitigation measures, such as high-efficiency minimum efficiency reporting value filters have been incorporated into the project design to protect future sensitive receptors from harmful concentrations of air pollutants as a result of proximity to existing air pollution sources.

5.2.8 Level of Significance After Mitigation

Despite the application of mitigation measures, Impacts 5.2-1, 5.2-2, 5.2-3, and 5.2-5 were found to result in **significant and unavoidable** air quality impacts due to the magnitude of emissions that would be generated.