Chapter 3.3
Meteorology and Air Quality

3.3.1 Introduction

This chapter discusses the potential air emission impacts associated with the proposed project. Discussions of impacts related to construction and operation emissions are provided. Construction-related air emission estimates were developed using proposed construction activities and equipment. Operation-related emissions were based on vehicle trips and on the stationary and area sources planned for the proposed project.

3.3.2 Setting

3.3.2.1 Regulatory Setting

The proposed project is located at the southern end of the City of Los Angeles, in the Port of Los Angeles, which is located in the South Coast Air Basin (SCAB). The SCAB is one of 14 geographical air basins in California and includes all of Orange County, as well as the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties. Various aspects of air quality in the SCAB are regulated by the EPA, the CARB, and the SCAQMD. In addition, regional and local jurisdictions play a role in air quality management. The role of each regulatory agency is discussed below.

U.S. Environmental Protection Agency

The Federal Clean Air Act (CAA), passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. EPA is responsible for implementing most aspects of CAA. Basic elements of the act include national ambient air quality standards for major air pollutants, hazardous air pollutants standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The CAA requires that EPA NAAQS and reassess, at least every 5 years, whether adopted standards are adequate to protect public health based on current scientific evidence. The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the nation's citizens. NAAQS are shown in Table 3.3-1.

In November 1990, Congress enacted a series of amendments to the CAA intended to intensify air pollution control efforts across the nation. One of the primary goals of the 1990 amendments to the CAA was an overhaul of the planning provisions for those areas not currently meeting NAAQS. The CAA identifies specific emission reduction goals, requires both a demonstration of reasonable further progress and attainment, and incorporates more stringent sanctions for failure to attain the NAAQS or to meet interim attainment milestones.

California Air Resources Board

The California Clean Air Act (CCAA) was signed into law on September 30, 1988. Through its many requirements, the CCAA serves as an important consideration in attainment planning efforts. CARB, which became part of the California Environmental Protection Agency (Cal-EPA) in 1991, is responsible for ensuring implementation of the CCAA, responding to the federal CAA, and for regulating emissions from motor vehicles and consumer products. CARB's mission is to promote and protect public health, welfare, and ecological resources through the effective and efficient reduction of air pollutants while recognizing and considering the effects on the economy of the state.

CARB sets air quality standards for the state at levels to protect public health and welfare with an adequate margin of safety. The California Ambient Air Quality Standards (CAAQS) describe adverse conditions; that is, pollution levels must be below these standards before a Basin can attain the standard. Air quality is considered in "attainment" if pollutant levels are continuously below or equal to the standards and violate them no more than once each year. California standards are generally more stringent than the national standards. The CAAQS are also shown in Table 3.3-1.

South Coast Air Quality Management District

The California Clean Air Act (Health & Safety Section 40412) designates SCAQMD as the agency principally responsible for comprehensive air pollution control in the SCAB and certain areas of the Southeast Desert Air Basin (SEDAB). To that end, SCAQMD, a regional agency, works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments, and cooperates actively with all state and federal government agencies. SCAQMD develops rules and regulations, establishes permitting requirements, inspects emission sources, and enforces such measures through education programs or fines, when necessary.

Table 3.3-1. Ambient Air Quality Standards Applicable in California

			Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
Pollutant	Symbol	Average Time	California	National	California	National	California	National
Ozone	O_3	1 hour	0.09	0.12	180	235	If exceeded	If exceeded on more than 3 days in 3 years
		8 hours	NA	0.08	NA	157	NA	If exceeded on more than 3 days in 3 years
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
(Lake Tahoe only)		8 hours	6	NA	7,000	NA	If equaled or exceeded	NA
Nitrogen dioxide	NO_2	Annual average	NA	0.053	NA	100	NA	If exceeded
		1 hour	0.25	NA	470	NA	If exceeded	
Sulfur dioxide	SO_2	Annual average	NA	0.03	NA	80	NA	If exceeded
		24 hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	NA	655	NA	NA	NA
Hydrogen sulfide	H_2S	1 hour	0.03	NA	42	NA	If equaled or exceeded	NA
Vinyl chloride	C_2H_3Cl	24 hours	0.010	NA	26	NA	If equaled or exceeded	NA
Inhalable particulate matter	PM10	Annual geometric mean	NA	NA	20	NA	If exceeded	NA
		Annual arithmetic	NA	NA	NA	50	NA	If exceeded
		mean24 hours	NA	NA	50	150	If exceeded	If average 1% over three years is exceeded
	PM2.5	Annual geometric mean	NA	NA	12	NA	If exceeded	NA
		Annual arithmetic	NA	NA	NA	15	NA	If exceeded
		mean24 hours	NA	NA	NA	65	NA	If average 2% over three years is exceeded
Sulfate particles	SO_4	24 hours	NA	NA	24	NA	If equaled or	NA

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Lead particles	Pb	Calendar quarter	NA	NA	NA	1.5	exceeded NA	If exceeded no more than 1 day per year
		30 days	NA	NA	1.5	NA	If equaled or exceeded	NA

Notes:
All standards are based on measurements at 25ºC and 1 atmosphere pressure.
National standards shown are the primary (health effects) standards.
NA = not applicable

SCAQMD is responsible for reducing emissions from area and point sources. SCAQMD works closely with CARB, which regulates mobile sources, and is in the process of developing programs such as limits on bus or truck idling and requirements for low-emission vehicle fleets. About 40% of the air pollution in the area comes from stationary and area sources, whereas the remaining 60% comes from mobile sources—cars, trucks and buses, construction equipment, locomotives, ships, and airplanes. Emission standards for mobile sources are established by state or federal agencies, such as the CARB and EPA, rather than by local agencies such as SCAQMD.

Although SCAQMD does not directly control pollution from motor vehicles, it does have transportation-related programs aimed primarily at reducing the number of cars on the road and promoting the use of cleaner fuels and vehicles.

SCAQMD also employs a range of activities to control stationary sources of pollution. In addition, SCAQMD is responsible for developing and adopting an Air Quality Management Plan (AQMP) that serves as the blueprint for all the future rules necessary to bring the SCAB into compliance with federal and state clean air standards.

Air Quality Management Plan

SCAQMD is required to produce plans to show how air quality will be improved. AQMPs must be updated every 3 years, and each iteration of the plan is based on a 20-year horizon. SCAQMD adopted its 1997 AQMP in November 1996. The 1997 AQMP represented the first plan addressing CAA requirements to demonstrate attainment of federal ambient air quality standards for particulate matter less than 10 microns in diameter (PM_{10}). The plan also updated the demonstration of attainment for ozone and carbon monoxide, and included a maintenance plan for nitrogen dioxide (NO_2), because the SCAB now qualifies for attainment of that federal standard. The 1997 plan also reflected the combined technical and policy inputs of EPA, CARB, and SCAG.

The 1997 AQMP proposed policies and measures to achieve federal and state standards for healthful air quality in the SCAB. The 1997 AQMP also addressed several state and federal planning requirements and showed that, with refinements to the 1994 AQMP control strategy, sufficient emission reductions are achieved to meet all federal criteria pollutant standards within the time frames allowed under CAA.

The AQMD Governing Board adopted the *1999 Amendment to the 1997 Ozone SIP Revision for the South Coast Air Basin* at its public hearing on December 10, 1999. The 1999 amendment provides revisions to the ozone portion of the 1997 AQMP that was submitted to EPA as a revision to the SCAB portion of the 1994 California Ozone SIP. On January 12, 1999, EPA proposed partial approval/disapproval of the 1997 Ozone SIP revisions, citing concerns with the ozone control strategy provided in the 1997 AQMP. To address these concerns, the AQMD staff prepared the 1999 amendment.

The 1999 amendment provides additional short-term stationary source control measures that implement portions of the 1997 Ozone SIP's long-term stationary-source control measures. In addition, the amendment revises the adoption and implementation schedule for the remaining 1997 Ozone SIP short-term stationary-source control measures that the SCAQMD is responsible for implementing.

The 1999 amendment addresses EPA concerns relative to the adoption schedule for the 1997 Ozone SIP Revision short-term control measures and the increased reliance on long-term control measures. EPA indicated in a letter to the SCAQMD Governing Board that it believes the 1999 amendment would be approvable and would expedite the review and approval process.

The 1999 amendment does not revise the PM_{10} portion of the 1997 AQMP, emission inventories, the mobile-source portions of the 1997 Ozone SIP Revision, or the ozone attainment demonstration. However, with the new short-term stationary-source control measures, additional emission reductions are projected to occur in the near term.

Specifically, the 1999 amendment

- includes new short-term stationary-source control measures;
- revises the adoption/implementation schedule for 13 short-term volatile organic compounds (VOCs) and oxides of nitrogen (NO_x) stationary-source control measures from the 1997 Ozone SIP Revision;
- provides further VOC emission reductions in the near-term; and
- revises the emission reduction commitments for the long-term control measures in the 1997 Ozone SIP Revision long-term stationary source control measures that the SCAQMD is responsible for implementing.

Regional and Local Jurisdictions

Regional and local jurisdictions also play a role in air quality. Regional jurisdictions, such as SCAG, prepare population, employment, and traffic forecasts that are key components of regional air quality plans.

Local governments have the authority and responsibility to reduce air pollution through their police power and land use decision-making authority. Specifically, local governments are responsible for mitigating emissions resulting from land use decisions and for implementing transportation control measures as outlined in the AQMP.

The AQMP assigns local governments certain responsibilities to assist in meeting air quality goals and policies. In general, a first step towards implementation of a local government's responsibilities will be accomplished through development of an enforceable local air quality implementation plan, by amending a city's or county's general plan, or by preparing a free-standing air quality element to the

general plan. Air quality policies need to be subsequently codified into zoning ordinances (or other legally enforceable mechanisms) that will enable implementation of the AQMP.

Through capital improvement programs, local governments can fund infrastructure that contributes to improved air quality, by requiring such improvements as bus turnouts, energy-efficient streetlights, and synchronized traffic signals. Local governments can also take administrative actions that reduce air pollution, such as creating a telecommunication program for local government employees that will enable them to work at home.

In accordance with CEQA requirements and the CEQA review process, local governments assess air quality impacts, require mitigation of potential air quality impacts by conditioning discretionary permits, and monitor and enforce implementation of such mitigation.

3.3.2.2 Environmental Setting

Air Quality

Air quality primarily is determined by several factors, including the type and amount of contaminants emitted into the atmosphere, the size and topography of the basin, and the basin's meteorological conditions. The SCAB has low mixing heights and light winds, the combination of which is conducive to the accumulation of air pollutants.

Air quality is measured by comparing contaminant levels in ambient air samples to national and state standards. These standards are set by EPA and CARB at levels to protect public health and welfare with an adequate margin of safety. Air quality standards specify the upper limits of concentrations and duration in the ambient air, consistent with the management goal of preventing specific harmful effects.

The SCAB has been in non-attainment for several air pollutants, including carbon monoxide, PM_{10}, and ozone, for some time; agencies are working toward improving air quality in the region.

Many of the same factors that make living in Southern California so desirable also contribute to the worst smog problem in the nation. Gentle ocean breezes carry pollutants into the inland valleys where they are trapped by the surrounding mountains. Thermal inversions act like a lid over the basin. Bright sunshine and warm temperatures cause some pollutants to react with each other, forming even more pollution. These natural conditions, along with pollution from more than 9 million motor vehicles, thousands of businesses and industries, and countless consumer products, create an ideal smog factory.

Different types and levels of air pollution can cause everything from watery eyes and fatigue to respiratory disease and lung damage—even cancer. Because this

area's smog problem is so severe, SCAQMD often finds itself at the forefront of the nation's efforts to reduce air pollution.

Air quality monitoring records of recent years have proven the effectiveness of ongoing pollution control efforts. Air quality in Southern California continues to improve, with recent years registering some of the lowest levels in decades. Yet Southern California still experiences some of the worst air quality in the nation, requiring continued diligence to meet air quality standards.

Criteria Pollutants and Air Monitoring

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health. The federal and state standards have been set at levels above which concentrations could be generally harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort, with a margin of safety.

Criteria air pollutant concentrations in the SCAB are some of the highest in the country. This regional problem exists because of heavy industry, concentrated populations, and dense vehicle traffic within the SCAB. These pollutants are known to damage property, impair visibility, and cause damage to plants. Adverse effects upon human health, however, are of greatest concern.

At present, six criteria air pollutants are of concern: sulfur dioxide (SO_2), lead (Pb), carbon monoxide (CO), nitrogen dioxide (NO_2), ozone, and fine particulate matter (PM_{10} and $PM_{2.5}$). The SCAB is classified as non-attainment for the state and federal ozone, PM_{10}, and CO standards. The basin is classified as attainment or unclassified for the state and federal NO_2, SO_2, and Pb standards. CARB has monitored the gaseous criteria pollutants CO, NO_2, ozone, and SO_2 since its inception in 1968. Monitoring is performed to demonstrate attainment or non-attainment of national and state ambient air quality standards. The following discussion provides a description of the criteria air pollutants of concern for the SCAB.

Carbon Monoxide (CO)

Automobiles and other types of motor vehicles are the main source of this pollutant in the SCAB. CO gas is colorless and odorless, which adds to its danger. CO concentrations typically peak nearest a source, such as roadways, and decrease rapidly as distance from the source increases. In high concentrations, CO can cause physiological and pathological changes, and ultimately death, by incapacitating the red blood cells and interfering with their ability to carry oxygen to body tissues. The symptoms of excessive exposure—headaches, fatigue, slow reflexes, and dizziness—also occur in healthy people.

Ozone

The most widespread air quality problem in the state, ozone is a colorless gas with a pungent, irritating odor. Ozone is not emitted directly into the atmosphere but is formed primarily when reactive organic compounds (ROCs) and nitrogen

oxides react in the presence of sunlight. Ozone is present in relatively high concentrations in the SCAB, and the damaging effects of photochemical smog are generally related to the concentrations of ozone. Ozone may pose its worst health threat to those who already suffer from respiratory diseases. Ozone also hurts healthy people. Ozone's health effects can include reduced lung function; aggravated existing respiratory illness; and irritated eye, nose, and throat tissues. Chronic exposure can cause permanent damage to the alveoli of the lungs. The SCAB has peak ozone levels 2.5 times higher than the federal health standard, and 3 times higher than the more stringent state standard.

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

PM_{10} and $PM_{2.5}$ consist of extremely small suspended particles or droplets 10 microns and 2.5 microns or smaller respectively in diameter that can lodge in the lungs, contributing to respiratory problems. PM_{10} and $PM_{2.5}$ arise from such sources as road dust, diesel soot, combustion products, abrasion of tires and brakes, construction operations, and windstorms. They are also formed in the atmosphere from NO_2 and SO_2 reactions with ammonia. PM_{10} and $PM_{2.5}$ scatter light and significantly reduce visibility.

PM_{10} and $PM_{2.5}$ pose a serious health hazard, alone or in combination with other pollutants. More than half of the smallest particles inhaled will be deposited in the lungs and can cause permanent lung damage. Fine particulates can also have a damaging effect on health by interfering with the body's mechanism for clearing the respiratory tract or by acting as a carrier of an absorbed toxic substance

Existing Air Quality Conditions

SCAQMD has divided the SCAB into 27 source/receptor areas (SRAs), in which 31 monitoring stations operate. These monitoring stations are located within populated areas and record ambient concentrations of air pollutants. The monitored pollutant concentrations are considered representative of the ambient air quality throughout each SRA.

The project site is located in SRA 4, which encompasses the South Coastal Los Angeles County. The station that monitors this SRA is the North Long Beach monitoring station. Existing levels of ambient air quality and historical trends in the project area are best documented by measurements made by CARB at this station. Monitored air pollutants include ozone, CO, and PM_{10}. Air quality trends for the past 3 years at these stations are presented in Table 3.3-2.

Ozone monitoring data shown in Table 3.3-2 shows the highest 1-hour ozone concentration in 1999. There were three violations of the state 1-hour ozone standard in both 1999 and 2000. Table 3.3-2 also shows that there were no violations of the 8-hour federal ozone standard at the North Long Beach monitoring station during the most recent three years for which data are available.

CO monitoring data shown in Table 3.3-2 shows no violations of the 1-hour or 8-hour state or federal standards. The highest 1-hour CO concentration of 9.7 parts per million (ppm) occurred in 2000, whereas the highest 8-hour concentration, 5.7 ppm, also occurred in 2000.

PM_{10} monitoring data shown in Table 3.3-2 shows no violations of the federal PM_{10} standards. However, the California PM_{10} standard was violated several times each year.

$PM_{2.5}$ monitoring data shown in Table 3.3-2 shows several violations of the federal $PM_{2.5}$ standards in the past 3 years.

Table 3.3-2. Ambient Air Quality Monitoring Data from North Long Beach Monitoring Station

Pollutant Standards	1999	2000	2001
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.13	0.12	0.09
No. Days Standard Exceeded			
NAAQS (1-hour) > 0.12 ppm	1	0	0
CAAQS (1-hour) > 0.09 ppm	3	3	0
Maximum 8-hour concentration (ppm)	0.08	0.08	0.07
No. Days Standard Exceeded			
NAAQS (8-hour) > 0.08 ppm	0	0	0
Carbon Monoxide (CO)			
Maximum 8-hour concentration (ppm)	5.5	5.7	4.7
Maximum 1-hour concentration (ppm)	7.5	9.7	6.0
No. Days Standard Exceeded			
NAAQS (8-hour) $\geq$ 9.0 ppm	0	0	0
NAAQS (1-hour) $\geq$ 35 ppm	0	0	0
CAAQS (8-hour) $\geq$ 9.0 ppm	0	0	0
CAAQS (1-hour) $\geq$ 20 ppm	0	0	0
Particulate Matter (PM_{10})			
Maximum 24-hour concentration ($\mu g/m^3$)	79	105	91
Second highest 24-hour concentration ($\mu g/m^3$)	77	92	74
Average arithmetic mean concentration ($\mu g/m^3$)	38.8	37.7	37.0
Average geometric mean concentration ($\mu g/m^3$)	36	34	34
No. Days Standard Exceeded			
NAAQS (24-hour) > 150 $\mu g/m^3$	0	0	0
CAAQS (24-hour) > 50 $\mu g/m^3$	13	12	10
Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration ($\mu g/m^3$)	66.9	81.5	72.9
2nd Highest 24-hour concentration ($\mu g/m^3$)	54.2	74.5	58.2
Average arithmetic mean concentration ($\mu g/m^3$)	20.7	19.6	21.2
No. Days Standard Exceeded			
NAAQS (24-hour) > 15 $\mu g/m^3$	1	4	1

Sources: CARB 2002; EPA 2002.

Toxic (Non-Criteria Air Pollutants) — Multiple Air Toxics Exposure Study II

The Multiple Air Toxics Exposure Study (MATES-II) was an urban air toxics monitoring and evaluation study conducted for the South Coast Air Basin (SCAB), which includes all of Orange County and the parts of Los Angeles, Riverside, and San Bernardino Counties seaward of the mountains.

Air toxics consist of a variety of compounds, including metals, minerals, soot, and hydrocarbon-based chemicals. These pollutants are heavily controlled, both through regulations aimed at reducing smog, like California's requirement for cleaner burning gasoline, and regulations aimed at specific sources of toxic pollutants, such as chrome plating plants that emit hexavalent chromium.

MATES-II was initiated as part of the Environmental Justice Initiatives adopted by the SCAQMD Governing Board in October 1997. A panel of scientists from universities, an environmental group, businesses, and other government agencies helped design and guide the study.

The study represented one of the most comprehensive air toxics programs ever conducted in an urban environment, and consisted of several elements: a comprehensive monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to fully characterize Basin risk.

The study was aimed at determining the cancer risk from air toxics throughout the SCAB by monitoring toxics continually for 1 year at 10 monitoring sites. Another goal was to determine if there were any sites where concentrations of industry were causing a disproportionate cancer burden on surrounding communities. To do so, AQMD monitored toxic pollutants at 14 sites for one month each with three mobile monitors specially designed for the study.

The monitoring program measured more than 30 air pollutants, including both gas and particulates. The monitoring study was accompanied by a computer modeling study in which AQMD estimated the risk of cancer from breathing toxic air pollution throughout the region based on emissions and weather data. The modeling showed that the highest risk is in the urban areas where there is heavy traffic and high concentrations of population and industry.

MATES II found that the average cancer risk in the region from carcinogenic air pollutants, excluding diesel particulate, ranges between 300 in a million and almost 600 in a million, with a regional average of 420 in a million. When diesel particulate is included, the cancer risk ranges from about 1,100 in a million to 1,750 in a million, with an average regional risk of about 1,400 in a million. The higher risk levels were found in the urban core areas in south central Los Angeles County, in the harbor area and near freeways.

Overall, the study showed that motor vehicles and other mobile sources of diesel particulates accounted for about 90% of the cancer risk and industries and other stationary sources the remaining 10%. The study analyzed only cancer risk, though some of the pollutants cause other health problems, too. The study also concluded that Wilmington and San Pedro residents experience some of the highest cancer risks in the SCAB from breathing polluted air.

Based on the preliminary finding that diesel particulate is the primary toxic air pollutant in the region, AQMD has approved fleet rules to limit diesel exhaust emitted by fleets of trucks and buses in the region. That rule will be one of many measures outlined in a comprehensive plan to reduce toxic air pollution from both mobile and stationary sources. Other programs to reduce diesel emissions

include AQMD grant programs that cover conversion of diesel equipment to clean fuels.

Current Onsite Activity

The proposed project site currently contains marina, boat repair, and ancillary uses. Existing uses generate air pollutants from energy consumption, boat coating, and repair operations as well as from automobile and boat trips. Estimates of current emissions associated with these operations, based upon SCAQMD and EPA methodologies, are shown in Tables 3.3-3 and 3.3-4. Other existing emission sources from existing activities at the project site include area sources such as the use of architectural coatings on buildings, landscaping and maintenance equipment, and other similar small-scale emission sources.

Table 3.3-3. Existing Weekday Emissions (lbs/day)

Emission Source	ROG	NO_x	CO	PM_{10}	SO_x
Boat Operation	538	397	1,536	39	4
Motor Vehicles	34	25	267	13	0
Boat Repair/Coatings	119	–	–	–	–
Area Sources	1	7	5	0	0
Fuel Pumps	6	–	–	–	–
Totals	697	429	1,808	52	4

Notes:

The total number of existing boat slips is 530. Boat operations assume 4 hours per day of engine operation for powerboats and 1 hour per day for sailboats. Estimates also assume a load factor of 40% for powerboats and 10% for sailboats, and that 10% of all boats operate each weekend. Motor vehicle emissions were estimated using the URBEMIS model and are based on the trip generation rates developed in the "Transportation/Circulation" chapter.

Table 3.3-4. Existing Weekend Emissions (lbs/day)

Emission Source	ROG	NOx	CO	PM_{10}	SOx
Boat Operation	1,075	795	3,072	77	8
Motor Vehicles	46	40	433	21	0
Boat Repair/Coatings	119	–	–	–	–
Area Sources	1	7	5	0	0
Fuel Pumps	6	–	–	–	–
Totals	1,247	842	3,519	98	8

Notes:

The total number of existing boat slips is 530. Boat operations assume 4 hours per day of engine operation for powerboats and 1 hour per day for sailboats. Estimates also assume a load factor of 40% for powerboats and 10% for sailboats, and that 20% of all boats operate on weekend days. Motor vehicle emissions were estimated using the URBEMIS model and are based on the trip generation rates developed in the "Transportation/ Circulation "chapter.

Sensitive Receptors

A sensitive receptor is an individual who is more susceptible to the effects of air pollution than the population at large. Sensitive receptors generally include children and elderly individuals. No hospitals, nursing homes, schools, or daycare centers are currently located in the immediate vicinity of the proposed project site. However, several residences are directly west and northwest of the Cabrillo Way Marina project site.

3.3.3 Impacts and Mitigation

This section presents a discussion of the potential air quality impacts associated with the development of the proposed project. Air quality impacts are divided into construction-related and operation-related emissions, which result from long-term buildout of the project. Mitigation measures are provided for impacts found to be significant.

3.3.3.1 Methodology

Construction-Related Emissions

Construction of the proposed Cabrillo Way Marina project would generate pollutant emissions from a variety of emission sources and activities. Those activities include

- building and dock demolition;
- grading, dredging, and filling operations;
- travel by workers to the construction sites;
- delivery and hauling of construction materials and supplies to the project site;
- hauling of demolished and discarded materials from the site to landfills;
- onsite construction vehicles and equipment;
- application of architectural coatings; and,
- laying of asphalt for parking lots, and roads.

The Cabrillo Way Marina construction emission estimates were based on the proposed construction phasing illustrated in Figure 3.3-1. Emissions were estimated using the approach included in the URBEMIS model combined with emission factors developed by the CARB and the SCAQMD. The URBEMIS model is used to calculate construction and operational emissions associated with land development projects and includes EPA, SCAQMD, and CARB emission factors embedded within it. URBEMIS was developed under the guidance of several California air districts and is available from the SCAQMD's website.

To estimate construction emissions, proposed project phasing was evaluated to identify the periods of maximum phase overlap. Phases 1 and 2 infrastructure and facilities construction, and Phase 3 infrastructure construction, would overlap from the 4th quarter 2004 through the 2nd quarter of 2005. Another period of substantial overlap would occur during the 4th quarter of 2005 when construction of Phase 1 and 2 facilities and Phase 3 infrastructure and facilities would occur simultaneously.

Operation-Related Emissions

Air pollutant emissions associated with project occupancy and operation would be generated by consumption of natural gas, boat repair operations, and by the operation of both motor vehicles and pleasure crafts. Regional daily motor vehicle emissions of ozone precursors, CO, and PM_{10} were estimated using traffic data prepared for this project by Kaku Associates. These traffic data, including trip generation rates, were entered into the URBEMIS model to obtain emissions of ROC, NO_x, CO, SO_x (sulfur oxide), and PM_{10}.

Estimates of area source emissions of consumption of natural gas were made using the URBEMIS model. Emissions associated with boat repair operations were similarly calculated using emission factors from CARB, "Public Meeting to Consider Approval of California Pleasure Craft Exhaust Emissions Inventory," November 1998.

Two separate methods were used to estimate motor vehicle emissions in this analysis. CO concentrations generated by motor vehicles were estimated using the CALINE4 model. Descriptions of the model and the modeling assumptions that were used are included in Appendix C. The modeling was performed at a selected intersection according to the guidelines provided by SCAQMD and described in Appendix C. Traffic numbers used to model CO concentrations were provided by Kaku Associates (Appendix B).

Pleasure craft emissions were calculated based upon the forecast slips sizes in the project description. Based on the existing division of power to sail usage at the existing Cabrillo Marina Phase I, slip-based boats were assumed to be 43% power and 57% sail. All boats in the dry stack building were assumed to be powerboats. Individual boat size distribution and estimates of boat to horsepower relationship were provided by Moffatt and Nichol Engineers and were based on the BUC Boat Users Guide, 1994. Once horsepower-versus-boat-length was established, emissions were estimated using the methodology specified in the "Public Meeting to Consider Approval of California Pleasure Craft Exhaust Emissions Inventory," November 1998.

Several assumptions were made to estimate boat emissions. Ten percent of the total wet slip fleet (5% of dry stack fleet) was assumed to be operating on weekdays and 20% of the wet slip fleet (30% of dry stack fleet) on weekends. Powerboats were assumed to operate at 4 hours per day and sailboats at 1 hour per day. Additional assumptions used to estimate air emissions were as follows: 100% of powerboats over 40 feet were assumed to be diesel powered, 70% of powerboats less than 40 feet in length were assumed to be diesel powered, and 80% of sailboats less than 40 feet were assumed to be diesel powered.

3.3.3.2 Thresholds of Significance

The *Draft Los Angeles CEQA Thresholds Guid*e (City of Los Angeles 1998) does not provide for a citywide significance threshold for construction emissions, but instead references SCAQMD's *CEQA Air Quality Handbook* and/or EPA's AP-42 contain emission factors and assessment methodologies for application in determining significance. It further places the responsibility of each lead City department to determine the appropriate standards. Project-related factors to be used in a case-by-case evaluation of significance include the following:

- Combustion emissions from construction equipment:
  - type, number of pieces, and usage for each type of construction equipment;

- estimated fuel usage and type of fuel (diesel, natural gas) for each type of equipment; and
- emission factors for each type of equipment.

- Fugitive dust
  - Grading, excavation, and hauling;
    - amount of soil to be disturbed onsite or moved offsite;
    - emission factors for disturbed soil;
    - duration of grading, excavation and hauling activities;
    - type and number of pieces of equipment to be used; and
    - projected haul route.
  - Heavy-duty equipment travel on unpaved roads:
    - length and type of road;
    - type, number of pieces, weight and usage of equipment; and
    - type of soil.
- Other mobile source emissions
  - number and average length of construction worker trips to project site, per day; and
  - duration of construction activities.

For the purposes of this Recirculated Draft SEIR, the air quality thresholds of significance used for this analysis are based on thresholds established by SCAQMD (SCAQMD 1993). Therefore, construction-related air emissions would normally be considered significant if the project would result in any of the following:

AQ-1: The project would result in construction-related emissions that exceed SCAQMD's Thresholds

Project construction-related air emissions would have a significant effect if they resulted in concentrations that create either a violation of an ambient air quality standard (as identified in Table 3.3-1) or contribute to an existing air quality violation. Because ambient air quality already exceeds existing standards in the SCAB (for the primary pollutants that would be emitted by construction of the proposed project), SCAQMD has established specific significance thresholds to assess the impact on regional air quality. Table 3.3-5 presents the SCAQMD's emission significance thresholds at which construction emissions are considered to have a significant effect on air quality throughout the SCAB.

Table 3.3-5. Allowable Regional Emission Limits

Air Pollutant	(pounds/day)	(tons/quarter)
Reactive organic compounds	75	2.5
Carbon monoxide	550	24.75
Nitrogen oxides	100	2.5
Sulfur oxides	150	6.75
Particulates (PM_{10})	150	6.75

Source: SCAQMD 1993.

The *Draft Los Angeles CEQA Thresholds Guide* (City of Los Angeles 1998) provides specific significance thresholds for operational air quality impacts, which are also based on SCAQMD standards. For the purposes of this Recirculated Draft SEIR, a project would normally be considered to result in a significant impact if it would result in at least one of the following:

AQ-2: Operational emissions would exceed 10 tons per year of volatile organic gases or any of the daily thresholds presented below.

Air Pollutant	(pounds/day)
Reactive organic compounds	55
Carbon monoxide	550
Nitrogen oxides	55
Sulfur oxides	150
Particulates (PM_{10})	150

Source: SCAQMD 1993, City of Los Angeles, 1998

AQ-3: The project would result in either of the following conditions at an intersection or roadway within one-quarter mile of a sensitive receptor:

- the proposed project causes or contributes to an exceedance of the California 1- hour or 8-hour CO standards of 20 or 9.0 parts per million (ppm), respectively; or
- the incremental increase due to the project is equal to or greater than 1.0 ppm for the California 1-hour CO standard, or 0.45 ppm for the 8-hour CO standard.

AQ-4: The project creates an objectionable odor at the nearest sensitive receptor.

Additionally, the *Draft Los Angeles CEQA Thresholds Guide* (City of Los Angeles 1998) includes thresholds to determine the potential for toxic airborne emissions. The determination of significance shall be made on a case-by-case basis, considering the following factors:

- the regulatory framework for the toxic material(s) and process(es) involved;
- the proximity of the toxic air contaminants to sensitive receptors;
- the quantity, volume and toxicity of the contaminants expected to be emitted;
- the likelihood and potential level of exposure; and
- the degree to which project design will reduce the risk of exposure.

Therefore, for the purposes of this Recirculated Draft SEIR, a project would normally be considered to result in a significant impact if it would result in the following:

AQ-5. The project would expose receptors to significant levels of toxic air contaminants.

3.3.3.3 "No Net Increase" Policy

On October 10, 2001, the Board of Harbor Commissioners, acting on the request of Major Jim Hahn, adopted an environmental policy regarding the Port of Los Angeles operations. Specifically, the Board stated "… our goal will that there will be no net increase in air emissions or traffic impact from future Port operations." The vehicle for this goal is to be the conduct of environmental studies to be carried out by LAHD staff in coordination with the newly formed Port Community Advisory Committee (PCAC). At the PCAC meeting of March 21, 2002, Board President, Commissioner Tonsich, also established that the date for establishing the baseline for meeting the goal of "no net increase" would be October 10, 2001.

In accordance with the wishes of the Board, LAHD staff prepared a concept plan for the Board and PCAC, which was made available in January 2002 and provided to the PCAC for their review. That plan includes as a first step developing an air emission inventory against which the baseline can be measured. To date, the inventory portion of the "no net increase" air quality work has begun but has not yet been completed. The focus of the air study is diesel particulates from Port operations. Even though the "no net increase" goal has been established by the LAHD, it is not meant to be included as an additional mitigation measure for each Port project. In the context of the CEQA, LAHD staff are directed to apply feasible mitigation measures to individual projects, which will help meet the Board's no net increase goal. However, LAHD staff do not believe it is the intention of the Board to hold individual projects immediately accountable for achieving "no net increase." Consequently, the no net increase goal is not used as a significance criteria in this air quality analysis of the Cabrillo Marina project.

3.3.3.4 Project Impacts

Direct and Indirect Impacts

Impact AQ-1: The Project Would Result in Construction-Related Emissions that Exceed SCAQMD Thresholds

The URBEMIS model was used to develop construction-related emission estimates. Where available, project specific information was input into URBEMIS to generate emissions. When project specific information was unavailable, the URBEMIS defaults were used.

Table 3.3-6 summarizes emission estimates for each phase subdivided into demolition, infrastructure, and facility construction. Demolition activities were assumed to occur at the beginning of the project at the start of Phase 1 and were assumed to occur prior to any infrastructure or facilities construction activities. Emissions associated with demolition would be less than the SCAQMD's emission thresholds and, consequently, would not result in significant air quality impacts. The LAHD would be required to comply with the SCAQMD's Rule 403 – Fugitive Dust.

The maximum daily emissions associated with construction occur during the 4th quarter of 2004 and the 1st and 2nd quarters of 2005 when Phases 1, 2, and 3 overlap. Emissions of ROG (reactive organic gas[es]), NO_x, CO, and PM_{10} exceed the SCAQMD's daily and quarterly significance thresholds. Consequently, this is considered a significant impact. Emissions of SO_x are less than significant.

Table 3.3-7 summarizes air emissions after the above listed mitigation measures have been implemented. Even with implementation of all of the above listed mitigation measures, however, construction emissions would exceed the SCAQMD's daily and quarterly thresholds for ROG, NO_x, and CO and therefore are considered significant and unavoidable. With mitigation, PM_{10} emissions would be reduced to less than significant levels.

The PM_{10} component of diesel exhaust has been identified by the CARB as a toxic air contaminant and has been implicated as a human carcinogen. To date, the SCAQMD has not established specific guidelines or emission thresholds that can be used to assess the significance of diesel PM_{10} exhaust from construction activities. This is because in traditional health risk assessments the analysis of risk assumes a 70-year period of human exposure. For most construction projects, the length of construction is typically 3 years or less. Consequently, traditional assessments of health risk are not applicable (Smith pers. comm.). (SCAQMD has established significance thresholds for total PM_{10} emissions, but not for the diesel PM_{10} exhaust fraction.)

CARB, however, has established a diesel exhaust risk reduction program that includes certification of diesel exhaust retrofit technologies and cleaner burning

Table 3.3-6 Unmitigated Daily and Quarterly Emissions for the Cabrillo Way Marina Project

	Unmitigated Daily Emissions (pounds per day)						
Phases	ROG	NOx	CO	SO2	PM_{10} Total	PM_{10} Exhaust	PM_{10} Dust
Demolition	9.9	86.4	67.4	0.0	7.4	4.1	3.3
Phase 1 - Infrastructure	59.9	460.2	470.5	0.0	81.6	21.6	60.0
Phase 1 - Facilities	307.3	415.7	418.3	0.1	19.1	18.9	0.2
Phase 2 - Infrastructure	59.9	460.2	470.5	0.0	81.6	21.6	60.0
Phase 2 - Facilities	44.8	355.8	338.6	0.0	16.5	16.4	0.1
Phase 3 - Infrastructure	59.8	460.4	468.6	0.0	81.6	21.6	60.0
Phase 3 - Facilities	307.0	398.7	425.5	0.1	18.1	17.8	0.2
SCAQMD Daily Threshold (pounds/day)	75.0	100.0	550.0	150.0	150.0		
SCAQMD Quarterly Threshold (tons/quarter)	2.5	2.5	24.8	6.8	6.8		
Phase Overlap Maximum (pounds/day)							
Phase 1 & 2 Infra + Facilities & Phase 3 (Infra)	471.9	1691.9	1697.9	0.1	198.9	78.5	120.3
Exceed SCAQMD Daily Threshold?	Yes	Yes	Yes	No	Yes		
Maximum Quarterly Emissions (tons/quarter)							
Phase 1 & 2 Infra + Facilities & Phase 3 (Infra)	15.6	55.8	56.0	0.0	6.6	2.6	4.0
Exceed SCAQMD Quarterly Threshold?	Yes	Yes	Yes	No	No		

Notes:

Unmitigated emissions include emission reductions associated with South Coast Air Quality Management District Rule 403 for fugitive dust control. All demolition activities assumed to occur prior to start of Phase 1 infrastructure and facilities construction. Demolition includes emissions of fugitive dust from demolition activities, off-road diesel exhaust from demolition equipment, on-road heavy-duty diesel exhaust from trucks used to haul demolished materials to landfills, and demolition crew commute trips. Phases 1, 2, and 3 infrastructure include emissions associated with site grading, marina dredging, other site preparation activities, including soil import and export, and worker commute trips. Phases 1, 2, and 3 facilities construction includes emissions associated with building construction, including diesel exhaust and worker commute trips. Facilities construction also includes architectural painting offgas emissions and emissions associated with road and parking lot paving.

Emission estimates based on the URBEMIS2002 model and emission rates developed by the SCAQMD and the California Air Resources Board.

On-road emissions associated with commute trips, and heavy-duty diesel truck trips are based on the EMFAC2002 emissions model.

Off-road exhaust emissions associated with heavy-duty construction equipment was based on the California Air Resource Board's Off-Road emissions model.

Fugitive PM_{10} dust emissions based on acreage disturbed using the fugitive dust emission factor recommended by the California Air Resources Board and the SCAQMD.

Table 3.3-7. Mitigated Daily and Quarterly Emissions for the Cabrillo Way Marina Project

	Mitigated Daily Emissions (pounds per day)						
Phases	ROG	NOx	CO	SO2	PM_{10} Total	PM_{10} Exhaust	PM_{10} Dust
Demolition	9.9	74.3	67.4	0.0	4.82	1.5	3.3
Phase 1 - Infrastructure	59.9	395.8	470.5	0.0	68.03	8.0	60.0
Phase 1 - Facilities	307.3	357.5	418.3	0.1	7.23	7.0	0.2
Phase 2 - Infrastructure	59.9	395.8	470.5	0.0	68.03	8.0	60.0
Phase 2 - Facilities	44.8	306.0	338.6	0.0	6.18	6.1	0.1
Phase 3 - Infrastructure	59.8	395.9	468.6	0.0	68.03	8.0	60.0
Phase 3 - Facilities	307.0	342.9	425.5	0.1	6.83	6.6	0.2
SCAQMD Daily Threshold (pounds/day)	75.0	100.0	550.0	150.0	150.0		
SCAQMD Quarterly Threshold (tons/quarter)	2.5	2.5	24.75	6.75	6.75		
Phase Overlap Maximum (pounds/day)							
Phase 1 & 2 Infra + Facilities & Phase 3 (Infra)	471.9	1,455.0	1,697.9	0.1	149.5	29.1	120.3
Exceed SCAQMD Daily Threshold?	Yes	Yes	Yes	No	No		
Maximum Quarterly Emissions (tons/quarter)							
Phase 1 & 2 Infra + Facilities & Phase 3 (Infra)	15.6	48.0	56.0	0.0	4.9	1.0	4.0
Exceed SCAQMD Quarterly Threshold?	Yes	Yes	Yes	No	No		

Notes:

Mitigated emissions include emission reductions associated with South Coast Air Quality Management District Rule 403 for fugitive dust control plus additional mitigation measures identified. All demolition activities assumed to occur prior to start of Phase 1 infrastructure and facilities construction. Demolition includes emissions of fugitive dust from demolition activities, off-road diesel exhaust from demolition equipment, on-road heavy-duty diesel exhaust from trucks used to haul demolished materials to landfills, and demolition crew commute trips. Phases 1, 2, and 3 infrastructure include emissions associated with site grading, marina dredging, other site preparation activities, including soil import and export, and worker commute trips. Phases 1, 2, and 3 facilities construction includes emissions associated with building construction, including diesel exhaust and worker commute trips. Facilities construction also includes architectural painting offgas emissions and emissions associated with road and parking lot paving.

Emission estimates based on the URBEMIS2001 model and emission rates developed by the SCAQMD and the California Air Resources Board.

On-road emissions associated with commute trips, and heavy-duty diesel truck trips are based on the EMFAC2001 emissions model.

Off-road exhaust emissions associated with heavy-duty construction equipment was based on the California Air Resource Board's Off-Road emissions model.

Fugitive PM_{10} dust emissions based on acreage disturbed using the fugitive dust emission factor recommended by the California Air Resources Board and the SCAQMD.

Mitigation measures include use of aqueous diesel fuel, assumed to result in a PM_{10} emission reduction of 62.9% and a NOx reduction of 14% (Simeroth 2001).

types of diesel fuel. One of those technologies – aqueous diesel fuel - has been included as a mitigation measure for this project. That measure will combine to make significant reductions (60%) of diesel PM_{10} exhaust (along with a 14 % reduction in NOx emissions). Consequently, with implementation of this mitigation measure, the diesel PM_{10} exhaust generated by construction activities would result in a less than significant air quality impact.

CARB has also identified particulate filters as a PM_{10} control measure to reduce particulate matter emissions from diesel combustion sources. However, the LAHD has concluded that diesel particulate filters are not suitable for the type of construction equipment that will be used during project construction.

Mitigation Measures

The following measure should be implemented to reduce exhaust emissions of PM_{10} and $PM_{2.5}$ and NOx.

MM AQ-1: CARB-approved aqueous diesel fuels shall be used in lieu of diesel in all diesel powered construction equipment where it is deemed feasible by the LAHD.

Residual Impacts

Implementation of the mitigation measure listed above would reduce impacts of PM_{10} and NOx, but impacts from emissions of ROG and CO are not able to be reduced. Even with this mitigation measure, NOx emissions, along with ROG and CO are considered significant and unavoidable.

Impact AQ-2: Operational Emissions Would Exceed the SCAQMD Thresholds

The proposed project would result in an increase in emissions of ROG, NO_x, and CO exceeding the SCAQMD's significance thresholds, as shown in Tables 3.3-8 and 3.3-9. Those emission increases would result primarily through increased boat operations, but also because of increases in motor vehicle trips. The increase in emissions of PM_{10} and SO_x would be below the significance thresholds established by the SCAQMD. However, because the proposed project would generate increases in ROG, $NO_{x,,}$ and CO emissions that exceed the SCAQMD thresholds, the project would have significant air quality impacts.

Table 3.3-8. Project-Related Operational Weekday Emissions (lbs/day)

Emission Source	ROG	NO_x	CO	PM_{10}	SO_x
Boat Operation	311	715	748	30	7
Dry Stack Storage Operations	230	356	568	7	3
Motor Vehicles	84	58	655	38	0
Boat Repair/Coatings	119	–	–	–	–
Area Sources	2	19	15	0	0
Fuel Pumps	32	–	–	–	–
Totals (Proposed Project)	778	1,148	1,985	75	10
Less Existing Emissions	697	429	1,806	52	4
Net Increase	81	719	179	23	6
Significance Thresholds	55	55	550	150	150
Exceed Thresholds	Yes	Yes	No	No	No

Notes:
The total number of proposed boat slips is 675. Total dry stack boat storage is 1,000 boats. Boat operations, including dry stack, assume 4 hours per day of engine operation for powerboats and 1 hour per day for sailboats. Estimates also assume a load factor of 40% for powerboats and 10% for sailboats, and that 10% of all boats operating (5% of dry stack). Thirty-five percent of dry stack boats are assumed to be new boats (a market capture assumption). Motor vehicle emissions are estimated using the URBEMIS model and are based on the trip generation rates developed in the "Transportation/Circulation" chapter.

Table 3.3-9. Project-Related Operational Weekend Emissions (lbs/day)

Emission Source	ROG	NO_x	CO	PM_{10}	SO_x
Boat Operation	622	1,430	1,495	60	13
Dry Stack Storage Operations	1,379	2,136	3,406	41	20
Motor Vehicles	123	103	1,163	68	1
Boat Repair/Coatings	119	–	–	–	–
Area Sources	2	19	15	0	0
Fuel Pumps	32	–	–	–	–
Totals	2,278	3,689	6,079	169	34
Less Existing Emissions	1,247	842	3,508	98	8
Net Increase	1,031	2,847	2,571	71	26
Significance Thresholds	55	55	550	150	150
Exceed Thresholds	Yes	Yes	Yes	No	No

Notes:

The total number of proposed boat slips is 675. Total dry stack boat storage is 1,000 boats. Boat operations, including dry stack, assume 4 hours per day of engine operation for powerboats and 1 hour per day for sailboats. Estimates also assume a load factor of 40% for powerboats and 10% for sailboats, and that 20% of all boats operating (30% of dry stack). Thirty-five percent of dry stack boats are assumed to be new boats (market capture assumption). Motor vehicle emissions are estimated using the URBEMIS model and are based on the trip generation rates developed in the "Transportation/Circulation" chapter.

From the Operational Emissions Tables (Tables 3.3-8 and 3.3-9) it is clear that the largest single source of emissions is boats. Several assumptions were used in estimating air emissions. Those assumptions included:

Uncontrolled outboard engines. The above analysis assumes that all 2-stroke and 4-stroke outboard engines are carbureted. Although new technologies, including direct injection 2-stroke engines, 4-stroke engines with catalytic converters and electronic fuel injection and timing, are becoming much more popular, no attempt was made to quantify their use in either the existing or future boat fleet.

Market Capture. While the dry stack storage warehouse will result in additional capacity at the project site to store approximately 1,000 boats over existing conditions, it should be noted that most boats using the new facility would likely already be stored and used elsewhere within the basin. The emission estimates in Tables 3.3-8 and 3.3-9 assume that 35% of the boats are new and that the remaining 65% represent market capture of boats already operating within the SCAB (Williams-Kuebelbeck & Associates 1998).

Daily use assumptions. For weekday emissions, it was assumed that 10% of all boats within the project site would be in operation (5% of those in dry stack

storage), and that powerboats would operate an average of 4 hours per day at 40% load factor and sailboats would operate 1 hour per day at 10% load factor. For weekend emissions, it was assumed that 20% of all boats within the project site would be in operation (30% of those in dry stack storage), and that powerboats would operate an average of 4 hours per day at 40% load factor and sailboats would operate 1 hour per day at 10% load factor. These estimates of boat usage are conservative because information from CARB (1998) suggests that total recreational boat usage averages 56 hours per year.

Mitigation Measures

No mitigation measure is available.

Residual Impacts

Impacts would be significant and unavoidable.

Impact AQ-3: The Project Would Not Result in an Exceedance or Incremental Increase of CO Standards

The proposed project is expected to most affect traffic volumes during the p.m. peak hour. Intersections most impacted by project traffic were therefore selected for evaluation of local CO concentrations. The analysis of CO impacts followed the protocol recommended by the California Department of Transportation and published in Transportation Project-Level Carbon Monoxide Protocol. It is also consistent with procedures identified through the SCAQMD CO modeling protocol, with all four corners of each intersection analyzed to determine whether project development would result in a CO concentration that exceeds federal or state CO standards.

The Swinford Street and Harbor Boulevard intersection was selected for this analysis because it represents the intersection where project-related traffic volumes and traffic congestion (low level of service) would be the highest. The proposed project's contributions to 1-hour and 8-hour CO levels are presented in Table 3.3-10.

Table 3.3-10 CO Modeling Concentrations (PPM)

Receptors	1-Hour	8-Hour
Northwest	7.2	5.2
Northeast	6.7	4.8
Southeast	7.2	5.2
Southwest	6.6	4.8
State Standard	20	9.0
Exceed Standard	No	No

Estimated CO concentrations at the Swinford Street and Harbor Boulevard intersection would be less than the state and federal CO Standards. Consequently, project-related CO concentrations would be less than significant at sensitive receptors location near intersections with highest traffic volumes. No significant impacts are projected to occur at any other intersections in the study area. Consequently, the project traffic will not result in CO emissions that would require transportation improvements to any intersection within the area. This impact is therefore less –than significant.

Mitigation Measures
No mitigation is required.

Residual Impacts
Impacts would be less than significant.

Impact AQ-4: The Project Would Not Create an Objectionable Odor at the Nearest Sensitive Receptor

Construction and operation of the Port are not normally associated with odor issues. Odors are typically associated with industrial or institutional land uses, as listed in SCAQMD's CEQA Handbook. Consequently, the proposed project would not generate significant odor impacts.

Mitigation Measures
No mitigation is required.

Residual Impacts
Impacts would be less than significant.

Impact AQ-5: The Project Would Not Expose Receptors to Significant Levels of Toxic Air Contaminants

The proposed project would not expose receptors to significant levels of toxic air contaminants. Some project construction equipment would emit toxic air contaminants (TACs) that could impact public health. The SCAQMD determined in the MATES-II study that about 70 % of the background cancer risk in the SCAB is due to particulate emissions from diesel powered on- and off-road motor vehicles. However, the results of the MATES II study show that there has been a downward trend in most TACs in the SCAB over the last 12 years. The MATES II study contains a number of caveats and uncertainties, and was not designed to be used for site-specific or project-specific evaluation of diesel emissions. It is expected that TACs emitted from project diesel-powered construction equipment would produce no new significant impacts on public health, as the mobile nature of these sources and the short duration of proposed construction activities would produce minimal impacts of TACs in a localized area. As discussed above, construction-related PM_{10} emissions from diesel exhaust have been determined to be less than significant with the implementation

of Mitigation Measure MM AQ-1. This mitigation measures requires construction equipment to use cleaner burning types of diesel fuel. Consequently, with implementation of this mitigation measure, the diesel PM_{10} exhaust generated by construction activities would result in a less-than-significant air quality impact.

Operational emissions from diesel fuel combustion in boats would also release TACs. However, the net increase of TACs would be relatively small, as shown by the net increase in PM_{10} in Tables 3.3-8 and 3.3-9. Diesel exhaust and other TACs are components of PM_{10} emissions. Table 3.3-8 shows a net increase of 23 pounds per day of PM_{10} during weekdays, while Table 3.3-9 shows a net increase of 71 pounds per days of PM_{10} during weekends.

In addition to the relatively small net increase in TAC, these TAC emissions would be emitted as boat exhaust over a wide area of San Pedro Bay and nearby waterways, including the Pacific Ocean. Due to the relatively small increase in TAC emissions, and because such emissions would be emitted over a wide area, the impact of operational TAC emissions on human health is considered to be less than significant.

Mitigation Measures
No mitigation is required.

Residual Impacts
Impacts would be less than significant.

Cumulative Impacts

Build-out of related projects within a similar time frame as the proposed project would increase short-term emissions for concurrent activities during any day of the project construction period. Since the worst-case construction quarter for the project was identified to be significant, any additional construction activities occurring during this time and in the vicinity of the project site would be adding an additional air pollutant emission burden to these significant levels. Quantification of construction emissions from cumulative projects is based on several assumptions regarding the timing and phasing of construction activities for each of these projects and the extent to which such activity would coincide with the worst day and quarter of the proposed construction process. However, because the emission levels associated with the proposed project already are projected to have a significant impact, cumulative impacts with respect to construction emissions would be cumulatively considerable.

Operational emissions associated with build-out of the proposed project would occur along with emissions from other development projects in the vicinity. All projects projected to be built and operational within the time frame would likely exceed SCAQMD thresholds for CO, ROC, NO_x, and PM_{10}. Air quality impacts would therefore be cumulatively considerable.

3.3.3.5 Mitigation Monitoring Plan Summary

Impact	Mitigation Measure	Timing and Method	Responsible Parties	Residual Impacts
AQ-1: The Project Would Result in Construction-Related Emissions that Exceed SCAQMD Thresholds	MM AQ-1: For construction activities, CARB-approved aqueous diesel fuel shall be used in lieu of diesel, where feasible.	Timing: Throughout construction phases. Methods: This measure shall be incorporated into contract specifications for all construction work to reduce the impact of construction diesel emissions. The contractor shall adhere to these specifications throughout construction phases. Enforcement shall include oversight by the LAHD project manager or designated building inspectors to ensure compliance with contract specifications.	LAHD Staff, Contractor	PM_{10} emissions would be reduced to less than significant levels. ROG, NOx, and CO emissions would be significant and unavoidable.