3.2

AIR QUALITY AND METEOROLOGY

3.2.1 Introduction

Emissions from construction and operation of the proposed Project and its alternatives would affect air quality in the immediate Project area and the surrounding region. This section includes a description of the affected air quality environment, predicted impacts of the proposed Project and alternatives, and mitigation measures that would reduce significant impacts.

3.2.1.1 Relationship to 1992 Deep Draft Final EIS/EIR

The 1992 Deep Draft Final Environmental Impact Statement/Environmental Impact Report (FEIS/FEIR) identified significant, unavoidable impacts that would occur in association with both development and operation of Pier 400 (USACE and LAHD 1992). Construction sources were shown to generate emissions that would exceed State and Federal nitrogen dioxide (NO_2) standards, the 8-hour carbon monoxide (CO) standards, and the 10 micron particulate matter (PM_{10}) standards. Construction emissions were also expected to exceed the State 24-hour sulfur dioxide (SO_2) standard. Emissions from operation of new terminals would, in combination with high background levels, contribute to long-term exceedences of air quality standards for all of the criteria pollutants. However, it was noted in the Deep Draft FEIS/FEIR that the No Action Plan would have also resulted in significant, unavoidable long-term exceedences (refer to section 4G.2.2 of the the Deep Draft FEIS/FEIR). The air quality analysis in the Deep Draft FEIS/FEIR demonstrated that the long-term air quality impacts of the Proposed Action would be less than the impacts of the No Action Plan and could therefore reduce the overall long-term air quality impacts in the region.

Mitigation measures (MMs) were developed and adopted in the Deep Draft FEIS/FEIR to reduce air quality impacts. Some of these mitigation measures remain applicable, while others have already been implemented. Applicable MMs from the Deep Draft FEIS/FEIR are listed and discussed below and have been included in the project MMRP.

Mitigation Measures from the 1992 Deep Draft Final EIS/EIR that are Applicable to the Proposed Project

The following MMs developed in the Deep Draft FEIS/FEIR to reduce the significant impacts on air quality during construction remain applicable to the current proposed Project:

MM 4G-3: Properly tune and maintain all construction equipment.

MM 4G-4: Encourage construction workers to carpool.

MM 4G-5: Discontinue construction activities during a Stage II Smog Alert.

MM 4G-11: Water sites morning and evening to reduce fugitive dust emissions.

MM 4G-12: Operate street sweepers on paved roads adjacent to the site to reduce fugitive dust emissions.

MM 4G-13: Spread soil binders on site, unpaved roads, and parking areas.

The following MMs were developed to reduce the long-term significant impacts on air quality during terminal operation:

MM 4G-7: Establish education program on "clean ships" and clean fuel on-dock operating equipment for tenants.

MM 4G-8: Require new facilities to use clean fuel on-dock operating equipment if available.

MM 4G-14: Configure parking (during both construction and operation) to minimize traffic interference.

Mitigation Measures from the 1992 Deep Draft Final EIS/EIR that are No Longer Applicable or are Not Applicable to the Proposed Project

The following MMs were developed in the Deep Draft FEIS/FEIR to reduce the significant impacts on air quality, but are either no longer applicable or are not applicable to the proposed Project:

MM 4G-1: Use electric dredges inside the breakwater.

Reason not applicable: *The proposed Project does not involve dredging activities; therefore MM 4G-1 does not apply.*

MM 4G-2: Use clean fuel dredges and/or catalytic converters outside of the breakwater.

Reason not applicable: *The proposed Project does not include dredging activities; therefore MM 4G-2 does not apply.*

MM 4G-6: Ports were to pursue the implementation of the Alameda Corridor.

Reason no longer applicable: *The Alameda Corridor project has been completed.*

MM 4G-9: Establish a Port Transportation Management Association for the Harbor Area or contribute to an existing Los Angeles or Long Beach city-wide program.

Reason not applicable: *This measure is not applicable to the proposed Project. This is a general measure that applied to general Port of Los Angeles (Port) operations. By definition, a transportation management association (TMA) is an organization of private corporations, employers, developers and property managers dedicated to addressing transportation issues, mitigating traffic and improving mobility within the port area. The organization would work in conjunction with the Port's transportation master plan to address present and future traffic improvement needs based on existing and projected traffic volumes. Because of the scope and purpose of the organization, a TMA is a management tool for the overall operation of the Port. As such, it is not appropriately applied as a mitigation measure for an individual project.*

MM 4G-10: Encourage tenants to schedule goods movement for off-peak traffic hours when feasible.

Reason not applicable: *This measure is not applicable to the proposed Project. This measure applies to container terminal operations where cargo movement is achieved using trucks and other mobile sources. The proposed Project does not involve containerized goods movement.*

3.2.2 Environmental Setting

The Project site is located in the Harbor District of the City of Los Angeles, within the South Coast Air Basin (SCAB). The SCAB consists of the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties and all of Orange County. The air basin covers an area of approximately 6,000 square miles and is bounded on the west by the Pacific Ocean; on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains; and on the south by the San Diego County line.

3.2.2.1 Regional Climate and Meteorology

The climate of the Project region is classified as Mediterranean, characterized by warm, rainless summers and mild, wet winters. The major influence on the regional climate is the Eastern Pacific High (a strong persistent area of high atmospheric pressure over the Pacific Ocean), topography, and the moderating effects of the Pacific Ocean. Seasonal variations in the position and strength of the High are a key factor in the weather changes in the area.

The Eastern Pacific High attains its greatest strength and most northerly position during the summer, when the High is centered west of northern California. In this location, the High effectively shelters southern California from the effects of polar storm systems. Large-scale atmospheric subsidence associated with the High produces an elevated temperature inversion along the West Coast. The base of this subsidence inversion is generally from 1,000 to 2,500 feet (300 to 800 meters) above mean sea level (msl) during the summer. Vertical mixing is often limited to the base of the inversion, and air pollutants are trapped in the lower atmosphere. The mountain ranges that surround the Los Angeles Basin constrain the horizontal movement of air and also inhibit the dispersion of air pollutants out of the region. These two factors, combined with the air pollution sources of over 15 million people, are responsible for the high pollutant concentrations that can occur in the SCAB.

Marine air trapped below the base of the subsidence inversion is often condensed into fog and stratus clouds by the cool Pacific Ocean. This is a typical weather condition in the San Pedro Bay region during the warmer months of the year. Stratus clouds usually form offshore and move into the coastal plains and valleys during the evening hours. When the land heats-up the following morning, the clouds burn-off to the immediate coastline, but often reform again the following evening.

As winter approaches, the Eastern Pacific High begins to weaken and shift to the south, allowing storm systems to pass through the region. The number of days with precipitation varies substantially from year to year, which produces a wide range of variability in annual precipitation totals. The annual precipitation for the Long Beach Airport, approximately 9 miles (14.5 km) northeast of the Project site, has ranged from 2.6 to 27.7 inches (6.6 to 70.4 cm) from 1958 through 2004, with an average of 11.9 inches (30.2 cm) (Western Region Climate Center 2004). About 94 percent of the annual rainfall occurs during the months of November through April, with a monthly average maximum of 2.9 inches (7.4 cm) in February. This wet-dry seasonal pattern is characteristic of most of California. Infrequent precipitation during the summer months usually occurs from tropical air masses that originate from continental Mexico or tropical storms off the West Coast of Mexico.

The average high and low temperatures at the Long Beach Airport in August are 83°F (28°C) and 64°F (18°C), respectively. January average high and low temperatures are 67°F (19°C) and 46°F (8°C). Extreme high and low temperatures recorded from 1958 through 2004 were 111°F (44°C) and 25°F (-4°C), respectively (Western Region Climate Center 2004). Temperatures in the San Pedro Bay area are generally less extreme than inland regions, due to the moderating effect of the ocean.

The proximity of the Eastern Pacific High and a thermal low pressure system in the desert interior to the east produce a sea breeze regime that prevails within the Project region for most of the year, particularly during the spring and summer months. Sea breezes at the Port typically increase during the morning hours from the southerly direction and reach a peak in the afternoon as they blow from the southwest. These winds generally subside after sundown. During the warmest months of the year, however, sea breezes could persist well into the nighttime hours. Conversely, during the colder months of the year, northerly land breezes increase by sunset and into the evening hours. Sea breezes transport air pollutants away from the coast and towards the interior regions in the afternoon hours for most of the year.

During the fall and winter months, the Eastern Pacific High can combine with high pressure over the continent to produce light winds and extended inversion conditions in the region. These stagnant atmospheric conditions often result in elevated pollutant concentrations in the SCAB. Excessive buildup of high pressure in the Great Basin region can produce a "Santa Ana" condition, characterized by warm, dry, northeast winds in the basin and offshore regions. Santa Ana winds often ventilate the SCAB of air pollutants.

The Palos Verdes Hills have a major influence on wind flow in the Port. For example, during afternoon southwest sea breeze conditions, the Palos Verdes Hills often block this flow and create a zone of lighter winds in the inner Harbor area of the Port. During strong sea breezes, this flow can bend around the north side of the Hills and end up as a northwest breeze in the inner Harbor area. This topographic feature also deflects northeasterly land breezes that flow from the coastal plains to a more northerly direction through the Port.

3.2.2.2 Air Pollutants and Air Monitoring

Criteria Pollutants

Air quality at a given location can be characterized by the concentration of various pollutants in the air. Units of concentration are generally expressed as ppmv or micrograms per cubic meter ($\mu g/m^3$) of air. The significance of a pollutant concentration is determined by comparing the concentration to an appropriate national or state ambient air quality standard. These standards represent the allowable atmospheric concentrations at which the public health and welfare are protected. They include a reasonable margin of safety to protect the more sensitive individuals in the population.

The USEPA establishes the National Ambient Air Quality Standards (NAAQS). For most pollutants, maximum concentrations shall not exceed an NAAQS more than once per year; and they shall not exceed the annual standards. The California Air Resources Board (CARB) establishes the California Ambient Air Quality Standards (CAAQS), which are generally more stringent and include more pollutants than the NAAQS. Maximum pollutant concentrations shall not equal or exceed the CAAQS.

Pollutants that have corresponding national or state ambient air quality standards are known as criteria pollutants. The criteria pollutants of primary concern in this air quality assessment are ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), sulfates, particulate matter (PM), and Lead (Pb). PM is regulated as both PM_{10} and $PM_{2.5}$. PM_{10} consists of particles with an aerodynamic diameter of 10 microns or less, while $PM_{2.5}$ consists of particles that are less than or equal to 2.5 microns in size. $PM_{2.5}$ is a subset of PM_{10}, and both are subsets of PM. The known adverse effects associated with these criteria pollutants are shown in Table 3.2-1.

Of the criteria pollutants of concern, ozone is unique because it is not directly emitted from project-related sources. Rather, ozone is a secondary pollutant, formed from the precursor pollutants volatile organic compounds (VOC) and nitrogen oxides (NO_x). VOC and NO_x react to form ozone in the presence of sunlight through a complex series of photochemical reactions. As a result, unlike inert pollutants, ozone levels usually peak several hours after the precursors are emitted and many miles downwind of the source. Because of the complexity and uncertainty in predicting photochemical pollutant concentrations, ozone impacts are indirectly addressed by comparing project-generated emissions of VOC and NO_x to daily emission thresholds set by the South Coast Air Quality Management District (SCAQMD).

Table 3.2-1. Adverse Effects Associated with the Criteria Pollutants

Pollutant	*Adverse Effects*
Ozone	a. Short-term exposures: 1. Pulmonary function decrements and localized lung edema in humans and animals; 2. Risk to public health implied by alterations in pulmonary morphology and host defense in animals; b. Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; c. Vegetation damage; d. Property damage
Carbon Monoxide	a. Aggravation of angina pectoris and other aspects of coronary heart disease; b. Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; c. Impairment of central nervous system functions; d. Possible increased risk to fetuses
Nitrogen Dioxide	a. Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; b. Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; c. Contribution to atmospheric discoloration
Sulfur Dioxide	a. Bronchoconstriction accompanied by symptoms that may include wheezing, shortness of breath, and chest tightness during exercise or physical activity in persons with asthma
Suspended Particulate Matter (PM_{10})	a. Excess deaths from short-term and long-term exposures; b. excess seasonal declines in pulmonary function, especially in children; c. asthma exacerbation and possibly induction; d. adverse birth outcomes including low birth weight; e. increased infant mortality; f. increased respiratory symptoms in children such as cough and bronchitis; and g. increased hospitalization for both cardiovascular and respiratory disease (including asthma) [a]
Suspended Particulate Matter ($PM_{2.5}$)	a. Excess deaths from short-term and long-term exposures; b. excess seasonal declines in pulmonary function, especially in children; c. asthma exacerbation and possibly induction; d. adverse birth outcomes including low birth weight; e. increased infant mortality; f. increased respiratory symptoms in children such as cough and bronchitis; and g. increased hospitalization for both cardiovascular and respiratory disease (including asthma) [a]
Lead [b]	a. Increased body burden; b. Impairment of blood formation and nerve conduction
Sulfates [c]	a. Decrease in ventilatory function; b. Aggravation of asthmatic symptoms; c. Aggravation of cardiopulmonary disease; d. Vegetation damage; e. Degradation of visibility; f. Property damage

Notes:

a. More detailed discussions on the health effects associated with exposure to suspended particulate matter can be found in the following documents: OEHHA, Particulate Matter Health Effects and Standard Recommendations (www.oehha.ca.gov/air/toxic_contaminants/PM10notice.html#may), May 9, 2002 (OEHHA 2002); and U.S. EPA, Air Quality Criteria for Particulate Matter, October 2004 (USEPA 2004).

b. Lead emissions were evaluated in the health risk assessment of this study. Screening calculations have shown that lead emissions would be well below the SCAQMD emission thresholds for all project alternatives.

c. Sulfate emissions were evaluated in the health risk assessment of this study. The SCAQMD has not established an emissions threshold for sulfates, nor does it require dispersion modeling against the localized significance thresholds (LSTs) (personal communication, S. Smith, 2006).

d. CAAQS have also been established for hydrogen sulfide, vinyl chloride, and visibility reducing particles. They are not shown in this table because they are not pollutants of concern for the proposed project.

Sources: SCAQMD 2006c; USEPA 2004; OEHHA 2002.

Because most of the project-related emission sources would be diesel-powered, diesel particulate matter (DPM) is a key pollutant evaluated in this study. DPM is one of the components of ambient PM_{10} and $PM_{2.5}$. DPM is also classified as a toxic air contaminant (TAC) by CARB. As a result, DPM is evaluated in this study both as a criteria pollutant (as a component of PM_{10} and $PM_{2.5}$) and as a TAC.

Local Air Monitoring Levels

USEPA designates all areas of the United States according to whether they meet the NAAQS. A nonattainment designation means that a primary NAAQS has been exceeded more than once per year in a given area. USEPA currently designates the SCAB as an "extreme" nonattainment area for 1-hour ozone, a "severe-17"[1] nonattainment area for 8-hour ozone, a "serious" nonattainment area for both CO[2] and PM_{10}, and a nonattainment area for $PM_{2.5}$. The SCAB is in attainment of the NAAQS for SO_2, NO_2, and lead (USEPA 2006). States with nonattainment areas must prepare a State Implementation Plan (SIP) that demonstrates how those areas will come into attainment.

The CARB also designates areas of the state according to whether they meet the CAAQS. A nonattainment designation means that a CAAQS has been exceeded more than once in 3 years. The CARB currently designates the SCAB as an "extreme" nonattainment area for ozone, and a nonattainment area for both PM_{10}, and $PM_{2.5}$. The air basin is in attainment of the CAAQS for CO, SO_2, NO_2, sulfates, and lead, and is unclassified for hydrogen sulfide and visibility reducing particles.

The Port has been conducting its own air quality monitoring program since February 2005. The main objective of the program is to estimate ambient levels of DPM near the Port. The secondary objective of the program is to estimate ambient particulate matter levels within adjacent communities due to Port emissions. To achieve these objectives, the program measures ambient concentrations of PM_{10}, $PM_{2.5}$, and elemental carbon $PM_{2.5}$ (which indicates fossil fuel combustion sources) at four locations in the Port vicinity (LAHD 2006a). The station locations are:

- *Wilmington Station* – Located at the Saints Peter and Paul School. This station measures aged urban emissions during offshore flows and a combination of marine aerosols, aged urban emissions, and fresh emissions from Port operations during onshore flows. This station also provides information on the relative strengths of these source combinations.
- *Coastal Boundary Station* – Located at Berth 47 in the Port Outer Harbor. This station measures aged urban and Port emissions and marine aerosols during onshore flows and aged urban emissions and fresh Port emissions during offshore flows. Meteorological data from this site was used in this air quality

[1] Severe-17 = design value of 0.190 up to 0.280 ppm and has 17 years to reach attainment.

[2] The SCAB has been achieving the Federal 1-hour CO air quality standard since 1990, and the Federal 8-hour CO standard since 2002. However, the SCAB is still considered a nonattainment area until a petition for redesignation is submitted by the State and is approved by USEPA. A redesignation to attainment has already been made for the State CO standards.

modeling to analyze human health risks and criteria pollutant impacts associated with the proposed Project.

- *Source-Dominated Station* – Located at the Terminal Island Treatment Plant. This site is surrounded by three terminals and has a potential to receive emissions from off-road equipment, on-road trucks, and rail. During onshore flows, this station measures marine aerosols and fresh emissions from several nearby diesel-fired sources (trucks, trains, and ships). During offshore flows, this station measures aged urban emissions and Port emissions.
- *San Pedro Station* – Located at the Liberty Hill Plaza Building, adjacent to the Port administrative property on Palos Verdes Street. This location was near the western edge of Port operational emission sources and adjacent to residential areas in San Pedro. During onshore flows, aged urban emissions, marine aerosols, and fresh Port emissions have the potential to affect this site. During nighttime offshore flows, this site measures aged urban emissions and Port emissions.

As discussed below, the Port has collected PM_{10} data at its Wilmington station and $PM_{2.5}$ data at all four Port stations for more than 1 year. In order to show trends in pollutant concentrations over periods longer than 1 year and for criteria pollutants other than PM_{10} and $PM_{2.5}$, this analysis utilized data from the network of monitoring stations operated by the SCAQMD.

Of the SCAQMD monitoring stations, the most representative station for the Project vicinity is the North Long Beach station which is located adjacent to the San Pedro Bay Ports. Table 3.2-2 shows the highest pollutant concentrations recorded at the North Long Beach station for 2002 to 2006, the most recent complete 5-year period of data available. As shown in the table, the following standards were exceeded at the North Long Beach station over the 5-year period: ozone (state 1-hour standards), PM_{10} (state 24-hour and annual standards), and $PM_{2.5}$ (national 24-hour standard, and national and state annual standards). No standards were exceeded for CO, NO_2, SO_2, lead, and sulfates; although some data are not available for SO_2, lead, and sulfates in 2003, 2004 and 2006. In addition, the highest monitored concentration for CO (1-hour), SO_2 (1-hour), and $PM_{2.5}$ (annual) in 2006 are not available.

Pollutant sampling data for February 2005 through January 2006 from the Port monitoring program are available. Samples are collected as 24-hour averages every 3 days. The data are summarized in Table 3.2-3. Data collected concurrently at the SCAQMD North Long Beach monitoring station are also presented for comparison. The table shows that for PM_{10}, concentrations at the Wilmington station are comparable to the North Long Beach station. For $PM_{2.5}$, concentrations at the Wilmington and Source-Dominated stations are greater than the Coastal Boundary and San Pedro stations, less than the North Long Beach station for maximum 24-hour averages, and comparable to the North Long Beach station for period averages. For elemental carbon $PM_{2.5}$, the Source-Dominated station has the highest concentrations, and the Coastal Boundary station has the lowest concentrations. Elemental carbon $PM_{2.5}$ was not measured at the North Long Beach station. The Coastal Boundary site, adjacent to the Berth 408 project site, recorded the lowest PM levels of the four Port monitoring sites.

Table 3.2-2. Maximum Pollutant Concentrations Measured at the North Long Beach Monitoring Station

Pollutant	*Averaging Period*	*National Standard*	*State Standard*	*Highest Monitored Concentration*				
				2002	2003	2004	2005	2006
Ozone (ppm)	1 hour	0.12	0.09	0.084	**0.099** [a]	0.090	**0.091**	0.081
	8 hours	0.08	0.070	0.064	0.068	**0.074**	0.068	0.058
CO (ppm)	1 hour	35	20	5.8	5.5	4.2	5.0	not avail.
	8 hours	9	9	4.6	4.7	3.4	3.7	3.4
NO_2 (ppm)	1 hour	n/a	0.18	0.13	0.14	0.12	0.12	0.102
	Annual	0.053	0.030	0.029	0.029	0.028	0.024	0.020
SO_2 (ppm)	1 hour	n/a	0.25	0.03	not avail.	not avail.	0.04	not avail.
	24 hours	0.14	0.04	0.008	0.008	0.013	0.010	0.010
	Annual	0.03	n/a	0.002	0.002	0.005	0.002	0.001
PM_{10} ($\mu g/m^3$)	24 hours	150	50	**74** [b]	**63** [b]	**72** [b]	**66** [b]	**51** [b]
	Annual	n/a	20	**35.9**	**32.8**	**33.1**	**29.7**	**30.6**
$PM_{2.5}$ ($\mu g/m^3$)	24 hours	35	n/a	**62.7** [c]	**115.2** [c]	**66.6** [c]	**53.8** [c]	**58.5** [c]
	Annual	15	12	**19.5**	**18.0**	**17.8**	**16.0**	not avail.
Lead ($\mu g/m^3$)	30 days	n/a	1.5	0.03	not avail.	not avail.	not avail.	not avail.
	Calendar quarter	1.5	n/a	0.02	not avail.	not avail.	not avail.	not avail.
Sulfates ($\mu g/m^3$)	24 hours	n/a	25	17.8	not avail.	not avail.	not avail.	not avail.

Notes:

µg/m3 = micrograms per cubic meter

ppm = parts per million

Exceedences of the standards are highlighted in bold. Although the NAAQS were not exceeded at the North Long Beach Monitoring Station for carbon monoxide and PM_{10} from 2002 to 2006, the SCAB is classified by USEPA as nonattainment for these pollutants because violations have occurred at other monitoring stations in the Basin.

a. The state 1-hour ozone standard was exceeded on 0 days in 2002, 1 day in 2003, 0 days in 2004, 0 days in 2005, and 0 days in 2006. The national 1-hour ozone standard was not exceeded.
b. The state 24-hour PM_{10} standard was exceeded on 5 days in 2002, 4 days in 2003, and 4 days in 2004. The number of 24-hour PM_{10} exceedences in 2005 and 2006 is not available. The national 24-hour PM_{10} standard was not exceeded.
c. The national 24-hour $PM_{2.5}$ standard was exceeded on 3 days in 2003. The number of days above the national 24-hour $PM_{2.5}$ standard is not available in 2002, 2004, 2005 and 2006.

Sources: SCAQMD (www.aqmd.gov); CARB (http://www.arb.ca.gov/adam/welcome.html); USEPA (http://www.epa.gov/aqspubl1/)

Table 3.2-3. Maximum Pollutant Concentrations Measured for the Port Air Quality Monitoring Program

Pollutant	*Averaging Period*	*Port Monitoring Sites*				*SCAQMD Monitoring Site*
		Wilmington Community Site	*Coastal Boundary Site*	*San Pedro Community Site*	*Source-Dominated Site*	*North Long Beach*
PM_{10} ($\mu g/m^3$)	24 hours	**63.3**	--	--	--	**66.0**
	Period Average	27.6	--	--	--	30.0
$PM_{2.5}$ ($\mu g/m^3$)	24 hours	32.7	25.3	25.7	31.4	**48.0**
	Period Average	13.0	10.4	10.9	14.5	14.9
Elemental Carbon $PM_{2.5}$ ($\mu g/m^3$)	24 hours	5.2	4.6	6.7	9.3	--
	Period Average	1.5	1.1	1.5	2.5	--

Notes:

Exceedences of the standards are highlighted in bold.

1. For PM_{10}, the SCAQMD North Long Beach monitoring site measures a 24-hour sample every 6 days, compared to every 3 days for the Port monitoring sites. Therefore, only one-half of the Port monitoring site samples (every other sample) has a corresponding sample from the North Long Beach site. For $PM_{2.5}$, all monitoring sites measure a 24-hour sample every 3 days.
2. The data were collected from February 2005 through January 2006, with the following exceptions: the Source-Dominated site collected data from May 2005 through January 2006, and data from the SCAQMD North Long Beach monitoring sites were available from February 2005 through December 2005.
3. PM_{10} is not measured at the Coastal Boundary site, San Pedro Community site, or Source-Dominated site.
4. Elemental Carbon $PM_{2.5}$ is not measured at the SCAQMD North Long Beach site.

Source: LAHD 2006a.

Air quality within the SCAB has generally improved since the inception of air pollutant monitoring in 1976. This improvement is mainly due to lower-polluting on-road motor vehicles, more stringent regulation of industrial sources, and the implementation of emission reduction strategies by the SCAQMD. This trend towards cleaner air has occurred in spite of continued population growth.

Toxic Air Contaminants

TACs are identified by the CARB based on exposure assessments conducted by the Board and health effects assessments conducted by the Office of Environmental Health Hazard Assessment (OEHHA). Some TACs are cancer-causing chemicals. Others have noncancer health effects from short-term isolated exposure or longer term continuous exposure for a significant fraction of a lifetime. Some chemicals are both cancer-causing agents and have noncancer health effects as well. OEHHA develops noncancer and cancer health values from information available from published animal and human studies. TACs are emitted from many industrial processes, stationary sources such as dry cleaners, gasoline stations, paint and solvent operations, and notably fossil fuel combustion sources. Examples of TAC sources within the SCAB include industrial processes, dry cleaners, gasoline stations, paint and solvent operations, and fossil fuel combustion sources.

The SCAQMD determined in the *Multiple Air Toxics Exposure Study II* (MATES II) that about 70 percent of the background airborne cancer risk in the SCAB is due to particulate emissions from diesel-powered on- and off-road motor vehicles (SCAQMD 2000). The higher risk levels were found in the urban core areas in south central Los Angeles County, in Wilmington adjacent to the Port, and near freeways.

In January 2008, the SCAQMD released the draft MATES III study (SCAQMD 2008). MATES III determined that diesel exhaust remains the major contributor to air toxics risk, accounting for approximately 84 percent of the total risk. Compared to the MATES II study, the MATES III study found a decreasing risk for air toxics exposure, with the population-weighted risk down by 17 percent from the analysis in MATES II.

Furthermore, a recently released CARB report titled *Diesel Particulate Matter Exposure Assessment Study for the Ports of Los Angeles and Long Beach* indicates that the Ports contributed approximately 21 percent of the total diesel PM emissions in the air basin during 2002 (CARB 2006b). These emissions are reported to result in elevated cancer risk levels over the entire 20-mile by 20-mile study area.

As discussed in Section 1.6.2, the Port, in conjunction with the Port of Long Beach, has developed the San Pedro Bay Ports Clean Air Action Plan (CAAP) that targets all emissions, but is focused primarily on TACs. Additionally, all major development projects will include a Health Risk Assessment (HRA) to further assess TAC emissions and to target mitigation to reduce the impact on public health.

Secondary $PM_{2.5}$ Formation

Within the SCAB, $PM_{2.5}$ particles are both directly emitted into the atmosphere (e.g., primary particles) and are formed through atmospheric chemical reactions from precursor gases (e.g., secondary particles). Primary $PM_{2.5}$ includes diesel soot, combustion products, road dust, and other fine particles. Secondary $PM_{2.5}$ – which includes products such as sulfates, nitrates, and complex carbon compounds – are formed from reactions with directly emitted NO_x, sulfur oxides (SO_x), VOCs, and ammonia (SCAQMD 2007b).

Project-generated emissions of NO_x, SO_x, and VOCs would contribute toward secondary $PM_{2.5}$ formation some distance downwind of the emission sources. However, there is currently no simple procedure to predict how much particle formation there would be, and how far downwind the formation would occur. The reactions that form secondary $PM_{2.5}$ depend on the presence of other chemicals which are in turn part of a complex chemical process occurring in the atmosphere. Given the current lack of a reliable scientific method of calculating secondary $PM_{2.5}$ conversion, this report presents the best estimate of direct $PM_{2.5}$ emissions only. This approach is consistent with the SCAQMD's recommendation for calculating $PM_{2.5}$, which focuses only on directly emitted $PM_{2.5}$ (SCAQMD 2006a).

Ultrafine Particles

The USEPA and State of California currently monitor and regulate PM_{10} and $PM_{2.5}$. PM_{10} is defined as particulate matter 10 μm or less in diameter. Similarly, $PM_{2.5}$ is defined as particulate matter 2.5 μm or less in diameter. Ultrafine particles (UFP) are generally defined as particles less than or equal to 0.1 μm in diameter. The epidemiological studies determining the health impacts of PM_{10} and $PM_{2.5}$ estimated exposure using PM_{10} and $PM_{2.5}$ ambient monitoring. These PM fractions include the ultrafine fraction as well as larger particles. Thus, ultrafine particle fraction is included in both monitoring and regulation by USEPA and the State of California. As the science progresses new approaches may be needed, and it may be possible to eventually set separate ultrafine standards.

UFPs are mainly formed by fossil-fuel combustion. With diesel fuel, UFPs can be formed directly from the fuel during combustion. With gasoline and natural gases (LNG/CNG), the UFPs are coming largely from the lubricant oil. UFPs are emitted directly from the tailpipe as solid particles (soot--elemental carbon and metal oxides) and semi-volatile particles (sulfates and hydrocarbons) that coagulate to form particles.

The research regarding UFPs is at its infancy, but suggests that these ultrafine particles may be more dangerous to human health than the larger PM_{10} and $PM_{2.5}$ particles (termed fine particles) due to their size and shape. Due to their smaller size, UFPs are able to travel more deeply into the lung (the alveoli) and are deposited in the deep lung regions more efficiently than fine particles. The UFPs are inert and therefore normal bodily defense does not recognize the particle; UFPs may have the ability to travel across cell layers and enter into the bloodstream and/or into individual cells. With a large surface area, other entities may attach to the particle and travel into the cell as a kind of "hitch-hiker".

Current UFP research primarily involves roadway exposure. Preliminary studies suggest that over 50 percent of a person's daily exposure is from driving on highways. Levels appear to drop off rapidly as one moves away from major roadways.

Sampling of airborne UFPs is a challenging task for two reasons. First, because of their small mass, separation of fine particles from UFPs by inertial impaction can only be achieved at a relatively high pressure drop; and second, the extremely low concentration of UFPs in ambient air makes collection of filter samples for gravimetric analysis and chemical characterization only feasible with novel high volume sampling techniques (Sarnat et al. 2003).

Because the methods for sampling UFPs are relatively new and still evolving, little research has been done regarding UFP exposure associated with ships and off-road vehicles. A number of studies are referenced in Appendix H. CARB began a study in the summer of 2007 at the San Pedro Bay Ports to measure airborne pollutants including UFPs. To reduce emissions, work is being done on filter technology, which appears promising, including filters for ships. The Port is actively participating in the CARB testing at the Port and will comply with all future regulations regarding UFPs. In addition, measures included in the CAAP aims to reduce all air pollutant emissions from the Port, including UFP.

Atmospheric Deposition

The fallout of air pollutants to the surface of the earth is known as atmospheric deposition. Atmospheric deposition occurs in both a wet and dry form. Wet deposition occurs in the form of precipitation or cloud water and is associated with the conversion in the atmosphere of directly emitted pollutants into secondary pollutants such as acids. Dry deposition occurs in the form of directly emitted pollutants or the conversion of gaseous pollutants into secondary PM. Atmospheric deposition can produce watershed acidification, aquatic toxic pollutant loading, deforestation, damage to building materials, and respiratory problems.

The CARB and California Water Resources Control Board are in the process of examining the need to regulate atmospheric deposition for the purpose of protecting both fresh and salt water bodies from pollution. Port emissions deposit into both local waterways and regional land areas. Emission sources from the proposed Project and alternatives would produce DPM, which contains trace amounts of toxic chemicals. Through its CAAP, the Port will reduce air pollutants from its future operations, which will work towards the goal of reducing atmospheric deposition for purposes of water quality protection. The CAAP will reduce air pollutants that generate both acidic and toxic compounds, include emissions of NO_x, SO_x, and DPM.

3.2.2.3 Greenhouse Gases

Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs). GHGs are emitted by natural processes and human activities. Examples of GHGs that are produced both by natural processes and industry include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Examples of GHGs created and emitted primarily through human activities include fluorinated gases (hydrofluorocarbons and perfluorocarbons) and sulfur hexafluoride.

Potential adverse effects associated with Climate Change are presented in Table 3.2-4.

Table 3.2-4. Potential Climate Change Impacts on Temperature, Sea Level and Precipitation

Impact	*Description of Impacts*
Health	Weather-related mortality Infectious diseases Air quality Respiratory illness
Agriculture	Crop yields Irrigation demands
Forest	Forest composition Geographic range of forest Forest health and productivity
Water Resources	Water supply Water quality Competition for water
Coastal Areas	Erosion of beaches Inundation of coastal lands Additional cost to protect coastal communities
Species and Natural Resources	Loss of habitat and species Cryosphere: diminishing glaciers

Source: USEPA 2007.

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without these natural GHGs, the Earth's surface would be about 61°F cooler (AEP 2007). However, emissions from fossil fuel combustion for activities such as electricity production and vehicular transportation have elevated the concentration of GHGs in the atmosphere above natural levels. According to the Intergovernmental Panel on Climate Change (IPCC) (IPCC 2007), the atmospheric concentration of CO_2 in 2005 was 379 ppm compared to the pre-industrial levels of 280 ppm. In addition, The Fourth U.S. Climate Action Report concluded, in assessing current trends, that carbon dioxide emissions increased by 20 percent from 1990-2004, while methane and nitrous oxide emissions decreased by 10 percent and 2 percent, respectively. There appears to be a close relationship between the increased concentration of GHGs in the atmosphere and global temperatures. For example, the California Climate Change Center reports that by the end of this century, temperatures are expected to rise by 4.7 to 10.5°F due to increased GHG emissions. Scientific evidence indicates a trend of increasing global temperatures near the earth's surface over the past century due to increased human induced levels of GHGs.

GHGs differ from criteria pollutants in that GHG emissions do not cause direct adverse human health effects. Rather, the direct environmental effect of GHG emissions is the increase in global temperatures, which in turn has numerous indirect effects on the environment and humans. For example, some observed changes include shrinking glaciers, thawing permafrost, later freezing and earlier break-up of ice on rivers and lakes, a lengthened growing season, shifts in plant and animal ranges, and earlier flowering of trees (IPCC 2001). Other, longer term environmental impacts of global warming may include sea level rise, changing weather patterns with increases in the severity of storms and droughts, changes to local and regional ecosystems including the potential loss of species, and a significant reduction in winter snow pack (for example, estimates include a 30-90% reduction in snowpack in the Sierra Mountains). Current data suggest that in the next 25 years, in every season of the year, California will experience unprecedented heat, longer and more extreme heat waves, greater intensity and frequency of heat waves, and longer dry periods. More specifically, the California Climate Change Center (2006) predicted that California could witness the following events:

- Temperature rises between 3-10.5°F;
- 6-20 inches or more of sea level rise;
- 2-4 times as many heat wave days in major urban centers;
- 2-6 times as many heat related deaths in major urban centers;
- 1-1.5 times more critically dry years; and
- 10-55% increase in the expected risk of wildfires.

Currently, there are no federal standards for GHG emissions. Recently, the U.S. Supreme Court ruled that the harms associated with climate change are serious and well recognized, that the USEPA must regulate GHGs as pollutants, and unless the agency determines that GHGs do not contribute to climate change, it must promulgate regulations for GHG emissions from new motor vehicles (Massachusetts et al. Environmental Protection Agency [case No. 05-1120] 2007). However, no federal regulations have been set at this time. Currently, control of GHGs is generally regulated at the state level and approached by setting emission reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans.

To date, 12 states, including California, have set state GHG emission targets. Executive Order S-3-05 and the passage of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, promulgated the California target to achieve 1990 GHG levels by the year 2020. The target-setting approach allows progress to be made in addressing climate change, and is a forerunner to the setting of emission limits. A companion bill, Senate Bill (SB) 1368, similarly addresses global warming, but from the perspective of electricity generators selling power into the state. The legislation requires that imported power meet the same GHG standards that power plants in California meet. SB 1368 also sets standards for CO_2 for any long term power production of electricity at 1,000 pounds per megawatt hour.

The World Resources Institute's GHG Protocol Initiative identifies six GHGs generated by human activity that are believed to be contributors to global warming (WRI/WBCSD 2007):

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

These are the same six GHGs that are identified in California Assembly Bill (AB) 32 and by the USEPA. Appendix H contains detailed information about the natural and man-made sources of emissions for each of these GHGs.

The different GHGs have varying global warming potential (GWP). The GWP is the ability of a gas or aerosol to trap heat in the atmosphere. By convention, CO_2 is assigned a GWP of 1. By comparison, CH_4 has a GWP of 21, which means that it has a global warming effect 21 times greater than CO_2 on an equal-mass basis. N_2O has a GWP of 310, which means that it has a global warming effect 310 times greater than CO_2 on an equal-mass basis. To account for their GWPs, GHG emissions are often reported as a CO_2 equivalent (CO_2e). The CO_2e is calculated by multiplying the emission of each GHG by its GWP, and adding the results together to produce a single, combined emission rate representing all GHGs. Appendix H contains the GWP for each GHG.

The Project air quality analysis includes estimates of GHG emissions generated by the Project and its alternatives for existing and future conditions. To be consistent with international convention, the GHG emissions in this report are expressed in metric units (metric tons, in this case).

Sustainability and Port Climate Action Plan

In May 2007, the City of Los Angles Mayor's Office released the Green LA Plan, which is an action plan to lead the nation in fighting global warming. The Green LA Plan presents a citywide framework for confronting global climate change to create a cleaner, greener, sustainable Los Angeles. The Green LA Plan directs the Port to develop an individual Climate Action Plan, consistent with the goals of Green LA, to examine opportunities to reduce GHG emissions from operations.

In accordance with this directive, the Port's Sustainability and Climate Action Plan will cover all currently listed GHG emissions related to the Port's activities (such as Port buildings, and Port workforce operations). The Port will complete annual GHG inventories of the Port and its customers and report these to the Climate Action Registry. The first of these inventories will be reported in 2008 for the year 2006.

The Port, as a Department of the City of Los Angeles and as a Port associated with a major City, is a participant in the Clinton Climate Initiative as a C40 City. The Port is also a signatory to the State's Sustainable Goods Movement Program, and is participating in the University of Southern California Sustainable Cities Program, which is looking at GHGs associated with international goods movement.

3.2.2.4 Sensitive Receptors

The impact of air emissions on sensitive members of the population is a special concern. Sensitive receptor groups include children, the elderly, and the acutely and chronically ill. The locations of these groups include residences, schools (grammar schools and high schools), playgrounds, daycare centers, convalescent homes, and hospitals. SCAQMD guidance suggests that CEQA Lead Agencies should identify and consider sensitive receptors which would be located within one-quarter (0.25) mile of land uses emitting air toxics (SCAQMD 1993, Ch. 4). This analysis identified sensitive receptors within one mile of the proposed project sites.

The nearest sensitive receptors to the Project site are residents at the Department of Justice Federal Correctional Institution on Terminal Island at Reservation Point, approximately 0.5 miles (0.8 km) northwest of Berth 408. There are also nearby residential receptors located at the Cabrillo Marina. The nearest sensitive receptors to the tank farm areas and pipeline routes include the World Tots LA daycare center/preschool which is located approximately 1.2 miles (1.9 km) west of Berth 408 and private residences in San Pedro, located approximately 1.2 miles (1.9 km) away in the west direction. No other schools, daycare centers, or hospitals are located within 1 mile of the proposed Project areas.

3.2.2.5 Existing Emissions at the Berth 408 Terminal and associated Project Sites

The sites included in the proposed Project have been either vacant or inactive since before June 2004. This includes the Berth 408 terminal and Tank Farm Site 1 and Tank Farm Site 2. As such the existing emissions for the Berth 408 terminal and associated Tank Farm sites are considered equal to zero for all air pollutants. The disclosure and analysis of the impacts of the projected air emissions relative to this zero baseline are provided in the CEQA impact determinations for the proposed Project and its alternatives.

3.2.2.6 Existing Emissions at other Crude Oil Marine Terminals within the San Pedro Bay Ports

As explained in Section 2.5.2.1, there are presently five marine terminals in the Los Angeles area that regularly offload crude oil: ExxonMobil (Los Angeles Harbor Department [LAHD] Berths 238-240), BP (Port of Long Beach Berths 76-78 and Port of Long Beach Berth 121), Tesoro (formerly Shell) (Port of Long Beach Berths 84-87), and Chevron (offshore mooring west of El Segundo). Based on research conducted by PLAMT and reviewed by the U.S. Army Corps of Engineers (USACE) and LAHD, it was determined that only the terminals at Port of Los Angeles Berths 238-240, located on the west side of Pier 300, and Port of Long Beach Berths 76-78 and 84-87, had capacity to increase their crude oil throughput as of early 2007.

The potential for increased emissions from increased crude oil throughput at those terminals was considered under this analysis. This analysis did not require a determination of the existing mass emissions or GHG emissions from those other terminals because they are not part of the proposed Project and any air quality impacts due to existing mass emissions and GHG emissions from the operation of those facilities is reflected in the baseline ambient air quality measurements for the project area. The NEPA Baseline, or the anticipated environmental conditions if the USACE does not approve development of the PLAMT Crude Oil Marine Terminal and associated facilities, incudes the anticipated increases in air emissions at the nearby marine terminals. Because these emissions would be expected to increase over time, the NEPA Baseline would change correspondingly. The NEPA impact determinations for the proposed Project and each alternative analyze the air impacts of the projected emissions relative to this dynamic baseline.

3.2.3 Applicable Regulations

The Federal Clean Air Act of 1969 and its subsequent amendments established air quality regulations and the NAAQS, and delegated enforcement of these standards to the states. In California, the CARB is responsible for enforcing air pollution regulations. The CARB has, in turn, delegated the responsibility of regulating stationary emission sources to the local air agencies. In the SCAB, the local air agency is the SCAQMD.

The following is a summary of the key federal, state, and local air quality rules, policies, and agreements that potentially apply to the project and its related activities.

3.2.3.1 Federal Regulations

The Federal Clean Air Act (CAA) and its subsequent amendments form the basis for the national air pollution control effort. USEPA is responsible for implementing most aspects of the CAA. Basic elements of the act include the NAAQS for major air pollutants, hazardous air pollutant standards, attainment plans, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

The CAA delegates the enforcement of the federal standards to the states. In California, the CARB is responsible for enforcing air pollution regulations. The CARB has in turn delegated to local air agencies the responsibility of regulating stationary emission sources. In the SCAB, the SCAQMD has this responsibility.

State Implementation Plan

In areas that do not attain a NAAQS, the CAA requires preparation of a State Implementation Plan (SIP), detailing how the State will attain the NAAQS within mandated timeframes. In 2003, the SCAQMD and SCAG developed the *2003 Air Quality Management Plan* (*2003 AQMP*). The focus of the *2003 AQMP* was to demonstrate attainment of the federal PM_{10} standard by 2006 and the federal 1-hour ozone standard by 2010, while making expeditious progress toward attainment of state standards. Since the SCAB was on the verge of attaining the federal CO standard, the *2003 AQMP* also replaced the 1997 attainment demonstration for the federal CO standard and provided a basis for a future maintenance plan for CO (SCAQMD 2003). More recently the SCAQMD and SCAG, in cooperation with the CARB and USEPA, developed the *2007 AQMP* for purposes of demonstrating compliance with the new NAAQS for $PM_{2.5}$ and 8-hour ozone (O_3) and other planning requirements, including compliance with the NAAQS for PM_{10} (SCAQMD et al 2007). Since it will be more difficult to achieve the 8-hour O_3 NAAQS compared to the one-hour NAAQS, the *2007 AQMP* contains substantially more emission reduction measures compared to the *2003 AQMP*. The SCAQMD released the Final *Program Environmental Impact Report for the 2007 AQMP* in June 2007 (SCAQMD 2007a).

IMO MARPOL Annex VI

The International Maritime Organization (IMO) MARPOL Annex VI, which came into force in May 2005, set new international NO_x emission limits on Category 3 (>30 liters per cylinder displacement) marine engines installed on new vessels retroactive to the year 2000. For oceangoing vessel main propulsion engines (<130 revolutions-per-minute [rpm] engine speed), the NO_x limits are about 6 percent lower than the average emissions from pre-Annex VI ships used in the *Port-Wide Baseline Air Emissions Inventory* (Starcrest 2007).

Emission Standards for Nonroad Diesel Engines

To reduce emissions from off-road diesel equipment, USEPA established a series of increasingly strict emission standards for new off-road diesel engines. Tier 1 standards were phased in from 1996 to 2000 (year of manufacture), depending on the engine horsepower category. Tier 2 standards were phased in from 2001 to 2006. Tier 3 standards are phased in from 2006 to 2008. Tier 4 standards, which likely will require add-on emission control equipment to attain them, will be phased in from 2008 to 2015. These standards would only apply to proposed construction equipment, as marine vessels are exempt (DieselNet 2006).

Emission Standards for Marine Diesel Engines

To reduce emissions from Category 1 (at least 50 horsepower [hp] but < 5 liters per cylinder displacement) and Category 2 (5 to 30 liters per cylinder displacement) marine diesel engines, USEPA established emission standards for new engines, referred to as Tier 2 marine engine standards. The Tier 2 standards will be phased in from 2004 to 2007 (year of manufacture), depending on the engine size (USEPA 1999). For the proposed Project, this rule is assumed to affect harbor craft but not oceangoing vessel auxiliary engines because the latter would likely be manufactured overseas and, therefore, would not be subject to the rule.

Emission Standards for On-Road Trucks

To reduce emissions from on-road, heavy-duty diesel trucks, USEPA established a series of cleaner emission standards for new engines, starting in 1988. The USEPA promulgated the final and cleanest standards with the 2007 Heavy Duty Highway Rule (USEPA 2000). The PM emission standard of 0.01 G/Hp-Hr is required for new vehicles beginning with the model year 2007. Also, the NO_x and Non-methane Hydrocarbon (NMHC) standards of 0.20 G/Hp-Hr and 0.14 G/Hp-Hr, respectively, would be phased in together between 2007 and 2010 on a percent-of-sales basis: 50 percent from 2007 to 2009 and 100 percent in 2010.

Nonroad Diesel Fuel Rule

With this rule, USEPA set sulfur limitations for non-road diesel fuel, including locomotives and marine vessels (excluding residual fuel used by oceangoing vessels). This rule affects Project line-haul locomotives. The California Diesel Fuel Regulations (described below) generally pre-empt this rule for other proposed Project sources, such as switch yard locomotives, construction equipment, terminal equipment, and harbor craft. Under this rule, diesel fuel used by line-haul locomotives will be limited to 500 ppm starting June 1, 2007 and 15 ppm starting January 1, 2012 (USEPA 2000).

Highway Diesel Fuel Rule

With this rule, USEPA set sulfur limitations for on-road diesel fuel to 15 ppm starting June 1, 2006 (USEPA 2006).

General Conformity Rule

Section 176(c) of the CAA states that a federal agency cannot support an activity unless the agency determines it will conform to the most recent USEPA-approved SIP. This means that projects using federal funds or requiring federal approval must not (1) cause or contribute to any new violation of a NAAQS, (2) increase the frequency or severity of any existing violation, or (3) delay the timely attainment of any standard, interim emission reduction, or other milestone.

Based on the present attainment status of the SCAB, a federal action would conform to the SIP if its annual emissions remain below 100 tons of CO or $PM_{2.5}$, 70 tons of PM_{10}, or 25 tons of NO_x or VOCs. However, the United States Court of Appeals ruled in December 2006 that areas in nonattainment of the 1-hour O_3 NAAQS that were superseded by the 8-hour nonattainment classifications must also consider the 1-hour requirements in conformity analyses (South Coast Air Quality Management Dist. v. EPA, 472 F.3d 882 [D.C.Cir. 2006]). Hence, 10 tons per year of NO_x or VOCs also are applicable conformity de minimis thresholds for the SCAB. These de minimis thresholds apply to both proposed construction and operational activities. (For proposed Project operations, the thresholds are compared to the net change in emissions relative to the NEPA Baseline.) If the proposed action exceeds one or more of the de minimis thresholds, a more rigorous conformity determination is the next step in the conformity evaluation process. SCAQMD Rule 1901 adopts the guidelines of the General Conformity Rule.

Conformity Statement

The Southern California Association of Governments (SCAG) serves the project area as the Metropolitan Planning Organization (MPO) for Los Angeles, Orange, San Bernardino, Riverside, Ventura and Imperial Counties. As the designated MPO, SCAG is mandated by the federal government to research and draw up plans for transportation and mobility portions of the SCAQMD air plan. SCAG performs the transportation conformity analysis as part of its approval of the Regional Transportation Plan (RTP). The last RTP was approved in 2004 and amended in 2006.

The Port regularly provides SCAG with its Portwide cargo forecasts for development of the AQMP. Cargo projections from Port activities have been included in the RTP of the MPO and thus were included in the most recent USEPA-approved 1997/1999 SIP and the 2003 SIP, should USEPA approve it. These same projections have also been included in the more recent 2007 RTP and SIP, which would also be submitted for USEPA approval. This has been acknowledged by the SCAG, which is the region's MPO. Additionally, an analysis has been done pursuant to 40 CFR 93 Section 153 which determined that the proposed project criteria emissions are de minimis, as they are less than 10 percent of both the 1997 and 2007 RTP. As such, a General Conformity Determination is not required for the proposed project.

3.2.3.2 State Regulations and Agreements

California Clean Air Act

The California Clean Air Act of 1988, as amended in 1992, outlines a program to attain the CAAQS by the earliest practical date. Because the CAAQS are more stringent than the NAAQS, attainment of the CAAQS will require more emissions reductions than what would be required to show attainment of the NAAQS. Consequently, the main focus of attainment planning in California has shifted from the federal to state requirements. Similar to the federal system, the state requirements and compliance dates are based upon the severity of the ambient air quality standard violation within a region.

California Diesel Fuel Regulations

With this rule, the CARB set sulfur limitations for diesel fuel sold in California for use in on-road and off-road motor vehicles (CARB 2005b). Harbor craft and intrastate locomotives were originally excluded from the rule, but were later included by a 2004 rule amendment (CARB 2005b). Under this rule, diesel fuel used in motor vehicles except harbor craft and intrastate locomotives has been limited to 500-ppm sulfur since 1993. The sulfur limit is reduced to 15 ppm effective September 1, 2006. The phase-in period was from June 1, 2006, to September 1, 2006. (A federal diesel rule similarly limits sulfur content nationwide to 15 ppm effective October 15, 2006.) Diesel fuel used in harbor craft in the SCAQMD was limited to 500-ppm sulfur effective January 1, 2006, and 15-ppm sulfur effective September 1, 2006. Diesel fuel used in intrastate locomotives (switch locomotives) is limited to 15-ppm sulfur effective January 1, 2007.

Measures to Reduce Emissions from Goods Movement Activities

In April, 2006, the CARB approved the *Emission Reduction Plan for Ports and Goods Movement in California* (CARB 2006d). The Goods Movement Plan proposes measures that would reduce emissions from the main sources associated with ships, harbor craft, terminal equipment, trucks and locomotives. This Plan is currently under public review.

A recently approved regulation requires ship auxiliary engines operating in California waters beginning on January 1, 2007 to use marine diesel oil (MDO) with a maximum 0.5 percent sulfur by weight or use marine gas oil (MGO). Then, starting on January 1, 2010, auxiliary engines operating in California waters must meet a second set of emission limits; one way to do this would be to use MGO with 0.1 percent sulfur by weight. This regulation is presently being challenged in the federal courts.

Due to the uncertainty regarding the implementation of these regulations and the fact that most have not become law, they were not incorporated into the unmitigated emission estimates for the Project and its alternatives for future conditions. If their implementations become certain prior to completion of this Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report (SEIS/SEIR), their effects will be simulated as such in this analysis.

Statewide Portable Equipment Registration Program (PERP)

The PERP establishes a uniform program to regulate portable engines and portable engine-driven equipment units (CARB 2005a). Once registered in the PERP, engines and equipment units may operate throughout California without the need to obtain individual permits from local air districts. The PERP generally would apply to proposed dredging and barge equipment.

AB 1493 - Vehicular Emissions of Greenhouse Gases

California Assembly Bill 1493 (Pavley), enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB will apply to 2009 and later model year vehicles. CARB estimates that the regulation will reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18% in 2020 and by 27% in 2030 (CARB 2004).

Executive Order S-3-05

California Governor Arnold Schwarzenegger announced on June 1, 2005 through Executive Order S-3-05, state-wide GHG emission reduction targets as follows: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels. Some literature equates these reductions to 11 percent by 2010 and 25 percent by 2020.

AB 32 – California Global Warming Solutions Act of 2006

The purpose of AB 32 is to reduce statewide GHG emissions to 1990 levels by 2020. This enactment instructs the CARB to adopt regulations that reduce emissions from significant sources of GHGs and establish a mandatory GHG reporting and verification program by January 1, 2008. AB 32 requires the CARB to adopt GHG emission limits and emission reduction measures, as well as a market-based cap and trade system, by January 1, 2011, both of which are to become effective on January 1, 2012. AB32 does not identify a significance level of GHG for CEQA/NEPA purposes, nor has the CARB adopted such a significance threshold.

Executive Order S-01-07

Executive Order S-01-07 was enacted by the Governor on January 18, 2007. Essentially, the order mandates the following: 1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and 2) that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California.

SB 1368 GHG Standard for Electrical Generation

SB 1368 authorizes the California Public Utilities Commission (CPUC), in consultation with the California Energy Commission (CEC) and CARB, to establish GHG emissions standards for baseload generation for investor owned utilities (IOUs). It requires the CEC to adopt a similar standard for local publicly owned or municipal utilities. The CPUC adopted rulemaking implementing the legislation in January 2007. The California Energy Commission will adopt similar regulations in June 2007.

California Climate Action Registry

Established by the California Legislature in 2000, the California Climate Action Registry (CCAR or Registry) is a non-profit public-private partnership that maintains a voluntary registry for GHG emissions. The purpose of the Registry is to help companies, organizations, and local agencies establish GHG emission baselines for purposes of complying with future GHG emission reduction requirements. The Port is a voluntary member of the Registry and they have made the following commitments:

- Identify sources of GHG emissions including direct emissions from vehicles, onsite combustion, fugitive and process emissions; and indirect emissions from electricity, steam and co-generation.
- Calculate GHG emissions using the Registry’s General Reporting Protocol (Version 2.1, June 2006).
- Report final GHG emissions estimates on the Registry website.

LAHD has been a member of CCAR since March 29, 2006 and has recently submitted an emissions inventory for LAHD operations and is currently working on an emissions inventory for Port operations (including Port tenants). Organizations that join the CCAR are specifically recognized by AB 32. As a result, the Port is assured that CARB will incorporate emissions reporting protocols developed by CCAR into the California new mandatory GHG emissions reporting program to the maximum extent feasible.