4.2

Air Quality

This chapter describes existing air quality, identifies potential air quality impacts of the Specific Plan, discusses the effects of air quality on the Specific Plan and recommends mitigation measures to reduce or eliminate potentially significant air quality impacts where possible and appropriate. This analysis has been prepared using methodologies and assumptions from the May, 2012 Bay Area Air Quality Management District's (BAAQMD) California Environmental Quality Act Air Quality Guidelines (CEQA Guidelines).

The analysis of greenhouse gas emissions and global climate change is presented in Chapter 4.4: Greenhouse Gas Emissions. Impacts associated with the potential release of asbestos during demolition and construction activities are discussed in Chapter 4.5 Hazards and Hazardous Materials.

Physical Setting

This section describes the regional and local topography and climate that influence air quality, air pollutants of concern, relevant air quality standards, current air quality and attainment status, and existing air pollution sources and sensitive receptors in and around the Planning Area.

Regional Air Quality

The Planning Area is located within the City of Oakland, which is located in the San Francisco Bay Area Air Basin (SFBAAB), a large, shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist. One is through the Golden Gate Strait, a direct outlet to the Pacific Ocean. The second outlet extends to the northeast, along the west delta region of the Sacramento and San Joaquin Rivers.

The City of Oakland is within the jurisdiction of the BAAQMD. Air quality conditions in the SFBAAB have improved significantly since BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Exceedance of air quality standards occurs primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

Ozone levels, measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by the BAAQMD and other regional, State and Federal agencies. The reduction of peak concentrations represents progress in improving public health; however, the Bay Area still exceeds the State standard for 1-hour ozone.

Levels of particulate matter (PM_{10} and $PM_{2.5}$) in the Bay Area have exceeded State standards at least two times per year during the past three years. The Bay Area is considered a non-attainment area for PM_{10} and $PM_{2.5}$ relative to the State standard, and unclassified for the federal standards.

No exceedance of the State or federal carbon monoxide (CO) standards has been recorded at any of the region's monitoring stations since 1991. The Bay Area is currently considered a maintenance area for State and federal CO standards.

The BAAQMD's 2009 Ozone Attainment Plan (OAP) contains district-wide control measures to reduce ozone precursor emissions (e.g., ROG and NO_x) and particulate matter. Ozone, in particular, results from the reaction of organic gases (ROG) and nitrogen oxide (NO_x) in the atmosphere. To reduce ozone, its precursors (ROG and NO_x) are regulated. The State standards for these pollutants are at least as stringent as the national standards.

Toxic air contaminants (TACs) are not criteria pollutants, but are associated with health-related effects and have appreciable concentrations in the Bay Area. The US Environmental protection Agency (EPA) and the California Air Resources Board (ARB) have identified over 800 substances that are emitted into the air that may affect human health. Some of these substances are considered to be carcinogens, while others are known to have other adverse health effects. As part of ongoing efforts to identify and assess potential health risks to the public, BAAQMD has collected and compiled air toxic emissions data from industrial and commercial sources of air pollution throughout the Bay Area. Monitoring data and emissions inventory of toxic air contaminants helps the BAAQMD determine health risk to Bay Area residents. The 2003 emissions inventory shows that emissions of many TACs are decreasing in the Bay Area.

Ambient monitoring concentrations of TACs indicates that pollutants emitted primarily from motor vehicles (1,3-butadiene and benzene) account for slightly over one-half of the average calculated cancer risk from ambient air in the Bay Area.[1] According to the BAAQMD, ambient benzene levels declined dramatically in 1996 with the advent of Phase 2 reformulated gasoline. Due to this reduction, the calculated average cancer risk based on monitoring results has been reduced to 143 in one million. However, this risk does not include the risk resulting from exposure to diesel particulate matter or other compounds not monitored. Although not specifically monitored, recent studies indicate that exposure to diesel particulate matter may contribute significantly to cancer risk (approximately 500 – 700 in one million) that is greater than all other measured TACs combined.[2]

Local Climate and Air Quality

Air quality is a function of both local climate and local sources of air pollution. The amount of a given air pollutant in the atmosphere is determined by the amount of pollutant released and the atmosphere's ability to transport and/or dilute that pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain, and for photochemical pollutants, sunshine.

The City of Oakland is located in the Northern Alameda and Western Contra Costa subregion of the SFBAAB. This climatological subregion stretches from Richmond to San Leandro. Its western boundary is defined by the Bay, and its eastern boundary by the Oakland-Berkeley Hills. The Oakland-Berkeley Hills have a ridge line height of approximately 1,500 feet, a significant barrier to air flow. The most densely populated area of the subregion lies in a strip of land between the Bay and the lower hills.

In this area, marine air traveling through the Golden Gate, as well as across San Francisco and through the San Bruno Gap, is a dominant weather factor. The Oakland-Berkeley Hills cause the westerly flow of air to split off to the north and south of Oakland, which causes diminished wind speeds. The prevailing winds for most of this subregion are from the west.

[1] BAAQMD, 2007, Toxic Air Contaminant Control Program Annual Report 2003 Volume 1, August.

[2] Ibid.

Temperatures in this subregion have a narrow range due to the proximity of the moderating marine air. Maximum temperatures in summer average in the mid-70s, with minimums in the mid-50s. Winter highs are in the mid- to high-50s, with lows in the low- to mid-40s.

This subregion contains a variety of industrial air pollution sources. Some industries are quite close to residential areas. The subregion is also traversed by frequently congested freeways. Traffic and congestion, and the motor vehicle emissions they generate, are increasing.

Air Quality Issues – Criteria Pollutants

Air pollutant emissions within the Bay Area are generated by stationary, area-wide and mobile sources. Stationary sources are usually associated with specific large manufacturing and industrial facilities. Examples include fossil-fuel power plants or large industrial boilers. Area sources emit small amounts of pollutants individually, but there are often many of them, and the sum of their emissions amounts to a large total quantity. Examples of area sources include residential and commercial water heaters, painting/coating operations, power lawn mower use, farming, and consumer products such as barbeque lighter fluid and hair spray. Mobile sources include on-road motor vehicles, aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by natural sources such as wild fires. A description of the criteria air pollutants, their sources and their health effects follows.

Ozone

Ozone (smog) is a pungent, colorless gas that is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NOx). Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children. Ozone levels peak during the late spring, summer and early fall months.

Carbon Monoxide

CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. CO passes through the lungs into the bloodstream, where it interferes with the transfer of oxygen to body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia.

Nitrogen Oxides

Nitrogen dioxide (NO2), a reddish-brown gas, and nitric oxide (NO), a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NOx. NOx is a primary component of the photochemical smog reaction. Nitrogen oxides also contribute to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO2 is an air quality pollutant of concern because it acts as a respiratory irritant, decreases lung function and may reduce resistance to infection.

Reactive Organic Gases

Reactive organic gases (ROG) are formed from combustion of fuels and evaporation of organic solvents. Consequently, ROG accumulates in the atmosphere much quicker during the winter when sunlight is limited and photochemical reactions are slower. ROG is an ozone precursor and a prime component of the photochemical reaction that forms ozone; however, ROG is not considered a criteria pollutant on its own.

Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles are those that are larger than 2.5 microns but smaller than 10 microns, or PM10. PM2.5 refers to fine suspended particulate matter with an aerodynamic diameter of 2.5 microns or less that is not readily filtered out by the lungs. Nitrates, sulfates, dust, and combustion particulates are major components of PM10 and PM2.5. These small particles can be directly emitted into the atmosphere as by-products of fuel combustion, through abrasion, such as tire or brake lining wear, or through fugitive dust (wind or mechanical erosion of soil). They can also be formed in the atmosphere through chemical reactions. Particulates may transport carcinogens and other toxic compounds that adhere to the particle surfaces, and can enter the human body through the lungs.

Sulfur Dioxide

Sulfur dioxide (SO2) is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO2 levels in the region. SO2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight.

Lead

Lead is a metal found in the natural environment, as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. In the past, mobile sources were the main contributor to ambient lead concentrations in the air. With the phase-out of lead in gasoline, other stationary sources, such as metal processing, are currently the primary source of lead emissions. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Ambient Air Quality Standards

The federal and State governments have established ambient air quality standards. These standards are intended to protect the health of individuals most sensitive to a given pollutant's effects. The latest of these pollutant standards are listed in **Table 4.2-1** below. The Bay Area's Attainment Status is shown in **Table 4.2-2**, while the known health effects are listed in **Table 4.2-3**.

Table 4.2-1: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard	National Standard
Ozone	1 Hour	0.09 ppm	---
	8 Hour	0.070 ppm	0.075 ppm
Carbon Monoxide	1 Hour	20 ppm	35 ppm
	8 Hour	9.0 ppm	9 ppm
Nitrogen Dioxide	1 Hour	0.18 ppm	---
	Annual	0.03 ppm	0.053 ppm
Sulfur Dioxide	24 Hour	0.04 ppm	0.14 ppm
	Annual	---	0.030 ppm
Particulates	24 Hour	50 ug/m3	150 ug/m3
< 10 microns	Annual	20 ug/m3	---
Particulates	24 Hour	---	35 ug/m3
< 2.5 microns	Annual	12 ug/m3	15 ug/m3

Concentrations: ppm = parts per million ug/m3 = micrograms per cubic meter

Source: Bay Area Air Quality Management District, Bay Area Pollution Summary – 2008.

Table 4.2-2: Regional Attainment Status

Pollutant	Federal Status	State Status
Ozone (O3) – 1-Hour Standard	applicable	Non-attainment
Ozone (O3) – 8-Hour Standard	Non-attainment	Non-attainment
Suspended Particulate Matter (PM10) – Annual Mean		Non-attainment
Suspended Particulate Matter (PM10) – 24 Hour	Unclassified	Non-attainment
Suspended Particulate Matter (PM2.5) – Annual Mean	Attainment	Non-attainment
Suspended Particulate Matter (PM2.5) – 24 Hour	Non-attainment	not applicable
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (No2)	Attainment	Attainment
Sulfur Dioxide (SO2)	Attainment	Attainment

Source: BAAQMD, ARB.

Table 4.2-3: Health Effects of Air Pollutants

Pollutant	Health Effects	Examples of Sources
Suspended Particulate Matter(PM 2.5 and PM 10)	Reduced lung function Aggravation of the effects of gaseous pollutants Aggravation of respiratory and cardio respiratory diseases Increased cough and chest discomfort Soiling Reduced visibility	Stationary combustion of solid fuels Construction activities Industrial processes Atmospheric chemical reactions
Ozone (O3)	Breathing difficulties Lung damage	Formed by chemical reactions of air pollutants in the presence of sunlight; common sources are motor vehicles, industries, and consumer products
Carbon Monoxide (CO)	Chest pain in heart patients Headaches, nausea Reduced mental alertness Death at very high levels	Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Lead (Pb)	Organ damage Neurological and reproductive disorders High blood pressure	Metals processing Fuel combustion Waste disposal
Nitrogen Dioxide (NO2)	Lung damage	See carbon monoxide sources
Toxic Air Contaminants	Cancer Chronic eye, lung, or skin irritation Neurological and reproductive disorders	Cars and trucks, especially diesels Industrial sources such as chrome platers Neighborhood businesses such as dry cleaners and service stations Building materials and products

Source: ARB and EPA, 2005

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

BAAQMD monitors criteria air pollutant concentrations at a number of monitoring stations throughout the Bay Area. The air quality in the Bay Area, including Oakland, has generally improved over the past 20 years, as motor vehicles have become cleaner, agricultural and residential burning has been curtailed, and consumer products containing ROG have been reformulated or replaced.

The U.S. EPA and the California ARB use different standards for determining whether the Bay Area is an attainment area. Under national standards, the Bay Area was designated as a marginal nonattainment area for ozone in 2004. The regional is expected to also be considered as nonattainment when the U.S. EPA issues a final attainment designation based on the new 0.75 ppm 8-hour ozone standard, which is

expected mid-2012. The Bay Area is designated nonattainment for PM2.5. The Bay Area is in attainment or designated as unclassified for all other pollutants under national standards.

Under State standards, the Bay Area is designated as a nonattainment area for all standards for ozone, PM10, and PM2.5 and an attainment area for all other pollutants. Review of ozone and particulate matter data for the monitoring stations in West Oakland and Oakland (9925 International Blvd.) shows that only one standard was exceeded from 2008 through 2010, which was the State annual standard for PM10 in 2008. Air Quality monitoring data is reported in **Table 4.2-4**.

Table 4.2-4: Ambient Air Quality Monitoring Data from the West Oakland Monitoring Station

Pollutant	Standard	Days Standard Exceeded		
		2008	2009	2010
Carbon Monoxide	Federal 1 Hour	0	0	0
	State 1 Hour	0	0	0
	Federal 8 Hour	0	0	0
	State 8 Hour	0	0	0
Ozone	State 1-Hour	0	0	0
	Federal 8-Hour	0	0	0
	State 8-Hour	0	0	0
PM10	Federal 24-Hour	0	0	0
	State 24-Hour	0	0	0
	Federal Annual Arithmetic Average	No	No	ND
	State Annual Arithmetic Average	Yes	No	ND
PM 2.5	Federal 24-Hour	0	ND	ND
	Federal Annual Arithmetic Average	No	ND	ND
	State Annual Arithmetic Average	No	ND	ND
Nitrogen Dioxide	All standards	0	0	0
Sulfur Dioxide	All standards	0	0	0

ND = No data. There was insufficient (or no) data to determine the value.

Source: California ARB, 2012.

Air Quality Issues - Toxic Air Contaminants

TACs are a regulatory designation that includes a diverse group of air pollutants which adversely affect human health. The health effects of TACs can result from either acute or chronic exposure. Many types of cancer are associated with chronic TAC exposures, but TAC exposures can also cause other adverse health effects. Consequently, the BAAQMD has established both a cancer and a non-cancer health risk threshold to evaluate TAC emissions.

Significant sources of TACs in the environment include industrial processes such as petroleum refining, chemical manufacturing, electric utilities, metal mining/refining and chrome plating; and commercial operations, gasoline stations, dry cleaners and buildings with boilers and/or emergency generators. Mobile sources are gasoline and diesel-powered vehicles of all types. The California ARB listed 10 compounds that pose the greatest known health risk in California. Based primarily on ambient air quality data, these are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (DPM). [3]

Diesel Particulate Matter

In 1998, the ARB identified diesel engine particulate matter as a toxic air contaminant (TAC). Facilities that may have substantial diesel exhaust emissions include truck stops; warehouse/distribution centers; large commercial or industrial facilities; high volume transit centers; schools with high volume of bus traffic; high volume highways or high volume arterial/roadways with high levels of diesel traffic. Diesel particulate matter (DPM) is found in engine exhaust and consists of a mixture of gases and fine particles (smoke or soot) that can penetrate deeply into the lungs where it can contribute to a range of health problems. Diesel exhaust is a complex mixture that includes hundreds of individual constituents and is identified by the State of California as a known carcinogen. However, under California regulatory guidelines, DPM is used as a surrogate measure of exposure for the mixture of chemicals that make up diesel exhaust as a whole.[4]Determining how hazardous a substance is depends on many factors, including the amount of the substance in the air, how it enters the body, how long the exposure lasts, and what organs in the body are affected. One major way these substances enter the body is through inhalation of either gases or particulates. While many gases are harmful, very small particles penetrate deep into the lungs, contributing to a range of health problems. Exhaust from diesel engines is a major source of these airborne particles. California's Office of Environmental Health Hazard Assessment (OEHHA) has determined that long-term exposure to diesel exhaust particulates poses the highest cancer risk of any TAC it has evaluated.

Based on receptor modeling techniques, the California ARB estimated the background DPM health risk in the Bay Area in 2000 to be approximately 500 cancer cases per million people. This reflects a drop of approximately 36 percent from estimates for 1990.[5]

Public Health Concerns

As described above, increased cancer risk is associated with long-term exposure to certain criteria pollutants and toxic air contaminants, while short-term exposure can cause or aggravate chronic respiratory disease such as asthma, bronchitis, and emphysema.

Sensitive Receptors

For purposes of air quality and public health and safety, sensitive receptors are generally defined as land uses with population concentrations that would be particularly susceptible to disturbance from dust and

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[3] California ARB, 2009. The 2009 California Almanac of Emissions and Air Quality. Sacramento, CA.

[4] California Environmental Protection Agency, 1998. Findings of the Scientific Review Panel on The Report on Diesel Exhaust, as adopted at the Panel's April 22, 1998 meeting. Office of Environmental Health Hazard Assessment

[5] California ARB, 2009, op. cit.

air pollutant concentrations, or other disruptions associated with project construction and/or operation. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals and convalescent homes are considered to be relatively sensitive to poor air quality because children, the elderly and the infirm are more susceptible to respiratory disease and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

Background Concentrations of TAC

Both the BAAQMD and the California Air Resources Board (CARB) operate TAC monitoring networks in the San Francisco Bay Area. The TACs selected for monitoring are those that have traditionally been found in the highest concentrations in ambient air, and therefore tend to produce the most significant risk. The ARB operates a monitoring station at 9925 International Boulevard, the nearest station to West Oakland. The BAAQMD operates ambient TAC monitoring stations at Davie Stadium at 198 Oak Road (Oakland) and at Filbert Street (West Oakland). Each of these stations monitors levels of continuous PM2.5 as a proxy for diesel emissions. Pollutant monitoring results for the years 2009 through 2012 are shown in **Table 4.2-5.**

As indicated in the monitoring results from the CARB monitoring station on International Boulevard, the federal 24-hour PM2.5 standard of 35 micrograms/cubic meter (µg/m3) was exceeded three times in 2009, was not exceed in 2010, and was again exceeded three times in 2001. Year 2012 data is not yet available. As also indicated in this table are the annual average (annual arithmetic mean) concentrations of PM2.5 at each of the two BAAQMD monitoring station sites. Although there are federal and state standards for PM2.5 annual arithmetic mean concentrations (15µg/m3, and 12µg/m3 respectively), it is unclear whether the monitoring methods used at these stations during the reporting year are appropriately direct comparisons to those standards.

Table 4.2-5: PM2.5 (Diesel PM) Monitoring Data

	2012	2011	2010	2009
Days Exceeding Federal Standard (35 ug/m3) 1	N/A	3	0	3
Measured Annual Average Concentration Levels (ug/m3) 2	Annual Avg.	Annual Avg.	Annual Avg.	Annual Avg.
Oakland Station (Davie Stadium)	10	10	8	10
West Oakland Station (Filbert Street)	7	10	9	11

Notes:

Data from ARB Monitoring Station on International Blvd., source: http://www.arb.ca.gov/adam/select8/sc8display.php

BAAQMD CARE Program

Under the Community Air Risk Evaluation (CARE) program, BAAQMD began identifying areas with high TAC emissions and sensitive populations that could be affected by such emissions, and using this information to establish policies and programs to reduce TAC emissions and exposures. During Phase I of CARE, BAAQMD developed a preliminary Bay-Area-wide TAC emissions inventory (for the Year 2000) and compiled demographic and health statistics data to identify sensitive populations. Five TACs (DPM, 1,3-butadiene, benzene, hexavalent chromium, and formaldehyde) were estimated to be responsible for about 97 percent of the Bay Area's cumulative cancer risk, and DPM alone accounts for about 80 percent of this cancer risk. Major sources of DPM include on-road and off-road heavy-duty diesel trucks and construction equipment. The highest DPM emissions occur in the urban core areas of eastern San Francisco, western Alameda, and northwestern Santa Clara Counties.

TACs do not have ambient air quality standards, but are regulated by the BAAQMD using a risk-based approach. This approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis where human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.

California Air Resources Board's West Oakland Health Risk Assessment

In March 2008, the California ARB working in cooperation with the Port of Oakland, Union Pacific (UP) Railroad, and the BAAQMD completed a study designed to help understand the potential health impacts from DPM emissions on residents of the West Oakland community. Key findings of the California ARB report were:

- DPM ambient concentrations in West Oakland are estimated to be nearly three times the background DPM concentrations averaged over the entire Bay Area.
- The estimated lifetime potential cancer risk for residents of West Oakland from exposure to all DPM emissions included in the study was estimated to be about 1,200 excess cancers per million. This estimate assumes residents are exposed to the estimated 2005 outdoor DPM levels continuously for 70 years. By way of comparison, the corresponding background risk from DPM emissions over the entire Bay Area was estimated to be 480 excess cancer cases per million, the corresponding background risk from emissions of all air toxics species in the Bay Area is 660 per million and the expected cancer rate from all causes, including smoking, is about 200,000 to 250,000 per million, according to the California ARB study.
- Of the total West Oakland DPM exposure risk noted above (1,186 per million from all sources), emissions from Port seaport operations contribute approximately16 percent (192 per million), Union Pacific rail yard sources contribute 4 percent (43 per million) and other sources in and around West Oakland contribute the remaining 80 percent (951 per million).
- At the time of the 2008 report, California ARB projections of future DPM emissions indicate that emissions and associated health risk would be reduced in West Oakland by about 80 percent by 2020, reflecting reductions achieved by State and federal regulations.

ARB compiled a baseline emissions inventory representing emission sources as of 2005. Port of Oakland emission inventories were developed by Environ International Corporation (Environ) for the Port of Oakland and reviewed by ARB and BAAQMD staff. Union Pacific rail yard activity emission inventories were developed by Union Pacific and reviewed by ARB staff. All other emission source inventories were developed by ARB, Port, and BAAQMD staff. **Table 4.2-6** provides a summary of the emissions estimates

by source and by category. As shown in Table 4.2-6, the emissions of diesel PM from Port-related activities were estimated to be approximately 265 tons per year, 11 tons per year for the Union Pacific rail yard activities, and about 570 tons per year for the other sources. All combined, ARB estimates that there were approximately 845 tons of diesel PM emissions in 2005 from these combined activities.

Table 4.2-6: Modeled 2005 and 2020 Diesel PM Emissions for West Oakland
(Diesel PM Emissions Tons/Year)

	Port of Oakland		Union Pacific Rail Yard		Other Sources		Combined	
	2005	2020	2005	2020	2005	2020	2005	2020
Ocean-going Vessels	209	66	-		218	57	428	123
Cargo Handling Equipment	21	4.3	2.2	1.1	4.3	1	27	6.3
Heavy-duty Diesel Trucks	20	6.3	1.9	0.6	90	15	112	21
Commercial Harbor Craft	13	3.6	-		238	84	251	87
Locomotives	2.0	1.4	3.9	2.8	1.3	5	7.2	9.4
Total	265	82	11	4.5	568	162	845	248

Source: California ARB, Diesel Particulate Matter Health Risk Assessment for the West Oakland Community, 2008, Table 3

This emission inventory from the ARB "Diesel Particulate Matter Health Risk Assessment for the West Oakland Community" represents the most comprehensive inventory of diesel PM emissions in the West Oakland area that had been prepared to date. The inventory was compiled from ARB developed category-specific emissions inventory models, and additional data where necessary to allocate emissions spatially within the modeling domain. The inventory was reviewed by several groups within ARB, and by the BAAQMD and the Port. Overall, there was general agreement that the inventory represented the best information available on each category of emissions source, and the magnitude of emissions in the modeling domain.

One of the goals of the ARB's Health Risk Assessment was to estimate future health risks associated with emissions from the Port of Oakland, the Union Pacific rail yard, and other emissions sources. Evaluating the potential health impacts in future years required the use of emission inventories for future years based on projected future growth, and the impact of current and pending State and federal regulations on each emissions source. In general, the growth assumptions were consistent with assumptions used in the Goods Movement Emission Reduction Plan approved by the ARB in 2006, and represent an increase of about 4% to 5% per year for each category. Even with such substantial growth, emissions were expected to decrease in the future. Decreases are expected to result from regulations that the ARB and the federal government have already adopted, such as ARB's Port Drayage Truck regulation requiring the clean-up of all trucks that service California's Ports. ARB also assumed new regulations which require ocean-going ships to use cleaner fuels, and those which require the clean-up of private on-road heavy duty trucks. With the adoption of ARB's Port Drayage Truck Regulation and the proposed Private Fleet Regulation, every truck operating in West Oakland will be required to meet new, more stringent emissions standards.

Using this approach, emissions were forecasted to several years, including 2020. As can be seen in **Table 4.2-6**, even with projected growth, diesel emissions were forecast to decline over time due to implementation of regulations that have been adopted or are planned to be adopted. Overall, the combined emissions are expected to decrease by about 50% in 2010and by as much as 70%in 2020, relative to emissions levels in 2005.

Regulatory Setting

The Federal Clean Air Act (FCAA) governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulation under the California Clean Air Act (CCAA). At the federal level, the U.S. Environmental Protection Agency (EPA) administers the FCAA. The CCAA is administered by ARB at the State level, and by the Air Quality Management Districts at the regional and local levels. The BAAQMD regulates air quality at the regional level.

Federal

The federal government is continually updating and revising air quality regulations. The United States Environmental Protection Agency (U.S. EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships and certain locomotives.

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

Federal Clean Air Act (FCAA)

The 1970 FCAA authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The FCAA Amendments of 1990 (FCAAA) changed deadlines for attaining national standards, as well as remedial actions required of areas of the nation that exceed the standards. Under the FCAAA, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans (SIPs) to demonstrate how they will achieve the national standards for O3 by specified dates. The FCAAA requires that projects receiving federal funds demonstrate conformity to the approved SIP and local air quality attainment plan for the region. Conformity with the SIP requirements also satisfies the FCAAA requirements.

Title III of the federal Clean Air Act Amendments required the U.S. EPA to promulgate national emissions standards for certain Toxic Air Contaminants (TACs). At first, the U.S. EPA developed technology-based emission standards designed to produce the maximum emission reduction achievable, generally referred to as Maximum Achievable Control Technology (MACT) standards. Then the U.S. EPA developed health risk-based emissions standards necessary to address risks remaining after implementation of MACT. Consequently, performance criteria were established to limit mobile source emissions of certain TACs, including benzene, formaldehyde, and 1,3-butadiene.

Notable changes in federal air quality regulations that would affect the build out of the West Oakland Specific Plan include cleaner fuel standards (e.g., ultra-low sulfur diesel), diesel engine emission limits, and more stringent ozone, SO2 and PM2.5 standards.

U.S. Environmental Protection Agency

At the federal level, EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the FCAA, as amended in 1970, 1977 and 1990.

The FCAA required EPA to establish primary and secondary national AAQS. The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAAA added requirements for states with non-attainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA has responsibility to review all state SIPs to determine conformation to the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the non-attainment area that imposes additional control measures. Failure to submit an appropriate SIP or to implement the plan within the mandated timeframe may result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

State

Like the U.S. EPA, the California Air Resources Board (ARB) is continually updating and revising regulations. The California ARB, a part of the California EPA, is responsible for the coordination and administration of both federal and State air pollution control programs within California. In this capacity, California ARB conducts research, sets California Ambient Air Quality Standards, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The California ARB establishes emissions standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

California Clean Air Act

In 1988, the CCAA required that all air districts in the State endeavor to achieve and maintain California ambient air quality standards for CO, O3, SO2 and NO2 by the earliest practical date. The CCAA provides districts with new authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each district plan is to achieve a 5 percent annual reduction, averaged over consecutive three-year periods, in district-wide emissions of each non-attainment pollutant or its precursors. Additional physical or economic development within the region would tend to impede the emissions reduction goals of the CCAA. Generally, the State standards for these pollutants are more stringent than the national standards.

California Air Resources Board

The ARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California, and for implementing the CCAA. The CCAA requires that all air districts in California endeavor to achieve and maintain California ambient air quality standards by the earliest practical date. The act specifies that districts should focus particular attention on reducing the emissions

from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

ARB is primarily responsible for developing and implementing air pollution control plans to achieve and maintain the National Ambient Air Quality Standards (NAAQS). The ARB has primary responsibility for statewide pollution sources and produces a major part of the SIP. Local air districts are still relied upon to provide additional strategies for sources under their jurisdiction. The ARB combines this data and submits the completed SIP to EPA.

Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing California Ambient Air Quality Standards (CAAQS), which in many cases are more stringent than the NAAQS, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

California ARB conducts research, sets California Ambient Air Quality Standards, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The California ARB establishes emissions standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act (AB 2588). AB 1807 sets procedures for the designation of TACs and control measures for sources that emit particular TACs. If there is a safe emission threshold for a substance, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must require all feasible control measures to minimize emissions. To date, none of the TACs identified under AB 1807 has a safe threshold. AB 2588 requires all facilities emitting TACs above specified levels to prepare emission inventories and risk assessments (the latter, if TAC emissions are found to be significant), and then to notify the public of the any significant risk and implement necessary reduction measures.

In 2000, the California ARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled engines and vehicles. The goal of the Plan is to reduce diesel PM emissions and the associated health risk by 75 percent in 2010 and 85 percent by 2020 relative to year 2000 levels. Since 2002, ARB adopted several TAC control measures and established more stringent emission standards for various on-road vehicles and off-road diesel equipment, especially equipment and fuel related to seaports, in an effort to meet its goals. Over time, the replacement of older vehicles is expected to result in a vehicle fleet that emits substantially less of the associated TACs (i.e., diesel particulate matter (DPM), benzene, and 1,3-butadiene). Adopted regulations are also expected to reduce formaldehyde emissions from cars and light-duty trucks.

Air Quality and Land Use Handbook

The ARB has developed an Air Quality and Land Use Handbook, which is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process.[6] The ARB handbook recommends that planning agencies

[6] California Air Resources Board, 2005, Air Quality and Land Use Handbook: A Community Health Perspective, April.

strongly consider proximity to these sources when finding new locations for "sensitive" land uses such as homes, medical facilities, daycare centers, schools and playgrounds.

Air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners and large gasoline service stations. Key recommendations in the Handbook include taking steps to avoid siting new, sensitive land uses:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles/day.
- Within 1,000 feet of a major service and maintenance rail yard.
- Immediately downwind of ports (in the most heavily impacted zones) and petroleum refineries.
- Within 300 feet of any dry cleaning operation (for operations with two or more machines, provide 500 feet).
- Within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater).

The Handbook specifically states that its recommendations are advisory, and acknowledges land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

California Green Building Standards Code (CALGreen)

CALGreen is the green building code specific to the state of California, adopted in January 2010 and effective as of January 2011 for residential and non-residential new construction projects. This code aims to improve safety, health and general welfare of the public in California by reducing the negative impacts of construction and buildings on the environment and encouraging sustainable construction practices. Through the promotion of sustainable planning and design, energy efficiency, water efficiency and conversion, material conversion and resources efficiency and environmental quality, CALGreen aims to support a high standard for green buildings in California and lower the overall impacts that buildings pose on the environment. The code is composed of mandatory measures that must be implemented by local jurisdictions as well as voluntary measures called Tiers.

Regional

Bay Area Air Quality Management District

BAAQMD is the primary agency responsible for assuring that the NAAQS and CAAQS are attained and maintained in the Bay Area. BAAQMD's jurisdiction includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo and Santa Clara counties, and the southern portions of Solano and Sonoma counties. The Air District's responsibilities in improving air quality in the region include: preparing plans for attaining and maintaining air quality standards; adopting and enforcing rules and regulations; issuing permits for stationary sources of air pollutants; inspecting stationary sources and responding to citizen complaints; monitoring air quality and meteorological conditions; awarding grants to reduce mobile emissions; implementing public outreach campaigns; and assisting local governments in addressing climate change.

The BAAQMD attains and maintains air quality conditions in the San Francisco Bay Area Air Basin (SFBAAB) through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of the BAAQMD includes

the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. The BAAQMD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the FCAA, FCAAA, and the CCAA.

In 2003, the California Legislature passed Senate Bill 656 (SB 656) to reduce public exposure to PM10 and PM2.5. SB 656 required the California ARB, in consultation with local air districts, to develop and adopt, by January 1, 2005, a list of the most readily available, feasible, and cost-effective control measures to reduce PM10 and PM2.5. In November 2005, BAAQMD adopted a Particulate Matter Implementation Strategy focusing on those measures most applicable and cost effective for the Bay Area.

BAAQMD is directly responsible for reducing emissions from stationary sources and for assuring that State controls on mobile sources are effectively implemented. It has responded to this requirement by preparing a sequence of Ozone Attainment Plans and Clean Air Plans that comply with the federal Clean Air Act and the California Clean Air Act to accommodate growth, reduce the pollutant levels in the Bay Area, meet federal and State ambient air quality standards, and minimize the fiscal impact that pollution control measures have on the local economy. The Ozone Attainment Plans are prepared to address the federal ozone standard and the Clean Air Plans are prepared to address the State ozone standard.

Although BAAQMD is responsible for regional air quality planning efforts, it does not have direct authority over plans formulated by other local agencies or governments, or over new development projects within the Bay Area.

Bay Area Clean Air Plan

The BAAQMD prepares plans to attain ambient air quality standards in the San Francisco Bay Area Air Basin. The BAAQMD prepares the Clean Air Plan (CAP) in coordination with the Metropolitan Transportation Commission and the Association of Bay Area Governments (ABAG). With respect to applicable air quality plans, the BAAQMD has adopted the 2010 Clean Air Plan to address multiple pollutants in a single integrated plan. The purpose of the 2010 Clean Air Plan is to:

- Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the CCAA to implement “all feasible measures” to reduce ozone;
- Consider the impacts of ozone control measures on particulate matter (PM), air toxics, and greenhouse gases in a single, integrated plan;
- Review progress on improving air quality in recent years;
- Establish emission control measures to be adopted or implemented in the 2009-2012 timeframe.

Similarly, the BAAQMD prepared the 2010 Clean Air Plan to address non-attainment of the CAAQS.

BAAQMD CEQA Guidelines

On June 2, 2010 the BAAQMD adopted Thresholds of Significance for use in determining the significance of projects’ environmental effects under the California Environmental Quality Act, and published CEQA Guidelines for consideration by lead agencies. In addition to thresholds of significance for greenhouse gas (GHG) emissions, the thresholds lowered the previous (1999) threshold of significance for annual emissions of reactive organic gases (ROG), nitrogen oxides (NOx) and particulate matter exhaust (PM10), and set a standard for smaller particulates (PM2.5) and fugitive dust.

On March 5, 2012 the Alameda County Superior Court issued a judgment finding that the Air District had failed to comply with CEQA when it adopted the thresholds. The court did not determine whether the Thresholds were valid on the merits, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the District to set aside the thresholds and cease dissemination of them until the Air District had complied with CEQA. In view of the court's order, lead agencies will need to determine appropriate air quality thresholds of significance based on substantial evidence in the record. Lead agencies may rely on the Air District's updated CEQA Guidelines (updated May 2012) for assistance in calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures.

New Source Review

The BAAQMD's New Source Review regulations predominantly apply to non-attainment pollutants. The purpose of the New Source Review rule is to provide for the review of new and modified sources and provide mechanisms, including the use of best available control technology for both criteria and toxic air pollutants, and emissions offsets by which authorities to construct such sources could be granted. The New Source Review regulations also include Prevention of Significant Deterioration (PSD) rules for attainment pollutants. PSD rules are designed to ensure that the emission sources will not cause or interfere with the attainment or maintenance of ambient air quality standards.

With respect to the construction phase of the proposed Plan, applicable BAAQMD regulations would relate to portable equipment (e.g., Portland concrete batch plants, and gasoline- or diesel-powered engines used for power generation, pumps, compressors, pile drivers, and cranes), architectural coatings, and paving materials. Equipment used during project construction would be subject to the requirements of BAAQMD Regulation 2 (Permits), Rule 1 (General Requirements) with respect to portable equipment unless exempt under Rule 2-1-105 (Exemption, Registered Statewide Portable Equipment); BAAQMD Regulation 8 (Organic Compounds), Rule 3 (Architectural Coatings); and BAAQMD Regulation 8 (Organic Compounds), Rule 15 (Emulsified and Liquid Asphalts). With respect to the operational phase of the proposed Plan, BAAQMD Regulation 2, Permits would apply to new or modified stationary sources proposed in the Planning Area.

City of Oakland

General Plan

The Oakland General includes several policies related to air quality.

Land Use and Transportation Element (LUTE). The LUTE of the Oakland General Plan contains the following policies that address issues related to air quality:

> Objective T2: Provide mixed use, Transit-Oriented Development that encourages public transit use and increases pedestrian and bicycle trips at major transportation nodes.
>
> Policy T.2.1: Encouraging Transit-Oriented Development. Transit-Oriented Development should be encouraged at existing or proposed transit nodes, defined by the convergence of two or more modes of public transit such as BART, bus, shuttle service, light rail or electric trolley, ferry, and inter-city or commuter rail.
>
> Policy T.2.2: Guiding Transit-Oriented Development. Transit-Oriented Developments should be pedestrian-oriented, encourage night and day time use, provide the neighborhood with needed

goods and services, contain a mix of land uses, and be designed to be compatible with the character of surrounding neighborhoods.

Policy T2.5: Linking Transportation Activities. Link transportation facilities and infrastructure improvements to recreational uses, job centers, commercial nodes, and social services (i.e., hospitals, parks, or community centers).

Policy T3.2: Promoting Strategies to Address Congestion. The city should promote and participate in both local and regional strategies to manage traffic supply and demand where unacceptable levels of service exist or are forecast to exist.

Policy T3.5: Including Bikeways and Pedestrian Walks. The City should include bikeways and pedestrian ways in the planning of new, reconstructed, or realigned streets, wherever possible.

Policy T3.6: Encouraging Transit. The City should encourage and promote use of public transit in Oakland by expediting the movement of and access to transit vehicles on designated "transit streets" as shown on the Transportation Plan.

Policy T3.7: Resolving Transportation Conflicts. The city, in constructing and maintaining its transportation infrastructure, shall resolve any conflicts between public transit and single occupant vehicles in favor of the transportation mode that has the potential to provide the greatest mobility and access for people, rather than vehicles, giving due consideration to the environment, public safety, economic development, health, and social equity impacts.

Policy T4.1: Incorporating Design Features for Alternative Travel. The City will require new development, rebuilding, or retrofit to incorporate design features in their projects that encourage use of alternative modes of transportation such as transit, bicycling, and walking.

Policy T4.2: Creating Transportation Incentives. Through cooperation with other agencies, the City should create incentives to encourage travelers to use alternative transportation options.

Policy T4.3: Reducing Waiting Times. The City should encourage transit operators to reduce waiting times for users by coordinating schedules and maintaining intervals of fifteen (15) minutes or less between buses during daytime periods.

Policy T4.4: Developing Light Rail or Electric Trolley. The City supports the development of light rail or trolley bus along Regional Transit streets in high travel demand on corridors.

Policy T4.5: Preparing a Bicycle and Pedestrian Master Plan. The City should prepare, adopt, and implement a Bicycle and Pedestrian Master Plan as a part of the Transportation Element of [the] General Plan.

Policy T4.6: Making Transportation Accessible for Everyone. Alternative modes of transportation should be accessible for all of Oakland's population. Including the elderly, disable, and disadvantaged.

Policy T4.7: Reusing Abandoned Rail Lines. Where rail lines (including sidings and spurs) are to be abandoned, first consideration should be given to acquiring the line for transportation and recreational uses, such as bikeways, footpaths, or public transit.

Policy T6.1: Posting Maximum Speeds. Collector streets shall be posted at a maximum speed (usually a maximum speed of 25 miles per hour), except where a lower speed is dictated by safety and allowable by law.

Policy T6.2: Improving Streetscapes. The City should make major efforts to improve the visual quality of streetscapes. Design of the streetscape, particularly in neighborhoods and commercial

centers, should be pedestrian-oriented and include lighting, directional signs, trees, benches and other support facilities.

Policy T6.3: Making the Waterfront Accessible. The waterfront should be made accessible to the pedestrians and bicyclists in Oakland's neighborhoods.

Policy D3.2: Incorporating Parking Facilities. New parking facilities for cars and bicycles should be incorporated into the design of any project in a manner that encourages and promotes safe pedestrian activity.

Policy D10.6: Creating Infill Housing. Infill housing that respects surrounding development and the streetscape should be encouraged in the downtown to strengthen or create distinct districts.

Policy D11.1: Promoting Mixed-Use Development. Mixed use developments should be encouraged in the downtown for such purposes as to promote its diverse character, provide for needed goods and services, support local art and culture, and give incentive to reuse existing vacant or underutilized structures.

Policy N3.2: Encouraging Infill Development. In order to facilitate the construction of needed housing units, infill development that is consistent with the General Plan should take place throughout the City of Oakland.

Policy W12.4: Higher residential densities should be permitted in appropriate areas along the estuary where design and development intensity allows for the preservation of public views, vistas, open space, and waterfront access. Access to transportation corridors and transit should be promoted.

The LUTE also accounts for the air quality considerations of land use compatibility decisions with an objective to minimize land use compatibility conflicts (Objective I/C4) including the following policies:

Policy I/C4.1: Protecting Existing Activities. Existing industrial, residential, and commercial activities and areas which are consistent with long term land use plans for the City should be protected from the intrusion of potentially incompatible land uses.

Policy I/C4.2: Minimizing Nuisances. The potential for new or existing industrial or commercial uses, including seaport and airport activities, to create nuisance impacts on surrounding residential land uses should be minimized through appropriate siting and efficient implementation and enforcement of environmental and development controls. Where residential development would be located above commercial uses, parking garages, or any other uses with a potential to generate odors, the odor-generating use should be properly vented (e.g., located on rooftops) and designed (e.g., equipped with afterburners) so as to minimize the potential for nuisance odor problems.

Open Space, Conservation and Recreation Element. The City of Oakland General Plan Open Space, Conservation and Recreation (OSCAR) Element includes the following policies related to air quality:

Policy CO-12.1: Promote land use patterns and densities which help improve regional air quality conditions. The City supports efforts of the responsible public agencies to reduce air pollution.

Policy CO-12.2: Coordinated Transportation Systems. Maintain a coordinated bus, rail, and ferry transit system which provides efficient service to major destinations and promotes alternatives to the single passenger auto.

Policy CO-12.3: Transportation Systems Management. Expand existing transportation systems management and transportation demand management strategies which reduce congestion, vehicle idling, and travel in single passenger autos.

Policy CO-12.4: Require that development projects be designed in a manner which reduces potential adverse air quality impacts.

Policy CO-12.5: Use of Best Available Control Technology. Require new industry to use best available control technology to remove pollutants, including filtering, washing, or electrostatic treatment of emissions.

Policy CO-12.6: Control of Dust Emissions. Require construction, demolition, and grading practices which minimize dust emissions. These practices are currently required by the City and include the following:

- Avoiding earth moving and other major dust generating activities on windy days.
- Sprinkling unpaved construction areas with water during excavation, using reclaimed water where feasible (watering can reduce construction-related dust by 50 percent).
- Covering stockpiled sand, soil, and other particulates with a tarp to avoid blowing dust.
- Covering trucks hauling dirt and debris to reduce spills. If spills do occur, they should be swept up promptly before materials become airborne.
- Preparing a comprehensive dust control program for major construction in populated areas or adjacent to sensitive uses like hospitals and schools.
- Operating construction and earth-moving equipment, including trucks, to minimize exhaust emissions.

Policy CO-12.7: Regional Air Quality Planning. Coordinate local air quality planning efforts with other agencies, including adjoining cities and counties and the public agencies responsible for monitoring and improving air quality. Cooperate with regional agencies such as the BAAQMD, the MTC, the ABAG, and the Alameda County Congestion Management Agency in developing and implementing regional air quality strategies. Continue to work with BAAQMD and the California Air Resources Board in enforcing the provisions of the California and Federal Clean Air Acts, including the monitoring of air pollutants on a regular and on-going basis.

City of Oakland Municipal Code

Per the City of Oakland Municipal Code, Title 15 Buildings and Construction, Chapter 15.36 Demolition Permits, 15.36.100 Dust Control Measures.

"Best Management Practices" shall be used throughout all phases of work, including suspension of work, to alleviate or prevent fugitive dust nuisance and the discharge of smoke or any other air contaminants into the atmosphere in such quantity as will violate any city or regional air pollution control rules, regulations, ordinances, or statutes. Water or dust palliatives or combinations of both shall be applied continuously and in sufficient quantity during the performance of work and at other times as required. Dust nuisance shall also be abated by cleaning and sweeping or other means as necessary. A dust control plan may be required as condition of permit issuance or at other times as may be deemed necessary to assure compliance with this section. Failure to control effectively or abate fugitive dust nuisance or the discharge of smoke or any other air contaminants into the atmosphere may result in suspension or revocation of the permit, in addition to any other applicable enforcement actions or remedies. (Ord. 12152 § 1, 1999).

Green Building Ordinance

The Green Building Ordinance was adopted by the City of Oakland in 2005, in conjunction with the Sustainable Communities Initiative of 1998, in order to maintain high standards of green development and new construction throughout the City. This ordinance requires green performance in major civic projects and provides policies to assist private development projects in improving green performance.

In October of 2010, the city adopted the Green Building Ordinance for Private Development Projects. The ordinance affects a wide range of projects from new construction of single- and multi-family residential as well as non-residential projects, additions and alterations, modifications or demolition of historic resources, construction of affordable housing and mixed-use projects, as well as projects requiring a landscape plan. Projects that are affected based on defined thresholds in the ordinance include:

- Residential and non-residential new construction, additions and alterations;
- Removal of a historic resource and new construction;
- Historic residential and non-residential additions and alterations;
- Mixed use construction; and
- Construction requiring a landscape plan.

Certain types of projects are required to receive certification through a non-governmental green rating agency, including:

- All new residential construction and residential additions or alterations over 1,000 square feet, certified through Built It Green's GreenPoint Rated program.
- All new non-residential construction and non-residential additions or alterations.

In addition to Oakland's local Green Building Ordinance, the state of California recently adopted the new Green Building Code known as CALGreen (described above). Both the City's local ordinance and CALGreen are now in effect.

Standard Conditions of Approval

The City's Standard Conditions of Approval relevant to this environmental topic are listed below. These Standard Conditions of Approval would be adopted as mandatory requirements of each individual future project within the Planning Area when it is approved by the City and would ensure that significant impacts would not occur.

> **Supplemental SCA A: Construction-Related Air Pollution Controls for Dust and Equipment Emissions** (Ongoing throughout demolition, grading, and/or construction). During construction, the project applicant shall require the construction contractor to implement all of the following applicable measures recommended by the Bay Area Air Quality Management District (BAAQMD):
>
> BASIC (Applies to ALL construction sites)
>
> a. Water all exposed surfaces of active construction areas at least twice daily (using reclaimed water if possible). Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.
>
> b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).

c. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

d. Pave all roadways, driveways, sidewalks, etc. as soon as feasible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

e. Enclose, cover, water twice daily or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).

f. Limit vehicle speeds on unpaved roads to 15 miles per hour.

g. Idling times shall be minimized either by shutting equipment off when not is use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations. Clear signage to this effect shall be provided for construction workers at all access points.

h. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

i. Post a publicly visible sign that includes the contractor's name and telephone number to contact regarding dust complaints. When contacted, the contractor shall respond and take corrective action within 48 hours. The telephone numbers of contacts at the City and the BAAQMD shall also be visible. This information may be posted on other required on-site signage.

ENHANCED: All "Basic" controls listed above plus the following controls if the project involves:

i. 114 or more single-family dwelling units;

ii. 240 or more multi-family units;

iii. Nonresidential uses that exceed the applicable screening size listed in the Bay Area Air Quality Management District's CEQA Guidelines;

iv. Demolition permit;

v. Simultaneous occurrence of more than two construction phases (e.g., grading and building construction occurring simultaneously);

vi. Extensive site preparation (i.e., the construction site is four acres or more in size); or

vii. Extensive soil transport (i.e., 10,000 or more cubic yards of soil import/export).

j. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.

k. All excavation, grading, and demolition activities shall be suspended when average wind speeds exceed 20 mph.

l. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.

m. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more).

n. Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.

o. Install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of the construction site to minimize wind-blown dust. Wind breaks must have a maximum 50 percent air porosity.

p. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.

q. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.

r. All trucks and equipment, including tires, shall be washed off prior to leaving the site.

s. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.

t. Minimize the idling time of diesel-powered construction equipment to two minutes.

u. The project applicant shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate matter (PM) reduction compared to the most recent California Air Resources Board (CARB) fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as they become available.

v. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., BAAQMD Regulation 8, Rule 3: Architectural Coatings).

w. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NOx and PM.

x. Off-road heavy diesel engines shall meet the CARB's most recent certification standard.

The following condition applies to all projects that meet ALL of the following criteria:

1. The project involves either of the following sensitive land uses:
   - New residential facilities or new dwelling units; or
   - New or expanded schools, daycare centers, parks, nursing homes, or medical facilities; and
2. The project is located within 1,000' of one or more of the following sources of air pollution:
   - Freeway;
   - Roadway with significant traffic (at least 10,000 vehicles/day);
   - Rail line (except BART) with over 30 trains per day;
   - Distribution center that accommodates more than 100 trucks per day, more than 40 trucks with operating Transportation Refrigeration Units (TRU) per day, or where the TRU unit operations exceed 300 hours per week;
   - Major rail or truck yard (such as the Union Pacific rail yard adjacent to the Port of Oakland);
   - Ferry terminal;
   - Port of Oakland; or
   - Stationary pollutant source requiring a permit from BAAQMD (such as a diesel generator); and
3. The project exceeds the health risk screening criteria after a screening analysis is conducted in accordance with the Bay Area Air Quality Management (BAAQMD) CEQA Guidelines.]

SCA B: Exposure to Air Pollution (Toxic Air Contaminants)

a. Health Risk Reduction Measures. Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to exposure to toxic air contaminants. The project applicant shall choose one of the following methods:

   i. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with the California Air Resources Board (CARB) and the Office of Environmental Health and Hazard Assessment requirements to determine the health risk of exposure of project residents/occupants/users to air pollutants. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City.

   ii. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:

   - Installation of air filtration to reduce cancer risks and Particulate Matter (PM) exposure for residents, and other sensitive populations, in the project that are in close proximity to sources of air pollution. Air filter devices shall be rated MERV-13 or higher. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required.
   - Phasing of residential developments when proposed within 500 feet of freeways such that homes nearest the freeway are built last, if feasible.
   - The project shall be designed to locate sensitive receptors as far away as feasible from the source(s) of air pollution. Operable windows, balconies, and building air intakes shall be located as far away from these sources as feasible. If near a distribution center, residents shall not be located immediately adjacent to a loading dock or where trucks concentrate to deliver goods, if feasible.
   - Sensitive receptors shall not be located on the ground floor, if feasible.
   - Planting trees and/or vegetation between sensitive receptors and pollution source, if feasible. Trees that are best suited to trapping PM shall be planted, including one or more of the following: Pine (Pinus nigra var. maritima), Cypress (X Cupressocyparis leylandii), Hybrid popular (Populus deltoids X trichocarpa), and Redwood (Sequoia sempervirens).
   - Within the project site, sensitive receptors shall be located as far away from truck activity areas, such as loading docks and delivery areas, as feasible.
   - Within the project site, existing and new diesel generators shall meet CARB's Tier 4 emission standards, if feasible.
   - Within the project site, emissions from diesel trucks shall be reduced through implementing the following measures, if feasible:
     - Installing electrical hook-ups for diesel trucks at loading docks.
     - Requiring trucks to use Transportation Refrigeration Units (TRU) that meet Tier 4 emission standards.

- Requiring truck-intensive projects to use advanced exhaust technology (e.g., hybrid) or alternative fuels.
- Prohibiting trucks from idling for more than two minutes.
- Establishing truck routes to avoid sensitive receptors in the project. A truck route program, along with truck calming, parking, and delivery restrictions, shall be implemented.

When Required: Prior to approval of construction-related permit

Initial Approval: Planning and Zoning Division

Monitoring/Inspection: Building Services Division

b. Maintenance of Health Risk Reduction Measures - Requirement: The project applicant shall maintain, repair, and/or replace installed health risk reduction measures, including but not limited to the HVAC system (if applicable), on an ongoing and as-needed basis. Prior to occupancy, the project applicant shall prepare and then distribute to the building manager/operator an operation and maintenance manual for the HVAC system and filter including the maintenance and replacement schedule for the filter.

When Required: Ongoing

Initial Approval Authority: N/A

Monitoring/Inspection/Enforcement: Building Services Division

SCA 40: Asbestos Removal in Structures (*Prior to issuance of a demolition permit*). These Development Standards apply to projects with Asbestos in Structures. If asbestos-containing materials (ACM) are found to be present in building materials to be removed, demolition and disposal, the project applicant shall submit specifications signed by a certified asbestos consultant for the removal, encapsulation, or enclosure of the identified ACM in accordance with all applicable laws and regulations, including but not necessarily limited to: California Code of Regulations, Title 8; Business and Professions Code; Division 3; California Health & Safety Code 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended.

SCA 24: Parking and Transportation Demand Management (*Prior to issuance of a final inspection of the building permit*). These development standards apply to ALL projects involving 50 or more new residential units or 50,000 sq. ft. or more of new non-residential space. The applicant shall submit for review and approval by the Planning and Zoning Division a Transportation Demand Management (TDM) plan containing strategies to reduce on-site parking demand and single occupancy vehicle travel. The applicant shall implement the approved TDM plan. The TDM shall include strategies to increase bicycle, pedestrian, transit, and carpools/vanpool use. All four modes of travel shall be considered. Strategies to consider include the following:

a. Inclusion of additional bicycle parking, shower, and locker facilities that exceed the requirement

b. Construction of bike lanes per the Bicycle Master Plan; Priority Bikeway Projects

c. Signage and striping onsite to encourage bike safety

d. Installation of safety elements per the Pedestrian Master Plan (such as cross walk striping, curb ramps, count down signals, bulb outs, etc.) to encourage convenient crossing at arterials

e. Installation of amenities such as lighting, street trees, trash receptacles per the Pedestrian Master Plan and any applicable streetscape plan.

f. Direct transit sales or subsidized transit passes

g. Guaranteed ride home program

h. Pre-tax commuter benefits (checks)

i. On-site car-sharing program (such as City Car Share, Zip Car, etc.)

j. On-site carpooling program

k. Distribution of information concerning alternative transportation options

l. Parking spaces sold/leased separately

m. Parking management strategies; including attendant/valet parking and shared parking spaces

Port of Oakland Maritime Air Quality Policy, Maritime Air Quality Improvement Plan, and Comprehensive Truck Management Program

On March 18, 2008, the Port's Board of Port Commissioners approved a Maritime Air Quality Policy Statement. The air quality policy sets a goal of an 85 percent reduction from 2005 to 2020 in neighboring- community cancer health risks related to exposure to diesel particulate matter emissions from the Port's maritime operations through all practicable and feasible means. In April of 2009, the Port adopted its Maritime Air Quality Improvement Plan (MAQIP) which includes air quality goals and policies that cover all seaport-related development and operations at the Port. It specifically includes initiatives, programs and projects for achieving a reduction in DPM and criteria pollutants through targeted emission reductions and enforcement of regulations.

Subsequently on June 16, 2009, the Board adopted the Maritime Comprehensive Truck Management Program (CTMP), a MAQIP program. The CTMP was developed to comprehensively address security, air quality, business and operations, and community issues related to trucking operations at the Port's maritime facilities. CTMP measures to reduce diesel particulate matter emissions include enacting a ban on older, more-polluting trucks (2009), providing grants for diesel exhaust retrofits (2009-2010), and supporting initiatives to reduce idling (on-going).

Impacts and Mitigation Measures

Significance Criteria

CEQA requires the analysis of potential adverse effects of the project on the environment. Potential effects of the environment on the project are legally not required to be analyzed or mitigated under CEQA. However, this document nevertheless analyzes potential effects of the environment on the project in order to provide information to the public and decision-makers. Where a potential significant effect of the environment on the project is identified, the document, as appropriate, identifies City Standard Conditions of Approval and/or project-specific non-CEQA recommendations to address these issues."

The Project would have a significant impact on the environment if it would: [7]

Plan-Level Impacts

1. Fundamentally conflict with the Bay Area Clean Air Plan (CAP) because the projected rate of increase in vehicle miles traveled (VMT) or vehicle trips is greater than the projected rate of increase in population;

[7] The West Oakland Specific Plan is a long-term planning document that would modify land uses within the Plan Area. As such, the analysis included in this Chapter of the EIR evaluates air quality impacts, primarily based on "plan-level" thresholds. However, "project-level" effects are also discussed.

2. Fundamentally conflict with the CAP because the plan does not demonstrate reasonable efforts to implement control measures contained in the CAP; or
3. Not identify existing and planned sources of odors with policies to reduce potential odor impacts.

Project-Level Impacts

Except for impacts related to Toxic Air Contaminants (TACs) (threshold 8) and odors (threshold 9), air quality impacts are, by their nature, cumulative impacts because one project by itself cannot generate air pollution that would violate regional air quality standards. Thresholds 5 through 7 pertain to a project's contribution to cumulative impacts but are labeled "Project-Level Impacts" here to be consistent with the terminology used by BAAQMD.

4. During project construction result in average daily emissions of 54 pounds per day of ROG, NOx, or PM2.5 or 82 pounds per day of PM10;
5. During project operation result in average daily emissions of 54 pounds per day of ROG, NOx, or PM2.5 or 82 pounds per day of PM10; or result in maximum annual emissions of 10 tons per year of ROG, NOx, or PM2.5 or 15 tons per year of PM10;
6. Contribute to carbon monoxide (CO) concentrations exceeding the California Ambient Air Quality Standards (CAAQS) of nine parts per million (ppm) averaged over eight hours and 20 ppm for one hour [NOTE: Pursuant to BAAQMD CEQA Guidelines, localized CO concentrations should be estimated for projects in which (a) project-generated traffic would conflict with an applicable congestion management program established by the county congestion management agency or (b) project-generated traffic would increase traffic volumes at affected intersections to more than 44,000 vehicles per hour (or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited, such as tunnels, parking garages, bridge underpasses, natural or urban street canyons, and below-grade roadways). In Oakland, only the MacArthur Maze portion of Interstate 580 exceeds the 44,000 vehicles per hour screening criteria.];

Non-CEQA Considerations:

7. Not include special overlay zones containing goals, policies, and objectives to minimize potential Toxic Air Contaminant (TAC) impacts in areas located (a) near existing and planned sources of TACs and (b) within 500 feet of freeways and high-volume roadways containing 100,000 or more average daily vehicle trips; or
8. During either project construction or project operation expose persons by siting a new source or a new sensitive receptor to substantial levels of Toxic Air Contaminants (TACs) resulting in (a) a cancer risk level greater than 10 in one million, (b) a non-cancer risk (chronic or acute) hazard index greater than 1.0, or (c) an increase of annual average PM2.5 of greater than 0.3 micrograms per cubic meter [NOTE: Pursuant to the BAAQMD CEQA Guidelines, when siting new TAC sources consider receptors located within 1,000 feet, and when siting new sensitive receptors consider TAC sources located within 1,000 feet including, but not limited to, stationary sources, freeways, major roadways (10,000 or greater vehicles per day), truck distribution centers, ports, and rail lines. For this threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers.] or;
9. Frequently and for a substantial duration, create or expose sensitive receptors to substantial objectionable odors affecting a substantial number of people [NOTE: For this threshold, sensitive

receptors include residential uses, schools, daycare centers, nursing homes, and medical centers (but not parks)].

10. During either project operation or project construction expose persons, by siting a new source or a new sensitive receptor, to substantial levels of TACs resulting in (a) a cancer risk level greater than 100 in a million, (b) a non-cancer risk (chronic or acute) hazard index greater than 10.0, or (c) annual average PM2.5 of greater than 0.8 micrograms per cubic meter [NOTE: The cumulative analysis should consider the combined risk from all existing and reasonably foreseeable future sources].

Methodology

Plan Level Assessment

Characterizing operational impacts of a Plan depends on consistency with the most recently adopted CAP. To determine consistency with the CAP, the proposed Plan must incorporate current air quality plan control measures as appropriate to the Plan Area, and the rate of increase in vehicle miles travelled (VMTs) or vehicle trips within the Plan Area (either measure may be used) must be less than the rate of increase in population within the Plan Area. To determine whether growth in the West Oakland Plan Area would conflict with regional growth expectations set forth in the CAP, this air quality analysis summarizes the potential changes in transportation demand and population in the West Oakland Planning Area. Existing VMT, vehicle trips, and population in the Plan Area were compared to forecasts for these same factors under full implementation of the West Oakland Specific Plan.

Project-Level Assessment

As noted above in "Project-Level impacts," thresholds determine if individual project would generate significant levels of construction-period and operational period criteria pollutants and/or toxic air contaminants, and if significant localized carbon monoxide (CO) impacts would occur from new development. The analysis below uses these thresholds to determine if new development pursuant to the Plan may result in significant project-level impacts in order to provide more information about potential air quality-related impacts and to provide CEQA clearance for future projects that are consistent with the Plan and this EIR, pursuant to CEQA Guidelines sections 15183, 15162 through 15164, and 15168.

Non-CEQA Assessment

The BAAQMD guidelines recommend that a proposed General Plan or other area plans include recommendations for special overlay zones to be established around existing and proposed toxic air contaminant sources to protect sensitive populations. The most conservative project-level threshold for siting a new receptor, such as residential units, is to create a 'Zone of Influence' of 1,000 feet from a source of air quality risk or hazards. Many locations within the West Oakland Planning Area are within 1,000 feet of a freeway or active rail lines that are sources of TAC and potential air quality risk or hazards. This EIR includes a non-CEQA based disclosure and discussion of these effects of the existing ambient environment on subsequent development pursuant to the Plan.

Plan Level Impacts

CAP Consistency: Increased Vehicle Miles Travelled versus Increased Population

Impact Air-1: Development facilitated by the proposed Specific Plan would not fundamentally conflict with the Bay Area 2010 CAP because the projected rate of increase in vehicle miles travelled and vehicle trips would be less than the projected rate of increase in population. (**LTS**)

While the Specific Plan itself would not result in any direct physical changes, future development facilitated by the West Oakland Specific Plan would include new residential, industrial, commercial, and other land uses. Future foreseeable development would add new residential housing units as well as increased development of other land uses that would increase West Oakland employment. Demolition, construction, and operation or occupancy of this future development would result in increased mobile and area source emissions from individual projects. Future development within the Planning Area would be subject to the City's Standard Conditions of Approval, thereby minimizing the emissions and air quality impacts related to the development of individual projects.

Characterizing the air quality impacts of the West Oakland Specific Plan depends on a comparison of growth expectations under the CAP. The BAAQMD recommends that proposed plans be evaluated to determine if growth foreseeable under that plan would result in projected increases in VMT or vehicle trips (either measure may be used) is less than or equal to its projected population increase. If so, then the plan would be considered to have a less-than-significant impact on criteria air pollutants and precursor emissions.

The Specific Plan's allowable increase in Plan Area growth would not conflict with regional growth expectations set forth in the CAP. The potential changes in transportation demand as expressed through vehicles miles travelled (VMT) would not outpace population growth in the Plan Area. Growth in Plan Area emissions would be within the projections of the CAP because growth within the Plan Area would occur under policies encouraging use of transit, alternative transportation modes, and sustainable development patterns, which reduce transportation demand. **Table 4.2-7**summarizesthe existing VMTs and vehicle trips resulting from current land uses in the West Oakland Plan Area and the VMTs and vehicle trips resulting from future development facilitated by the Specific Plan.

Table 4.2-7: Transportation Demand and Population Added with Foreseeable Growth

	Attributable to Existing Land Uses in Plan Area	Added by Foreseeable Growth Pursuant to Plan	Rate of Increase
Vehicle Miles Traveled			
AM Peak [1]	31,766	33,069	
PM Peak [2]	38,679	39,642	**103%**
Daily [3]	352,075	363,000	**103%**
Vehicle Trips (PM Peak Hour) [4]			
Trips from Plan Area:	3,847	3,853	
Trips to Plan Area:	2,914	2,190	
Trips within Plan Area	+263	+655	
Total PM Peak Trips	7,025	6,698	**95%**
Population [5]			
Residents	640	11,136	
Employees	+9,770	+14,850	
Total	**10,410**	**25,986**	**250%**

Notes:

1 and 2: VMTs for AM and PM peak period provided by Kittleson, 3/7/13 and are consistent with the Traffic chapter of this EIR

3. Daily VMTs derived from the average of the AM and PM peak VMTs provided by Kittleson, times a factor of 10 to derive daily

4. All trip generation numbers presented are "worst-case" PM peak hour trips provided by Kittleson and are consistent with the Traffic chapter of this EIR

5. Population and employment numbers as presented in Chapter 4.8: Population and Employment of this EIR

Lamphier-Gregory, 2013.

As shown in Table 4.2-7, the projected population increase (combined residents and employees) in West Oakland that is attributable to new growth and development pursuant to the Specific Plan represents a growth rate of approximately 250%. This projected population growth rate greatly exceeds the projected increase in both PM peak and daily vehicles miles travelled (VMTs) which are 102% and 103%, respectively and also substantially exceeds the projected increase in PM peak hour vehicle trips (at about a 95% increase). Based on these comparisons, the Specific Plan is consistent with the CAP; the projected increase in VMTs and vehicle trips would grow at a lesser rate than the West Oakland Plan Area's service population. This means that the rate of projected growth in the Plan Area would be consistent with the CAP, and this impact would be less than significant.

Mitigation Measures

None needed

CAP Consistency: Implementation of Control Measures

Impact Air-2: Implementation of the West Oakland Specific Plan would not fundamentally conflict with the CAP because the Specific Plan demonstrates reasonable efforts to implement control measures contained in the CAP. (**LTS**)

CAP Overview

On September 15, 2010, the Air District (BAAQMD) Board of Directors adopted the final Bay Area 2010 Clean Air Plan (CAP) and certified the Final Environmental Impact Report on the CAP. The 2010 CAP serves to update the Bay Area Ozone Plan in compliance with the requirements of Chapter 10 of the California Health & Safety Code. In addition, the 2010 CAP provides an integrated, multi-pollutant strategy to improve air quality, protect public health, and protect the climate. As indicated in the Executive Summary to the 2010 Clean Air Plan;[8]

> "The Bay Area 2010 Clean Air Plan (CAP) provides a comprehensive plan to improve Bay Area air quality and protect public health. The 2010 CAP has been prepared in close collaboration with the Air District's regional agency partners, and has been informed by extensive outreach to the public and interested stakeholders. The CAP defines a control strategy that the Air District and its partners will implement to: (1) reduce emissions and decrease ambient concentrations of harmful pollutants; (2) safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily impacted by air pollution; and (3) reduce greenhouse gas (GHG) emissions to protect the climate.
>
> The Bay Area was recently designated as non-attainment for the national 24-hour fine particulate matter (PM2.5) standard, and will be required to prepare a PM2.5 State Implementation Plan (SIP) pursuant to federal air quality guidelines by December 2012. The 2010 CAP is not a SIP document and does not respond to federal requirements for PM2.5 or ozone planning. However, in anticipation of future PM2.5 planning requirements, the CAP control strategy also aims to reduce PM emissions and concentrations. In addition, U.S. EPA is currently reevaluating national ozone standards, and is likely to tighten those standards in the near future. The control measures in the CAP will also help in the Bay Area's continuing effort to attain national ozone standards.
>
> In addition to updating the Bay Area's state ozone plan, the 2010 CAP will also serve as a multi-pollutant plan to protect public health and the climate. This effort to develop its first-ever multi-pollutant air quality plan is a voluntary initiative by the Air District. The Air District believes that an integrated and comprehensive approach to planning is critical to respond to air quality and climate protection challenges in the years ahead. In its dual roles as an update to our state ozone plan and a multi-pollutant plan, the 2010 CAP addresses four categories of pollutants:
>
> - Ground-level ozone and its key precursors, ROG and NOx;
> - Particulate matter: primary PM2.5, as well as precursors to secondary PM2.5;
> - Air toxics; and
> - Greenhouse gases.

[8] Accessed at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Plans/2010%20Clean%20Air%20Plan/Executive%20Summary%20of%20Bay%20Area%202010%20CAP.ashx

> The major purpose for developing a multi-pollutant plan is to achieve the greatest possible public health benefit by reducing emissions, ambient concentrations, and public exposure across the four categories of air pollutants addressed in the 2010 CAP. In developing the CAP control strategy, the Air District has attempted to maximize co-benefits, while at the same time minimizing any potential trade-offs among pollutants.
>
> The 2010 CAP control strategy includes revised, updated, and new measures in the three traditional control measure categories: Stationary Source Measures, Mobile Source Measures, and Transportation Control Measures. In addition, the CAP identifies two new categories of control measures: Land Use and Local Impact Measures, and Energy and Climate Measures. The control strategy proposes a total of 55 control measures, including 18 Stationary Source Measures, 10 Mobile Source Measures;17 Transportation Control Measures; 6 Land Use and Local Impact Measures; and 4 Energy and Climate Measures."

Stationary Source Measures

Stationary Source Measures (SSMs) are measures that the Air District adopts and enforces pursuant to its authority to control emissions from stationary sources of air pollution such as manufacturing facilities, refineries, dry cleaners, auto body shops, gas stations, etc. A total of 18 SSMs are proposed in the 2010 CAP control strategy to enhance the Air District's regulatory program and ensure that the Bay Area remains in the forefront in controlling emissions from stationary sources. The proposed SSMs will provide reductions in emissions of ozone precursors, direct PM and PM precursors, air toxics, and greenhouse gases.

The West Oakland Specific Plan would not fundamentally conflict with the CAP's Stationary Source Measures. All new development pursuant to the Specific Plan, including new industrial and commercial uses, would be required to comply with all measures that the Air District adopts and enforces to control emissions from stationary sources of air pollution.

Mobile Source Measures

Mobile Source Measures (MSMs) are measures that reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment through programs such as the Air District's Vehicle Buy-Back and Smoking Vehicle Programs, and promoting advanced technology vehicles that reduce emissions of criteria pollutants and/or greenhouse gases. Since CARB is responsible for establishing statewide motor vehicle emissions standards and fuel specifications, implementation of the 10 MSMs relies heavily upon incentive programs, such as the Carl Moyer Program and the Transportation Fund for Clean Air, to achieve voluntary emission reductions in advance of, or in addition to, CARB requirements.

The West Oakland Specific Plan would not fundamentally conflict with the CAP's Mobile Source Measures. The Specific Plan does not contain any policies or strategies that would be contrary to incentive programs to achieve voluntary emission reductions from mobile sources.

Transportation Control Measures

Transportation Control Measures (TCMs) are strategies to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions. The draft Control Strategy includes 17 TCMs to improve transit service; encourage walking, bicycling, and transit use; improve efficiency of the regional transit and roadway systems; support focused growth; and develop and implement pricing strategies. The TCMs are organized into five categories:

- improving transit services

- improving system efficiency
- encouraging sustainable travel behavior
- supporting focused growth, and
- implementing pricing strategies.

New TCMs have been added to emphasize the importance of smart driving and the need to reduce high-speed driving; encourage parking policies that will help to reduce motor vehicle travel; and advocate that the Air District and its regional agency partners join forces to develop a regional transportation pricing strategy.

The West Oakland Specific Plan would not fundamentally conflict with, but instead would support the CAP's transportation control strategies. The Specific Plan strongly advocates for, and includes a step-by-step process (including a strategy to identify potential funding sources) for enhanced transit service within West Oakland. The Specific Plan also includes strategies for improving the efficiency of the existing transit system and to make it more convenient and accessible. The Specific Plan also promotes focused urban infill development within West Oakland, and specifically at the transit-oriented development site at the West Oakland BART station.

Land Use Measures

Land Use and Local Impacts Measures (LUMs) are a new category of measures designed to promote mixed use, compact development to reduce motor vehicle travel and emissions; and to ensure that we plan for focused growth in a way that protects people from exposure to air pollution from stationary and mobile sources of emissions. Building on the Air District's CARE program and Clean Air Communities Initiative, this component of the Control Strategy puts a special emphasis on the need to monitor and reduce population exposure to hazardous pollutants in communities that are most heavily impacted by emissions. The measures in this category draw upon the full range of tools available to the Air District, including rulemaking, notably development of a new indirect source review rule; revised CEQA guidelines and enhanced CEQA review by the Air District; working with local jurisdictions to encourage and assist them in developing Community Risk Reduction Plans to reduce population exposure to air toxics and PM; providing incentives to reduce emissions from heavy duty diesel equipment; targeted enforcement of CARB diesel control rules; land use guidance; and enhanced air quality monitoring.

The West Oakland Specific Plan would not fundamentally conflict with, but instead would support the CAP's land use measures. The Specific Plan strongly advocates for focused urban infill development within West Oakland, and specifically at the transit-oriented development site at the West Oakland BART station. The West Oakland BART station TOD is intended as a model of mixed use, compact development to reduce motor vehicle travel and emissions.

In some cases, CARB makes recommendations for specific buffer zones around certain types of TAC emitters of particular concern, as is the case for dry cleaners (500 feet) and chrome platers (1,000 feet). The BAAQMD Guidelines recommend special overlay zones containing goals, policies, and objectives to minimize potential TAC impacts in areas located within 1,000 feet of existing and planned TAC sources. As discussed in Impact AIR-5, residential development areas within the Plan Area are within areas of concern from the TAC emissions from one or more stationary TAC sources, from high volumes of vehicle traffic on I-880, I980 and I-580, and from rail yards, trucking distribution facilities or major port activities.

While the Specific Plan would result in an increase in the population exposure to hazardous pollutants within a community that is heavily impacted by TAC emissions (primarily form truck traffic on the I-880 freeway), both the Plan and this EIR include mitigation measures to substantially reduce this exposure in

new development projects. The City's SCA B, Exposure to Air Pollution (Toxic Air Contaminants), would apply to residential development located near sources of PM2.5 and DPM and within 1,000 feet of stationary and mobile sources of TACs. In accordance with the BAAQMD Guidelines, when a residential development project is proposed within 1,000 feet of a stationary TAC source, the potential health risk to the project residents would be evaluated using the BAAQMD's recommended screening criteria. If the project were to exceed the screening criteria a project-specific HRA would be prepared to quantify the project-specific health risk; this requirement is incorporated in SCA B. Adoption and development under the Specific Plan would be required to implement any project-specific recommendations to reduce the potential health risk.

Recommendations may include having the future project applicant install, operate and maintain a central heating and ventilation (HV) system or other air take system in the building or in each individual residential unit, that meets or exceeds an efficiency standard of MERV 13; using HEPA filters; or using ASHRAE 85% supply filters. Therefore, SCA B functions as an overlay zone with specific requirements to reduce exposure to TACs and reduce related TAC impacts. Because SCA B would be incorporated as part of the Specific Plan, adopted as a condition of approval, and required, as applicable, of the development under the Specific Plan, the impact would be less-than-significant.

The Specific Plan also supports other on-going efforts by the City, the Port of Oakland and others to reduce TAC emissions currently affecting the broader West Oakland community.

Energy and Climate Measures

Energy and Climate Measures (ECMs) are a new category of measures designed to reduce ambient concentrations of criteria pollutants, reduce emissions of CO2, and protect our climate by:

- Promoting energy conservation and energy efficiency in homes, schools, and commercial and industrial buildings;
- Promoting renewable forms of energy production, such as solar panels and solar thermal;
- Reducing "urban heat island" effects by increasing reflectivity of roofs and parking lots, in order to decrease energy consumption by air conditioning, reduce evaporative emissions from motor vehicles, and help offset temperature increases associated with global warming; and
- Promoting the planting of (low-VOC emitting) trees in order to reduce biogenic emissions from trees, lower air temperatures, provide shading to reduce energy use, and absorb CO2 and other air pollutants.

The West Oakland Specific Plan would not fundamentally conflict with the CAP's energy and climate measures. All new development pursuant to the Specific Plan would be required to comply with City of Oakland Standard Conditions of Approval which seeks to reduce energy use in new development projects. Strategies included in the Specific Plan also support voluntary employer-based trip reduction programs, improve bicycle access and facilities, improve arterial traffic management, improve pedestrian access and facilities, and promote traffic calming measures

Conclusions

In summary, the West Oakland Specific Plan would not interfere with implementation of Clean Air Plan control measures.

Mitigation Measures

None needed

Odors

Air-3: Odor Impacts. Development in accordance with the Specific Plan could expose a substantial number of new people to existing and new objectionable odors. (**SU**)

Potential effects of the environment on a project are legally not required to be analyzed or mitigated under CEQA. This EIR nevertheless analyzes potential effects of the environment on the project (i.e. siting new receptors near existing and potential new odor sources) in order to provide information to the public and decision-makers. Where a potential significant effect of the environment on the project is identified, the document, as appropriate, identifies City Standard Conditions of Approval and/or project-specific recommendations to address these issues.

EBMUD Wastewater Treatment Plan Odors

The East Bay Municipal Utility District (EBMUD) Main Wastewater Treatment Plant (WWTP) is located west of West Oakland, within a triangular area formed by Grand Avenue and the I-80, I-580, and I-880 freeways. Odors from the WWTP are usually caused by gases produced when organic matter decomposes. The most typical odor is hydrogen sulfide. Weather conditions that persist along the coast during summer are primarily a northwest air flow and negligible precipitation. A low pressure area over the interior of California, caused by heating near the surface, helps to draw the northwesterly flow on-shore over the Bay Area for much of the summer. These onshore winds, or sea breezes, turn westerly as the flow enters through the Golden Gate. As a result of this weather pattern, summer breeze conditions tend to carry air from over the EBMUD WWTP across West Oakland, carrying odors in the air along.

According to the West Oakland Redevelopment Plan EIR, there had been no odor complaints filed for this facility over the period from 1999-2002. BAAQMD public records for the last five years indicate that five odor complaints related to the MWWTP facility were received and three were confirmed by BAAQMD. According to EMBUD documents, the District received no complaints in 2004, 4 complaints in 2005, up to 36 complaints in 2006 and as many as 62 logged odor complaints in 2007. The increase in odor complaints was likely due to several factors, including residential development along the WWTP's eastern fence line (i.e., West End Commons condominiums), and the addition of a processing facility and receiving station, also near the WWTP's eastern fence line.

In 2006, EBMUD constructed a new grit removal facility, significantly reducing odors from this part of the treatment process. In July 2007, EBMUD removed the facilities causing most of the odors along the plant's eastern fence line, which is nearest local businesses and residents. EBMUD has also added new equipment designed to collect and treat foul air from different parts of the plant using air filters (activated carbon and bio-filters). Additionally, in 2008 EBMUD completed a comprehensive, facility-wide Odor Control Master Plan to help evaluate current odor control practices and to plan future odor control improvements at the plant. The Odor Control Plan was developed based on an intensive plant-wide odor sampling effort in 2008, and includes phased implementation of additional near-term and long-term improvements to upgrade and improve the odor control systems at the plant.

The 2011 EIR for EBMUDs' Main Wastewater Treatment Plant Land Use Master Plan found that the Master Plan project would upgrade odor control facilities to address community concerns and respond to regulatory requirements, and expected that project would reduce odors and have beneficial impacts to the community and air quality. The potential for odors was also addressed through an EBMUD EIR mitigation measure requiring that all short- and long-term EBMUD Land Use Master Plan projects be reviewed for odor potential during the design phase, and that operational and design odor control

measures be incorporated into the project to minimize off-site odor impacts and ensure compliance with BAAQMD air permit fence line monitoring limits. [9]

Despite these measures, odors from the EBMUD WWTP are unlikely to be fully prevented. Additionally, since a large portion of the West Oakland Planning Area is within the BAAQMD-recommended two mile buffer zone of the EBMUD Waste Treatment Facility, the Specific Plan would expose a substantial number of new people to existing objectionable odors.

Other Existing Odor Sources

All new Opportunity Sites and Opportunity Areas identified in the Specific Plan are located less than 1 mile from a potential odor source such as a food processing facility, painting/coating operations, or green waste/recycling facilities. As indicated in the Housing Element EIR, nearly the entire City of Oakland, and all of the West Oakland Specific Plan area, could be exposed to nuisance odor impacts due to potentially incompatible land uses. The City's Housing Element EIR concluded that odor sources currently present in all high density areas of the City could potentially expose future residences to substantial and frequent odors.

New Sources

Mixed use development in accordance with the Specific Plan could result in new food service uses (e.g., restaurants), painting facilities, coffee roasters, or dry cleaning facilities in close proximity or in the same building as residential or other odor-sensitive uses. Food service uses can generate odors as a result of cooking processes and waste disposal. Char broilers, deep fryers, and ovens tend to produce food odors that can be considered offensive to some people, and food waste can putrefy if not properly managed. The Specific Plan area contains numerous auto service uses, including auto body shops with paint spraying operations. Although controlled by BAAQMD permits and regulations, these types of uses can produce solvent type odors that may be objectionable. Without proper controls or setbacks, there is a potential for land use conflicts that could result in odor complaints.

Recommendations

Discretionary approvals within the Specific Plan area for food service (e.g., restaurants, coffee roasters) or other odor generating uses located in close proximity to or in the same building as residential or other odor sensitive should consider the following recommendations to reduce odors and potential conflicts and complaints:

- for restaurant or cooking uses, use of such devices as integral grease filtration or grease removal systems, baffle filters, electrostatic precipitators, water cooling/cleaning units, disposable pleated or bag filters, activated carbon filters, oxidizing pellet beds, and catalytic conversion, as well as proper packaging and frequency of food waste disposal, and exhaust stack and vent location with adequate consideration of nearby receptors; and
- for new residential dwellings within 300 feet of existing paint spraying operations (e.g. , auto body shops), cleaning operations (e.g. , dry cleaners), or other uses with the potential to cause odors, identification and adequate disclosure of potential odor impacts in notices to prospective buyers or tenants.

[9] EBMUD, Draft Environmental Impact Report, Main Wastewater Treatment Plant Land Use Master Plan, February 2011.

Resulting Level of Significance

There are no feasible plan policies or mitigation measures identified for reducing the impact of siting sensitive receptors near odor sources except for increasing the distance between the receptor and the source. New residential development is proposed under the West Oakland Specific Plan within the recommended odor buffer of numerous existing sources. Therefore, implementation of the Plan is assumed to result in a **significant and unavoidable** expose of future residences to substantial and frequent odor impacts.

Project-Level Impacts

Construction Period Fugitive Dust

Impact Air-4: During construction, individual development projects pursuant to the Specific Plan will generate fugitive dust from demolition, grading, hauling and construction activities. Fugitive dust will be effectively reduced to a level of less than significant with implementation of required City of Oakland Standard Conditions of Approval. (**LTS with SCA**)

Project-related construction activities including demolition, site preparation, earthmoving and general construction activities would generate short-term emissions of fugitive dust. Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and PM_{10} and $PM_{2.5}$ concentrations may be adversely affected on a temporary and intermittent basis. In addition, the fugitive dust generated by construction would include larger particles that would fall out of the atmosphere within several hundred feet of the site and could result in nuisance-type impacts.

Standard Conditions of Approval

The City of Oakland considers implementation of effective and comprehensive dust control measures (Best Management Practices) recommended by the BAAQMD as the threshold of significance for fugitive dust emissions (both PM_{10} and $PM_{2.5}$); if a project complies with specified dust control measures, it would not result in a significant impact related to construction period dust emissions. In order to be protective of the health of nearby residences as well as to reduce dust emissions that could affect regional air quality, all future development pursuant to the Specific Plan is required to implement BAAQMD recommended construction period dust control measures pursuant to the City's Standard Conditions of Approval, and to comply with the requirements found under the City Municipal Code (Section 15.36.100; Dust Control Measures). These measures include both "Basic" and "Enhanced" measures for the Project since the Project meets several of the criteria for enhanced measures. The City's Standard Conditions of Approval Supplemental SCA A is consistent with both the "Basic" and "Enhanced" measures recommended by the BAAQMD.

Furthermore, to reduce the potential for asbestos-laden dust emissions, the Project is required to implement SCA 40 which requires certified asbestos removal, encapsulation, or enclosure of any identified asbestos containing materials in accordance with all applicable laws and regulations, including but not necessarily limited to those of the California Code of Regulations, the California Health & Safety Code and the Bay Area Air Quality Management District's regulations and rules.

Resulting Level of Significance

Implementation of these standard conditions of approval would ensure that the impact of construction-period fugitive dust remains at a less than significant level.

Construction Period Criteria Emissions

Impact Air-5: During construction, individual development projects pursuant to the Specific Plan will generate regional ozone precursor emissions and regional particulate matter emissions from construction equipment exhaust. For most individual development projects, construction emissions will be effectively reduced to a level of less than significant with implementation of required City of Oakland Standard Conditions of Approval. However, larger individual construction projects could generate emissions of criteria air pollutants that would exceed the City's thresholds of significance. (**conservatively estimated as SU**)

Construction activities at individual development sites pursuant to the Specific Plan will include demolition, site preparation, earthmoving and general construction activities which will generate short-term emissions of criteria pollutants, including suspended and inhalable particulate matter and equipment exhaust emissions. Emissions generated from these activities will include particulate matter that are 10 microns or less in diameter (PM_{10}) and particles that are less than 2.5 microns in diameter ($PM_{2.5}$), combustion emissions of criteria pollutants (ROG, NO_x, CO, SO_x and PM_{10}) from operation of construction equipment and from worker vehicles, and evaporative emissions (ROG) from asphalt paving and architectural coating applications. Together, these emissions are known as criteria pollutants.

The City's significance thresholds consider construction emissions, even though temporary, to result in a significant impact if daily maximum emissions of construction-related criteria air pollutants or precursors would exceed 54 pounds per day of ROG, NO_x and $PM_{2.5}$, or 82 pounds per day of PM_{10} (with the PM values linked to construction exhaust emissions only, exclusive of fugitive dust).

Quantification of construction-period emissions has not been conducted because of the high number of variables needed to accurately model emissions, and the unknown nature of these variables. For example, each individual development project will be constructed pursuant to its own unique construction schedule, some individual projects will include demolition and debris hauling whereas other projects will not, the extent of excavation will vary widely between projects, and the types of architectural coatings and paving requirements will vary between each development site. Furthermore, because the threshold of significance is based on pounds per day of construction emissions, it is unknown how many constructions projects may be occurring simultaneously on any given day.

Standard Conditions of Approval

All future development projects pursuant to the Specific Plan would be subject to basic construction control measures through implementation of the City's Standard Conditions of Approval Supplemental **SCA A**, including but not limited to:

- Minimize the idling time of diesel-powered construction equipment to two minutes;
- Demonstrating that the off-road equipment to be used in the construction project would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate matter (PM) reduction compared to the most recent California Air Resources Board (CARB) fleet average;

- Ensuring that all construction equipment, diesel trucks, and generators are equipped with Best Available Control Technology for emission reductions of NOx and PM, and that off-road heavy diesel engines shall meet the CARB's most recent certification standard; and
- Using low volatile organic compound coatings that are more stringent than local requirements (i.e., BAAQMD Regulation 8, Rule 3: Architectural Coatings).

These standard conditions of approval will be incorporated as requirements of each individual project, and will reduce construction-period emissions over emission levels that would otherwise occur. However, depending upon the size of each individual construction project, the precise equipment used during the construction phase, and a wide range of other meteorological criteria, individual development project could exceed the City's thresholds of significance for construction-period emissions on a project-by-project basis.

Without modeling each individual development project pursuant to the Specific Plan, it is not possible to assess whether its construction emissions would exceed the City threshold. However, BAAQMD screening criteria indicates that if all of the following criteria are met, an individual construction project would be unlikely to result in a significant impact from criteria air pollutant and precursor emissions:

- The project does not exceed the following sizes:
  - 114 single-family homes, 240 units in a mid-rise apartment, or 252 units in a high-rise apartment or condo;
  - 277,000 square feet of commercial retail or office space,
  - 259,000 square feet or 540 employees within a light- or heavy- industrial building of industrial park.
- All Basic construction mitigation measures would be included in the project design and implemented during construction pursuant to Supplemental SCA A; and
- Construction-related activities would not include any of the following: a) demolition; b) simultaneous occurrence of more than two construction phases; c) simultaneous construction of more than one land use type (not applicable to high density infill development); d) extensive site preparation for grading, cut/fill, or earth movement); or e) extensive material transport (e.g., greater than 10,000 cubic yards of soil import/export) requiring a considerable amount of haul truck activity.

However, those construction projects that cannot meet these criteria may result in construction-period emissions exceeding City threshold levels for individual project-level effects.

Mitigation Measures

No additional measures are identified

Resulting Level of Significance

Large construction projects are likely to occur pursuant to the Specific Plan, and implementation of SCAs may not be fully capable of reducing criteria pollutants during construction. In particular, it cannot reliably be assumed that ROG emissions from application of architectural coatings would be reduced to 54 pounds per day or less. Therefore, this impact is conservatively considered to be **significant and unavoidable**.

Construction-Period TAC Emissions

Impact Air-6: During construction, individual development projects pursuant to the Specific Plan will generate construction-related toxic air contaminant (TAC) emissions from fuel-combusting construction equipment and mobile sources that could exceed thresholds for cancer risk, chronic health index, acute health index or annual average PM2.5 concentration levels. These construction-related TAC emissions will be reduced to a less than significant level with implementation of required City of Oakland Standard Conditions of Approval (**LTS with SCA**).

Construction activities at individual development sites pursuant to the Specific Plan may generate construction-related toxic air contaminant (TAC) emissions from fuel-combusting construction equipment and mobile sources. Project construction activities would produce DPM and PM2.5 emissions due to exhaust emissions from equipment such as loaders, backhoes, and cranes, as well as haul truck trips. These emissions could result in elevated concentrations of DPM and $PM_{2.5}$ at nearby receptors (both new and existing residences).

Sensitive receptors in proximity to these emissions (generally within 200 meters) could be subject to increased cancer risk, chronic health problems and acute health risk. The potential health risk associated with each construction site is dependent upon a number of factors including ambient concentrations, hourly concentrations based in intake factors, cancer potency factors, and chronic and acute reference exposure levels. Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations.

Current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. This results in difficulties with producing accurate estimates of increased health risk. The specificity of detail necessary to conduct a health risk assessment is not available at the Plan stage.

Standard Conditions of Approval

Notwithstanding this lack of detail, SCA A would implement construction-related Best Management Practices to substantially reduce construction-related impacts to a **less-than-significant level**.

Operational-Related Criteria Air Pollutants

Impact Air-7: Once buildout of the Specific Plan is complete and all of the expected new development is fully occupied, new development pursuant to the Specific Plan will generate emissions of criteria pollutants (ROG, NO_x PM_{10} and $PM_{2.5}$) as a result of increased motor vehicle traffic and area source emissions. Traffic emissions combined with anticipated area source emissions would generate levels of criteria air pollutants that would exceed the City's project-level thresholds of significance. (**SU**)

The City's project-level thresholds of significance consider operational emission to result in a significant impact if the additional maximum operational emissions of criteria air pollutants would exceed 54 pounds per day or 10 tons per year of ROG, NO_x and $PM_{2.5}$, and/or 82 pounds per day or 15 tons per year of PM_{10}.

The URBEMIS computer program was used to calculate both the existing baseline criteria pollutant emissions generated by operation of existing uses within the Specific Plan's Opportunity Areas, and the criteria pollutant emissions generated by operations pursuant to buildout of the Specific Plan. For both of these scenarios, location factors related to the Project site have been included into the analysis. These factors include West Oakland's location in a higher-density urban environment with a broad mix of surrounding uses, the high degree of available transit, and the extent of sidewalks and bike paths provided within the Planning Area. The URBEMIS output sheets are included as **Appendix 4.2A**.

The maximum daily and total annual emissions of criteria pollutants (ROG, NO_x, PM_{10} and $PM_{2.5}$) generated at buildout of the Specific Plan operations are shown below in **Table 4.2-8**. From these projected future emissions, the current "baseline" emissions from existing uses within the Opportunity Areas of the Plan have been subtracted out, resulting in a net increase in criteria pollutants associated with buildout of the West Oakland Specific Plan. These net new increases in criteria pollutants are then compared to the City's significance thresholds to determine significance.

Table 4.2-8: Project Operational Emission Estimates at Buildout (assumed to be year 2035)

	Reactive Organic Gases	Nitrogen Oxides	PM_{10} (total)	$PM_{2.5}$ (total)
Daily Emissions (lbs/day)				
Operations (Vehicle Emissions)	354	277	2,006	380
Area Source Emissions	369	52	0.1	0.1
Total Regional Emissions	723	330	2,006	380
Less Baseline (Existing Operational Emissions)	-466	-486	-973	-186
Net Additional Area/Operational Emissions	257	-156	1,003	364
Significance Threshold	54	54	82	54
Exceed?	**Yes**	No	**Yes**	**Yes**
Annual Emissions (tons/yr)				
Operations (Vehicle Emissions)	98	12	18	17
Area Source Emissions	65	59	366	69
Total Regional Emissions	163	71	384	86
Less Baseline (Existing Operational Emissions)	-87	-102	-179	-35
Net Additional Area/Operational Emissions	76	-31	205	51
Significance Threshold	10	10	15	10
Exceed?	**Yes**	No	**Yes**	**Yes**

Source: Lamphier-Gregory, 2013

Emission factors are expected to decrease in the future owing to anticipated changes in federal and state regulations (including fuel standards), as well as increasing turnover of the regional vehicle fleet to more efficient, less polluting equipment. As can be seen in this table, even with decreased emission

factors, Specific Plan-related emissions would exceed the City's project-level thresholds of significance for ROG, PM_{10} and $PM_{2.5}$.

The Specific Plan represents an overall development strategy for West Oakland that is comprised of numerous individual projects being developed over an extended period of time, is not one individual project. Therefore, comparison of the Specific Plan's buildout to these project-level thresholds provides a conservative impact assessment. However, in aggregate, buildout of the entire development plan as envisioned under the Specific Plan would result in the total operational emissions presented in Table 4.2-8 above.

Each individual development project as envisioned under the Specific Plan will incrementally contribute to this overall total. Without modeling each individual development project pursuant to the Specific Plan, it is not possible to assess whether any one individual project pursuant to the Plan would exceed the City threshold on its own. However, an individual subsequent project pursuant to the Specific Plan would be unlikely to result in a significant impact due to the generation of criteria air pollutants and ozone precursor emissions if the subsequent project does not exceed the following sizes:

- 325 single-family homes, 494 units in a mid-rise apartment, or 510 units in a high-rise apartment or condo;
- between 42,000 and 100,000 square feet of retail commercial space,
- 346,000 square feet of general office space, or
- 540,000 square feet or 1,250 employees within a light-industrial building.

However, it is likely that certain individual projects pursuant to the Specific Plan may exceed these screening level size limitations. The impact of individual development projects pursuant to this Plan, as well as the aggregate of all development assumed pursuant to the Specific Plan, is conservatively considered to generate criteria air pollutants and ozone precursor emissions at a level that would be significant.

Standard Conditions of Approval

The City's Standard Condition of Approval **SCA 24**: **Parking and Traffic Management Plan** applies to all subsequent development projects involving 50 or more new residential units or 50,000 square feet or more of new non-residential space. This condition requires individual development projects to prepare and implement a Transportation Demand Management Plan capable of reducing single-occupant vehicle use at the site through a variety of strategies including enhancement and promotion of transit and other alternative modes of travel. Implementation of this Standard Condition of Approval would reduce criteria air pollutants and ozone precursor emissions from subsequent development projects, but may or may not be fully effective in reducing emissions to below threshold levels.

Mitigation Measures

None available

Resulting Level of Significance

Individual development projects, as well as the aggregate of all development assumed pursuant to the Specific Plan, is conservatively considered to generate criteria air pollutants and ozone precursor emissions at a level that would be **significant and unavoidable**.

Carbon Monoxide Concentrations

Impact Air-8: The Specific Plan would not exposure sensitive uses and would not generate emissions leading to significant concentrations of CO that would violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation. (**LTS**)

Regional ambient air quality monitoring data demonstrate that CO concentrations are well below federal and state standards, despite long-term upward trends in regional VMT. The potential for localized increases in air pollutant concentrations from increased traffic has been greatly reduced in recent years due to improvements in motor vehicle exhaust controls since the early 1990s and the use of oxygenated fuels.

While regional violations are no longer a concern in the area, emissions from land use development and the associated traffic at congested intersections can, under certain circumstances, cause a localized build-up of carbon monoxide concentrations. Preliminary screening indicates less than significant localized CO concentrations occur at intersections affected by fewer than 24,000 vehicles per hour.[10] Traffic modeling conducted for this EIR indicates that study intersections with the highest traffic volumes would not experience 24,000 vehicles per peak hour under 2035 scenarios with or without implementation of the Specific Plan. Because traffic levels are below screening levels, it can be concluded that the impact of the Specific Plan in relation to localized CO impacts would be less than significant.

Mitigation Measures

None required

Operational Toxic Air Emissions

Impact Air-9: Development pursuant to the West Oakland Specific Plan would include new light industrial, custom manufacturing and other similar land uses, as well as the introduction of new diesel generators that could emit toxic emissions. resulting in (a) a cancer risk level greater than 10 in one million, (b) a chronic or acute hazard index greater than 1.0, or (c) an increase of annual average PM2.5 concentration of greater than 0.3 micrograms per cubic meter; or under cumulative conditions, resulting in a) a cancer risk level greater than 100 in a million, b) a chronic or acute hazard index greater than 10.0, or c) annual average PM2.5 of greater than 0.8 micrograms per cubic meter. (**Conservatively Significant and Unavoidable**)

Adoption and development under the Specific Plan includes a variety of land use types including residential, retail and industrial uses. While there are no specific stationary sources of air pollution proposed, subsequent industrial land uses and/or other land uses requiring diesel (or back-up diesel) generators could be developed throughout each of the Opportunity Areas within the Plan Area.

Any such new potential stationary source of TACs within the West Oakland Planning Area would be subject to BAAQMD rules and regulations. BAAQMD Regulation 2, Rule 5 requires that new stationary sources meet applicable BAAQMD risk evaluation requirements to ensure that health risks associated with TAC emissions would be acceptable. Sources of air pollutant emissions complying with applicable BAAQMD permit requirements generally would not be considered to have an individual significant air quality impact. Stationary sources that are exempt from BAAQMD permit requirements due to low

[10] BAAQMD, 2011

emissions would also be considered to not have a significant air quality impact. Per its Policy and Procedure Manual, the BAAQMD would deny an Authority to Construct or would deny a Permit to Operate any new or modified source of TACs that exceeds a cancer risk of 10 in one million or a chronic or acute hazard index of 1.0.

Notwithstanding the permit restrictions of the BAAQMD, the potential exists for multiple new sources of TAC emissions to be developed within a single concentrated portion of the Plan Area. Given the existing elevated cancer risk contributions from existing localized sources in the Plan Area, the potential exists for multiple new sources, each with a cancer risk less than 10 in one million, to cumulatively increase cancer risks to greater than 100 in one million.

Standard Conditions of Approval

SCA B will be implemented for all new residential development within the Plan Area that could be exposed to locally generated risks greater than 100 in a million. However, this SCA does not apply to projects that may introduce new sources of TAC emissions that could impact existing or new receptors. Therefore, new project sources could result in a significant cumulative risk generation impact.

Mitigation Measures

Mitigation Measure AIR-9: Risk Reduction Plan. Applicants for projects that would include backup generators shall prepare and submit to the City, a Risk Reduction Plan for City review and approval. The applicant shall implement the approved plan. This Plan shall reduce cumulative localized cancer risks to the maximum feasible extent. The Risk Reduction Plan may contain, but is not limited to the following strategies:

a) Demonstration using screening analysis or a health risk assessment that project sources, when combined with local cancer risks from cumulative sources with 1,000 feet would be less than 100 in one million.

b) Installation of non-diesel fueled generators.

c) Installation of diesel generators with an EPA-certified Tier 4 engine or Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy.

Resulting Level of Significance after Mitigation

Clean diesel generators and other strategies of the Risk Reduction Plan would substantially reduce potential cancer risks associated with DPM. While the residual risk for a given emission source would be less than 10 in one million, the degree to which multiple sources, if concentrated on one area, would maintain cumulative risks to below 100 in one million cannot be assured. While SCA B would apply to new residential development, the impacts to existing receptors could potentially remain and with no options other than controlling the source or mitigating the receptor, this impact is conservatively identified as **significant and unavoidable**.

Exposure to Toxic Air Contaminants and $PM_{2.5}$

Air-10: Certain future development projects in accordance with the West Oakland Specific Plan (as specified below) could result in new sensitive receptors exposed to existing levels of toxic air contaminants (TACs) or concentrations of $PM_{2.5}$ that could result in increased cancer risk or other health hazards. (**SU**)

CEQA requires the analysis of potential adverse effects of a project on the environment. Potential effects of the environment on a project are legally not required to be analyzed or mitigated under CEQA. However, this EIR nevertheless analyzes potential effects of the environment on the project (i.e. siting new receptors near existing TAC sources) in order to provide information to the public and decision-makers. Where a potential significant effect of the environment on the project is identified, the document, as appropriate, identifies City Standard Conditions of Approval and/or project-specific recommendations to address these issues.

Thresholds used in this analysis consider the level of exposure of sensitive receptors to air pollutant levels that result in an unacceptable cancer risk or hazard. For cancer risk, which is a concern with diesel particulate matter and other mobile-source TACs, the thresholds considers an increased risk of contracting cancer that is 10 in one million chances or greater to be significant for a single source, and exposure to annual $PM_{2.5}$ concentrations that exceed 0.3 micrograms per cubic meter (ug/m3) to be significant.

The Specific Plan would facilitate the development of new land uses that serve sensitive receptors[11] in locations near freeways and other sources of TACs and/or $PM_{2.5}$. Screening modeling indicates that new sensitive receptors (residential uses) are proposed pursuant to the West Oakland Specific Plan at several locations with the potential to result in health risks to future residents due to nearby sources of toxic air contaminants (TACs) and concentrations of $PM_{2.5}$. Potential increased health risks have been identified at five specific locations as indicated in **Table 4.2-9**. Of the five locations, four sites are adjacent to the I-880 freeway and one site (at 12th and Mandela) is adjacent to a diesel engine located at a City of Oakland Environmental Services site and various industrial engines located at the California Cereal Products site. Each of these sites have increased cancer risk and increased health risks due to $PM_{2.5}$ concentrations except the site at 12th and Mandela, which would has an increased cancer risk due to toxic air contaminants (TACs) from stationary source, as shown in Table 4.2-9 below.

[11] Land uses that serve sensitive receptors include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential buildings. Sensitive receptors are children, people over 65 years of age and individuals that suffer from respiratory illnesses.

Table 4.2-9: Potential Areas of Concern for Toxic Air Contaminant and $PM_{2.5}$ Exposure

Area of Concern	Source	Increased Cancer Risk	Increased Health Risk from $PM_{2.5}$ Concentration
West Oakland BART TOD	I-880 Freeway	yes	yes
7th Street Corridor	I-880 Freeway, other stationary sources	yes	no
Phoenix Iron Works Site	I-880 Freeway, other stationary sources	yes	yes
Roadway Site	I-880 Freeway	yes	yes
12th and Mandela Site	City of Oakland Environmental Services, 1diesel engine at 14th& Mandela Parkway,	yes	no
	and California Cereal Products, various industrial sources at1267 14th Street1	no	yes

Source BAAQMD, DRAFT Report: Toxic Air Contaminants and PM2.5 Screening Analysis for the West Oakland Specific Plan

1. California Cereal Products sources: grain unloading and storage, grain cleaning and drying, milling systems, boiler engines, grain toaster/cooker, fluidizing cereal dryer, coated products dryer, and a Buhler OTW dryer.

West Oakland BART Station TOD

The West Oakland BART Station TOD site is located on several parcels immediately surrounding the West Oakland BART Station. The TOD development envisioned under the Specific Plan would include new residential development in tall, high density buildings that would step down in height from the I-880 freeway to the surrounding neighborhoods. This TOD is projected to contain as many as 2,300 new residential units, housing a population of as much as 5,320 people. Several parcels within the TOD development site are located immediately adjacent to the freeway, and other parcels along 7th Street are located approximately 500 feet from the freeway at their nearest point and slightly more than 1,000 feet from the freeway at their furthest point. Residential uses nearest to the freeway would be located atop a multi-story parking garage, and residential uses furthest from the freeway would be developed above ground floor retail and commercial space along 7th Street. High to medium-density residential use is consistent with the General Plan and zoning for these sites. Detailed designs for the West Oakland BART TOD project are not currently available or proposed.

According to the BAAQMD's Stationary Source Risk & Hazard Analysis Tool (Google Earth, Alameda County May 2012 data set),[12] each of these parcels are subject to emissions from the I-880 freeway that are indicated to result in a risk of contracting cancer. The level of this risk varies with distance from the freeway. New residential development located as near as 25 to 50 feet from the freeway at a height of 20 feet is indicated as subjecting future new residents to a risk of contracting cancer that is greater than 100 in one million. At 500 feet from the freeway, this risk is reduced to approximately 32 in one million, and at distances of as much as 1,000 feet at this location, the cancer risk is still as great as approximately 18 in one million. Each of these risk factors exceeds the threshold level of 10 in one million. Similarly, each of the parcels within the proposed TOD development site is subject to $PM_{2.5}$ concentrations that

[12] This tool contains cancer risk and $PM_{2.5}$ concentration at 6 feet (ground level) and 20 feet (2^{nd}story and above) at various distances from highways.

exceed the threshold of 0.3 ug/m^3. $PM_{2.5}$ concentrations, at a height of 20 feet, are indicated to be greater than 0.35 ug/m^3 at a distance of 200 feet from the freeway, and greater than 0.60 ug/m^3 at a distance of between 25 and 50 feet from the freeway. Both the cancer risk and the $PM_{2.5}$ concentrations at the West Oakland BART Station TOD site exceed threshold levels.

7th Street Mixed-Use Development

There are several locations along 7th Street between Mandela Parkway and Wood Street where additional new sensitive receptors (new housing development above ground floor retail) are proposed pursuant to the Specific Plan. Closer to Mandela, these mixed-use developments would be approximately 1,000 feet from the freeway. Nearer to Wood Street, these new uses would be as near as 600 feet from the freeway. Mixed use residential development with residential use above ground floor commercial space is consistent with the General Plan and zoning for these sites. The BAAQMD Stationary Source Risk & Hazard Analysis Tool indicates that these residential mixed use development sites are subject to emissions from the I-880 freeway, where cancer risk is projected to be approximately 18 in one million at 1,000 feet from the freeway, and approximately 32 in one million at 500 feet from the freeway. These parcels are also subject to $PM_{2.5}$ concentrations, but at levels of between 0.1 and 0.2 ug/m^3 at distances of between 1,000 feet and 500 feet. At these concentrations, the $PM_{2.5}$ threshold level would not be exceeded. Additionally, these residential mixed use development sites are located within 1,000 feet from known stationary source emissions associated with the US Postal Service vehicle maintenance facility located at 1675 7th Street. Stationary source emissions from this facility would be additive to the cancer and health risk associated with freeway emissions at these locations.

Phoenix Iron Works Site

New single-family and/or attached residential use is proposed pursuant to the Specific Plan on the westerly side of Wood Street between 8th Street and 9th Street, approximately 300 to 400 feet from the I-880 freeway. Residential development at this location is not currently consistent with the General Plan and zoning for this site, and a General Plan amendment and re-zoning would be required to permit new residential uses. The BAAQMD Stationary Source Risk & Hazard Analysis Tool indicates that this proposed new residential site is subject to emissions from the I-880 freeway that would result in a risk of contracting cancer that is approximately 22 to 28 in one million (at 300 to 400 feet, respectively). These risk factors exceed the threshold level of 10 in one million. $PM_{2.5}$ concentrations at this site would not exceed 0.3 ug/m^3, as this threshold concentration is limited to an area within approximately 100 feet from the freeway at this location. Additionally, this proposed residential site is located within 1,000 feet from known stationary source emissions associated with the California Waste Solutions' 10th Street facility located at 1820 10th Street. Stationary source emissions from this facility would be additive to the cancer risk associated with freeway emissions at this site.

Roadway Site

New residential use is also proposed pursuant to the Specific Plan at the parcels known as the Roadway site, generally located between 17th and 18th Streets and between Wood Street and Campbell Street, immediately across from Raimondi Park. This site is approximately 600 feet from the I-880 freeway at its nearest point and approximately 1,400 feet from the freeway at its furthest point. Residential development at this location is not currently consistent with the General Plan and zoning for this site, and a General Plan amendment and re-zoning would be required to permit new residential uses. According to the BAAQMD's Stationary Source Risk & Hazard Analysis Tool, this proposed residential site is subject to emissions from the I-880 freeway that are indicated to result in a risk of contracting cancer that is greater than 25 in one million at 600 feet, and would be greater than 18 in one million at 1,000

feet from the freeway. These risk factors exceed the threshold level of 10 in one million. $PM_{2.5}$ concentrations at this site would not exceed the 0.3 ug/m^3 threshold level, as this concentration level is limited to an area within approximately 100 feet from the freeway at this location.

12th and Mandela Site

New residential use is also proposed pursuant to the Specific Plan on the corner parcel at 12th and Mandela Parkway, across from the existing Peralta Villa residential neighborhood. Residential development at this location is not currently consistent with the General Plan and zoning for this site, and a General Plan amendment and re-zoning would be required to permit new residential uses. This site is not located in proximity to the I-880, I-980 or I-580 freeway, and emissions from the freeway would not have a significantly adverse effect. However, this site is located with 1,000 feet from known stationary source emissions from the City of Oakland Environmental Services Division's diesel generator, located at 14th and Mandela Parkway and from known stationary source emissions from various industrial sources associated with the California Cereal Products facilities at 1267 14th Street. These stationary sources could result in air quality emissions exceeding threshold levels.

Upper San Pablo Avenue

New residential uses are proposed pursuant to the Specific Plan along the San Pablo Avenue corridor, primarily as new mixed residential and commercial buildings. Such mixed residential use is consistent with the General Plan and zoning for this corridor. No sites along this corridor are located in proximity to the I-880, I-980 or I-580 freeway such that emissions from the freeway would have a significantly adverse effect. Based on the BAAQMD Stationary Source Risk & Hazard Analysis Tool, the risk of contracting cancer greater than 10 in one million is limited to an area of approximately 200 feet from the freeway at this location. $PM_{2.5}$ concentrations exceeding the 0.3 ug/m^3 threshold is limited to an area within approximately 75 feet from the freeway. No new sensitive receptors are proposed at locations this close to the freeway along San Pablo Avenue, nor are such uses proposed within 1,000 feet of known stationary sources at the existing ARCO and Shell gas stations near San Pablo Avenue and I-580.

Neither San Pablo Avenue nor any other surface roadways within the Specific Plan's planning area or its proximity present increased health risks, because the annual average daily travel volumes on these roadways are not high enough to create unsafe levels of TACs or $PM_{2.5}$ concentrations.

Other Considerations

The BAAQMD Stationary Source Risk & Hazard Analysis Tool used in this screening level analysis may not identify all of the air quality health risks associated with all sources within or nearby the Specific Plan area. The Port of Oakland, the former Oakland Army Base and the Union Pacific rail yard impact air quality within West Oakland, and these sources are not fully accounted for in the analysis tool. The combined cancer risks and $PM_{2.5}$ concentrations from I-880, the Port of Oakland, the former Oakland Army Base and the Union Pacific rail yard on existing and future sensitive receptors in West Oakland could be greater than any one source alone. In addition, sources that are not stationary, such as trucks idling at loading docks or temporary emissions from construction activities are also not reflected in this analysis. Further evaluation of such sources may be necessary on a project-specific basis pursuant to subsequent development projects.

Dry cleaners and emergency generators are located within West Oakland, but specific emissions or exposure information for these sources is not readily available. According to the CARB, dry cleaners may pose a significant cancer risk at distances of up to 300 feet. CARB regulations will phase out the use of

perchloroethylene by 2023, which would avoid future exposure. There are a number of emergency generators within or near West Oakland. However, BAAQMD and CARB regulations restrict operation of emergency generator engines to 50 hours or less per year for testing or routine maintenance. Emergency generators are estimated to pose a potentially significant cancer risk at distances of up to 100 feet.

Standard Conditions of Approval

Future development of residential use throughout the West Oakland Specific Plan area, particularly new residential development that may ultimately be proposed on those sites identified above, will be required to implement all City of Oakland Standard Conditions of Approval. Pursuant to Supplemental SCA B, applicants for future qualifying development projects may either incorporate health risk reduction measures into the project at that project's initiation, or may conduct site-specific health risk assessments using air quality dispersion modeling methodologies and screening thresholds recommended by the BAAQMD to demonstrate that, despite their location within the screening setback distances, modeled site-specific exposures would be less-than-significant. If detailed modeling does not demonstrate that exposure levels would be less-than-significant, then the project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:

- Installation of air filtration to reduce cancer risks and Particulate Matter (PM) exposure for residents, and other sensitive populations, in the project that are in close proximity to sources of air pollution. Air filter devices shall be rated MERV-13 or higher. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required.
- Phasing of residential developments when proposed within 500 feet of freeways such that homes nearest the freeway are built last, if feasible.
- The project shall be designed to locate sensitive receptors as far away as feasible from the source(s) of air pollution. Operable windows, balconies, and building air intakes shall be located as far away from these sources as feasible. If near a distribution center, residents shall not be located immediately adjacent to a loading dock or where trucks concentrate to deliver goods, if feasible.
- Sensitive receptors shall not be located on the ground floor, if feasible.
- Planting trees and/or vegetation between sensitive receptors and pollution source, if feasible. Trees that are best suited to trapping PM shall be planted, including one or more of the following: Pine (Pinus nigra var. maritima), Cypress (X Cupressocyparis leylandii), Hybrid popular (Populus deltoids X trichocarpa), and Redwood (Sequoia sempervirens).
- Within the project site, sensitive receptors shall be located as far away from truck activity areas, such as loading docks and delivery areas, as feasible.
- Within the project site, existing and new diesel generators shall meet CARB's Tier 4 emission standards, if feasible.
- Within the project site, emissions from diesel trucks shall be reduced through implementing the following measures, if feasible:
    - Installing electrical hook-ups for diesel trucks at loading docks.
    - Requiring trucks to use Transportation Refrigeration Units (TRU) that meet Tier 4 emission standards.

- Requiring truck-intensive projects to use advanced exhaust technology (e.g., hybrid) or alternative fuels.
- Prohibiting trucks from idling for more than two minutes.
- Establishing truck routes to avoid sensitive receptors in the project. A truck route program, along with truck calming, parking, and delivery restrictions, shall be implemented.

SCA B would implement the recommendations of both the California Air Resources Board (CARB) and the BAAQMD by requiring qualifying projects to prepare an HRA or incorporate project design features that reduce potential health risk due to exposure to TACs. Such design features (ranging from site layout considerations, landscaping, and interior air filtration systems) can improve interior air quality for sensitive receptors such that attendant health risks of DPM exposure can be reduced to an acceptable level. Qualifying projects are those that involve sensitive land uses, are located within 1,000 feet of a TAC source, and exceed the health risk screening criteria after a screening analysis is conducted in accordance with the BAAQMD CEQA Guidelines.

Distance is an important but not necessarily conclusive factor examined in the HRA to determine whether building residents would be exposed to excessive levels of TACs (both for DPM-borne and gaseous TACs) Other factors that must be taken into account include building orientation, intervening development, and wind patterns of proposed new development. The potential health risk would be determined by taking all of these factors into account and would quantify the project-specific health risk. The project would be required by SCA B to implement feasible measures that would reduce the potential health risk. These measures may include, but are not limited to site planning considerations, installation and use of air filtration systems, and inoperable windows in certain locations. Air filter devices shall be rated MERV-13 or higher. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required.

Resulting Level of Significance

Compliance with SCA B would reduce each site's exposure to DPM through the installation of air filtration systems (with 85 percent filtration efficiency) or other equivalent measures to reduce indoor DPM to acceptable levels. Impacts related to DPM-borne TACs would be **less than significant**, since SCA policies are sufficient to reduce the risk to acceptable levels.

However, for TACs originating from gaseous sources, implementation of SCA B cannot with certainty reduce risks to an acceptable level. While the site planning and filtration methods can capture/screen out airborne particulate matter, these methods do not reduce risks from gaseous TACs. There are no known feasible technologies or site planning considerations that have been shown to reduce risks of gaseous TACs. Therefore, impacts related to gaseous TACs would be **significant and unavoidable**, since SCA requirements are not sufficient to reduce the risk to acceptable levels.

Other Recommendations

In addition to the City of Oakland Standard Conditions of Approval cited above, the following recommendations could further reduce the exposure of new sensitive receptors to sources of TACs and $PM_{2.5}$:

Buffer Zones

According to the BAAQMD Stationary Source Risk & Hazard Analysis Tool used in this screening level analysis, future development intended for occupancy by sensitive receptors should be located at approximately 1,000 feet from the edge of the I-880 freeway, and approximately 200 feet from I-580 within the West Oakland planning area. Site-specific modeling of future development projects proposed within these distances may provide better, more site-specific data as a basis upon which this buffer distance may be reconsidered and reduced. Implementation of this buffer recommendation would effectively reduce the cancer risks and exposure to $PM_{2.5}$ concentrations of new sensitive receptors to levels of less than significant.

Implementation of such buffers would effectively reduce the cancer risks and exposure to $PM_{2.5}$ concentrations of new sensitive receptors, and would be capable of reducing this impact to below BAAQMD threshold levels. However, this buffer recommendation would also substantially change the Specific Plan's proposed land use map to avoid the siting of new sensitive receptors within these setback areas and would drastically change the Specific Plan's proposed land uses by precluding new transit-oriented and infill residential development. The proposed residential development at the West Oakland BART Station TOD and new infill residential development along 7th Street would be precluded by this buffer, even though such new use is currently permitted and encouraged under current General Plan policies and zoning regulations. Additionally, each of the Specific Plan's proposed new re-zonings at the Phoenix Iron Works site and the Roadway site would also be precluded under this buffer recommendation. The buffer recommendation would be inconsistent with the basic objectives of the Specific Plan to provide additional housing along the 7th Street corridor and near the BART Station in order to generate additional vitality and foot traffic, ridership for transit, and social and business activity.

Delayed Development Implementation

Consider Plan implementation phasing that delays occupancy of units with highest health risk exposure, so that source emission regulations and vehicle fleet turnover that will result in lower emissions may take greater effect and thereby lower exposure levels. Since vehicle and engine emission rates will decrease in the future, projects developed later in the buildout timeframe would have less exposure. [13]

Delayed development may be capable of reducing the cancer risks and exposure to $PM_{2.5}$ concentrations of new sensitive receptors over time, but implementation of this recommendation is uncertain and cannot, with certainty, reduce this impact below BAAQMD threshold levels. Implementation of the delayed development recommendation would also preclude near-term development of the West Oakland BART Station TOD, as well as many of the other residential development sites pursuant to the Specific Plan and would introduce substantial uncertainty into the development process pursuant to the Specific Plan.

Other Best Management Practices

In addition to the City's Standard Conditions of Approval (Supplemental SCA B and C), consider requiring future individual discretionary development projects on those sites which would place new sensitive

[13] For example, the BAAQMD estimates that delaying development near highways and major roadways until 2029 can reduce cancer risk by up to 23 percent due to implementation of CARB's truck regulations for retrofitting/replacing diesel engines.

receptors in areas subject to cancer risks and exposure to $PM_{2.5}$ concentrations to incorporate the following additional (i.e., in addition to the SCAs) Best Management Practices (BMPs) for air quality:

a) Air filtration units shall be installed to achieve BAAQMD effectiveness performance standards in removing $PM_{2.5}$ from indoor air. The system effectiveness requirement shall be determined during final design when the exact level of exposure is known, based on proximity to emission sources. According to recent BAAQMD recommendations, air filtration systems rated MERV 16 or higher protect sensitive receptors from toxic air containments and $PM_{2.5}$ concentrations while inside a building. This measure is effective for reducing exposure from TACs and $PM_{2.5}$ emissions from diesel engines, highways and roadways.

a) When locating sensitive receptors near at-grade highways, prohibit uses that serve sensitive receptors on the first floor of buildings. $PM_{2.5}$ concentrations generally decrease with elevation.

b) Where appropriate, install passive electrostatic filtering systems, especially those with low air velocities (i.e., 1 mph).

c) Require re-routing of nearby heavy-duty truck routes, and enforce illegal parking and/or idling restrictions on heavy-duty trucks in the vicinity.

While the site planning and filtration methods noted within these additional BMPs would further capture and screen out airborne particulate matter, these methods do not reduce risks form gaseous TACs and the additional BMP recommendations would not be capable of reducing this impact to a less than significant level.

Cumulative Air Quality Impacts

The geographic context considered for cumulative air quality impacts is the regional San Francisco Bay Area Air Basin, which is considered a nonattainment area for both State and federal ambient air quality standards for ozone and particulate matter. Cumulative air quality impacts are evaluated based on both consistency of the Plan with local and regional air quality plans (i.e., the City General Plan and the CAP), and a quantification of subsequent project-related air quality impacts.

A Plan level or project-level impact is also considered to be cumulatively significant, resulting in significant adverse impacts to the region's air quality conditions. Additional analysis to assess cumulative impacts is unnecessary.

Consistency with the CAP

As indicated in the discussion above, development facilitated by the Specific Plan would result in less than significant impacts regarding consistency with the CAP regarding growth in VMT and with regard to adequate transportation control measures. Because there is no significant impact for the Plan, there is no significant cumulative impact related to criteria pollutants. The Housing Element EIR analyzed criteria air pollutants and precursors based on consistency with the current Clean Air Plan, and also found these cumulative impacts to be less than significant. (**LTS**)

Odors

The analysis in the City of Oakland's Housing Element EIR found that all locations within the Housing Element Plan Area are less than one mile from a potential odor source, such as food processing facilities, painting/coating operations, or green waste/recycling facilities. The Housing Element EIR presents a reasonable estimation of all the odor sources within the City of Oakland, based upon business tax

records, and it shows buffer zones around the identified sources based on BAAQMD recommendations. Nearly the entire City of Oakland, and all of the Housing Element Plan Area, could be exposed to nuisance odor impacts due to potentially incompatible land uses. The Housing Element EIR analyzed this impact and concluded that odor sources present in all high density areas of the City of Oakland could potentially expose residences to substantial/frequent odor. Similar to the conclusions of the Housing Element EIR, the conclusions of this EIR is that cumulative odor effects are significant and unavoidable at the plan- and project-level of analyses. (**SU**)

Construction Emissions

Fugitive dust from all cumulative construction projects will be effectively reduced to a level of less than significant with implementation of required City of Oakland Standard Conditions of Approval (**LTS with SCAs**). Larger individual construction projects could generate cumulative emissions of criteria air pollutants that would exceed the City's thresholds of significance, even with implementation of required City of Oakland Standard Conditions of Approval. This could also occur under concurrent construction of multiple, smaller projects in the vicinity, where these impacts would be cumulatively considerable (**SU**). With implementation of required City of Oakland Standard Conditions of Approval, toxic emissions from cumulative construction projects are not expected to exceed thresholds for cancer risk, chronic health index, acute health index or annual average PM2.5 concentration levels (**LTS with SCAs**).

Operational Emissions of Criteria Pollutants

Once buildout of the Specific Plan is complete and all of the expected new development is fully occupied, new development pursuant to the Specific Plan will generate emissions of criteria pollutants as a result of increased motor vehicle traffic and area source emissions. Traffic emissions combined with anticipated area source emissions would generate levels of criteria air pollutants that would exceed the City's project-level thresholds of significance, and such impacts would also be considered cumulatively considerable (**SU**).

Carbon Monoxide Concentrations

Since the Specific Plan would not expose sensitive uses and would not generate emissions leading to significant concentrations of CO that would violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation, there is no significant cumulative impact related to CO emissions (**LTS**).

Operational Toxic Air Emissions

Development pursuant to the West Oakland Specific Plan would include new light industrial, custom manufacturing and other similar land uses that could emit toxic emissions. Existing regulatory requirements would ensure that such emissions would not individually exceed established acceptable standards, but may contribute to cumulatively considerable effects (**SU**).

Exposure to Toxic Air Contaminants

Similar to the Housing Element EIR conclusions, this EIR concludes that implementation of the recommendations of a project-specific health risk assessment (as required by SCAs) would reduce local toxic air contaminant exposures to acceptable levels for diesel particulate matter (DPM) from cumulative stationary and mobile sources, resulting in less than significant cumulative impacts (**LTS with SCAs**). However, this EIR's conclusion (similar to the 2010 Housing Element EIR conclusion) is that implementation of the recommendations of a project-specific health risk assessment pursuant to SCA B

may not reduce local toxic air contaminant exposures to acceptable levels for gaseous TACs, and that the residual air pollution risk and hazard could have significant unavoidable cumulative impacts (**SU**).