# IV.C AIR QUALITY

## INTRODUCTION

This section examines the degree to which the proposed project may cause significant adverse changes to air quality. Both short-term construction emissions occurring from activities, such as site grading and haul truck trips, and long-term effects related to the ongoing operation of the proposed project are discussed in this section. This analysis focuses on air pollution from two perspectives: daily emissions and pollutant concentrations. "Emissions" refer to the quantity of pollutants released into the air, measured in pounds per day (ppd). "Concentrations" refer to the amount of pollutant material per volumetric unit of air, measured in parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$).

## ENVIRONMENTAL SETTING

### Pollutants and Effects

Criteria air pollutants are defined as pollutants for which the federal and State governments have established ambient air quality standards for outdoor concentrations to protect public health. The federal and State standards have been set at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include carbon dioxide (CO), ozone ($O_3$), nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), particulate matter 2.5 microns or less in diameter ($PM_{2.5}$), particulate matter ten microns or less in diameter ($PM_{10}$), and lead (Pb). These pollutants are discussed below.

**Carbon Monoxide**. CO is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas such as the project location, automobile exhaust accounts for the majority of CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly, so ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February.[1] The highest levels of CO typically occur during the colder months of the year when inversion conditions are more frequent. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions.

**Volatile Organic Compounds**. Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs are emitted by a wide array of products including: paints and lacquers, cleaning supplies, pesticides, building materials and furnishings, and office equipment such as copiers and printers. Because of the types of emissions sources, concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors. Key signs or symptoms associated with exposure to VOCs include nose and throat discomfort, headache, allergic skin reaction, nausea, fatigue, and dizziness.

**Ozone**. $O_3$ is a colorless gas that is formed in the atmosphere when reactive organic gases (ROG), which include VOC and nitrogen oxides ($NO_X$), react in the presence of ultraviolet sunlight. $O_3$ is not a primary pollutant; it is a secondary pollutant formed by complex interactions of two pollutants directly emitted into the atmosphere. The primary sources of ROG and $NO_X$, the components of $O_3$, are automobile

[1] Inversion is an atmospheric condition in which a layer of warm air traps cooler air near the surface of the earth, preventing the normal rising of surface air.

exhaust and industrial sources. Meteorology and terrain play major roles in $O_3$ formation. Ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. The greatest source of smog-producing gases is the automobile. Short-term exposure (lasting for a few hours) to $O_3$ at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

**Nitrogen Dioxide**. $NO_2$, like $O_3$, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and $NO_2$ are collectively referred to as $NO_X$ and are major contributors to $O_3$ formation. $NO_2$ also contributes to the formation of $PM_{10}$. High concentrations of $NO_2$ can cause breathing difficulties and result in a brownish-red cast to the atmosphere with reduced visibility. There is some indication of a relationship between $NO_2$ and chronic pulmonary fibrosis. Some increase of bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 ppm.

**Sulfur Dioxide**. $SO_2$ is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Main sources of $SO_2$ are coal and oil used in power plants and industries. Generally, the highest levels of $SO_2$ are found near large industrial complexes. In recent years, $SO_2$ concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of $SO_2$ and limits on the sulfur content of fuels. $SO_2$ is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. $SO_2$ can also yellow plant leaves and erode iron and steel.

**Particulate Matter**. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and $PM_{10}$ represent fractions of particulate matter. Fine particulate matter, or $PM_{2.5}$, is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g. motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as $SO_2$, $NO_X$, and VOC. Inhalable particulate matter, or $PM_{10}$, is about 1/7 the thickness of a human hair. Major sources of $PM_{10}$ include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

$PM_{2.5}$ and $PM_{10}$ pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and $PM_{10}$ can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates can cause lung damage directly. These substances can be absorbed into the blood stream and cause damage elsewhere in the body. These substances can transport absorbed gases, such as chlorides or ammonium, into the lungs and cause injury. Whereas $PM_{10}$ tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

**Lead**. Pb in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturers of batteries, paint, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95 percent. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities have become lead-emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth.

**Toxic Air Contaminants**. A substance is considered toxic if it has the potential to cause adverse health effects in humans. A toxic substance released into the air is considered a toxic air contaminant (TAC). TACs are identified by State and federal agencies based on a review of available scientific evidence. In the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management was designed to protect residents from the health effects of toxic substances in the air.

**Greenhouse Gases**. Greenhouse gas (GHG) emissions refer to a group of emissions that are generally believed to affect global climate conditions. The greenhouse effect compares the Earth and the atmosphere surrounding it to a greenhouse with glass panes. The glass panes in a greenhouse let heat from sunlight in and reduce the amount of heat that escapes. GHGs, such as carbon dioxide ($CO_2$), methane ($CH_4$), and nitrous oxide ($N_2O$), keep the average surface temperature of the Earth close to 60 degrees Fahrenheit (°F). Without the greenhouse effect, the Earth would be a frozen globe with an average surface temperature of about 5°F, while an excess of GHGs would cause the average surface temperature of the globe to increase.

In addition to $CO_2$, $CH_4$, and $N_2O$, GHGs include hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and water vapor. Of all the GHGs, $CO_2$ is the most abundant pollutant that contributes to climate change through fossil fuel combustion. $CO_2$ comprised 83.3 percent of the total GHG emissions in California in 2002.[2] The other GHGs are less abundant but have higher global warming potential than $CO_2$. To account for this higher potential, emissions of other GHGs are frequently expressed in the equivalent mass of $CO_2$, denoted as $CO_2e$. The $CO_2e$ of $CH_4$ and $N_2O$ represented 6.4 and 6.8 percent, respectively, of the 2002 California GHG emissions. Other high global warming potential gases represented 3.5 percent of these emissions.[3] In addition, there are a number of human-made pollutants, such as CO, $NO_X$, non-methane VOC, and $SO_2$, that have indirect effects on terrestrial or solar radiation absorption by influencing the formation or destruction of other climate change emissions.

**Air Pollution Climatology**

The Specific Plan area is located within the Los Angeles County portion of the South Coast Air Basin (Basin). The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Basin is bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east; and the San Diego County line to the south. Ambient pollution concentrations recorded in Los Angeles County are among the highest in the four counties comprising the Basin.

The Basin is in an area of high air pollution potential due to its climate and topography. The general region lies in the semi-permanent high pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The Basin experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific

[2]California Environmental Protection Agency, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, March 2006, p. 11.
[3]*Ibid.*

Ocean to the west and high mountains around the rest of its perimeter. The mountains and hills within the area contribute to the variation of rainfall, temperature, and winds throughout the region.

The Basin experiences frequent temperature inversions. Temperature typically decreases with height. However, under inversion conditions, temperature increases as altitude increases, thereby preventing air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere. This interaction creates a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and $NO_2$ react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving air pollutants inland, toward the mountains. During the fall and winter, air quality problems are created due to CO and $NO_2$ emissions. CO concentrations are generally worse in the morning and late evening (around 10:00 p.m.). In the morning, CO levels are relatively high due to cold temperatures and the large number of cars traveling. High CO levels during the late evenings are a result of stagnant atmospheric conditions trapping CO in the area. Since CO emissions are produced almost entirely from automobiles, the highest CO concentrations in the Basin are associated with heavy traffic. $NO_2$ concentrations are also generally higher during fall and winter days.

**Local Climate**

The mountains and hills within the Basin contribute to the variation of rainfall, temperature, and winds throughout the region. Within the Specific Plan area and its vicinity, the average wind speed, as recorded at the Lynwood Wind Monitoring Station, is approximately 3.7 miles per hour, with calm winds occurring approximately 34 percent of the time. Wind in the vicinity of the Specific Plan area predominately blows from the west-southwest.[4]

The annual average temperature in the project area is 64.9°F.[5] The project area experiences an average winter temperature of approximately 58.0°F and an average summer temperature of approximately 71.5°F. Total precipitation in the project area averages approximately 15 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer. Precipitation averages approximately 9 inches during the winter, approximately 4 inches during the spring, approximately 2 inches during the fall, and less than one inch during the summer.[6]

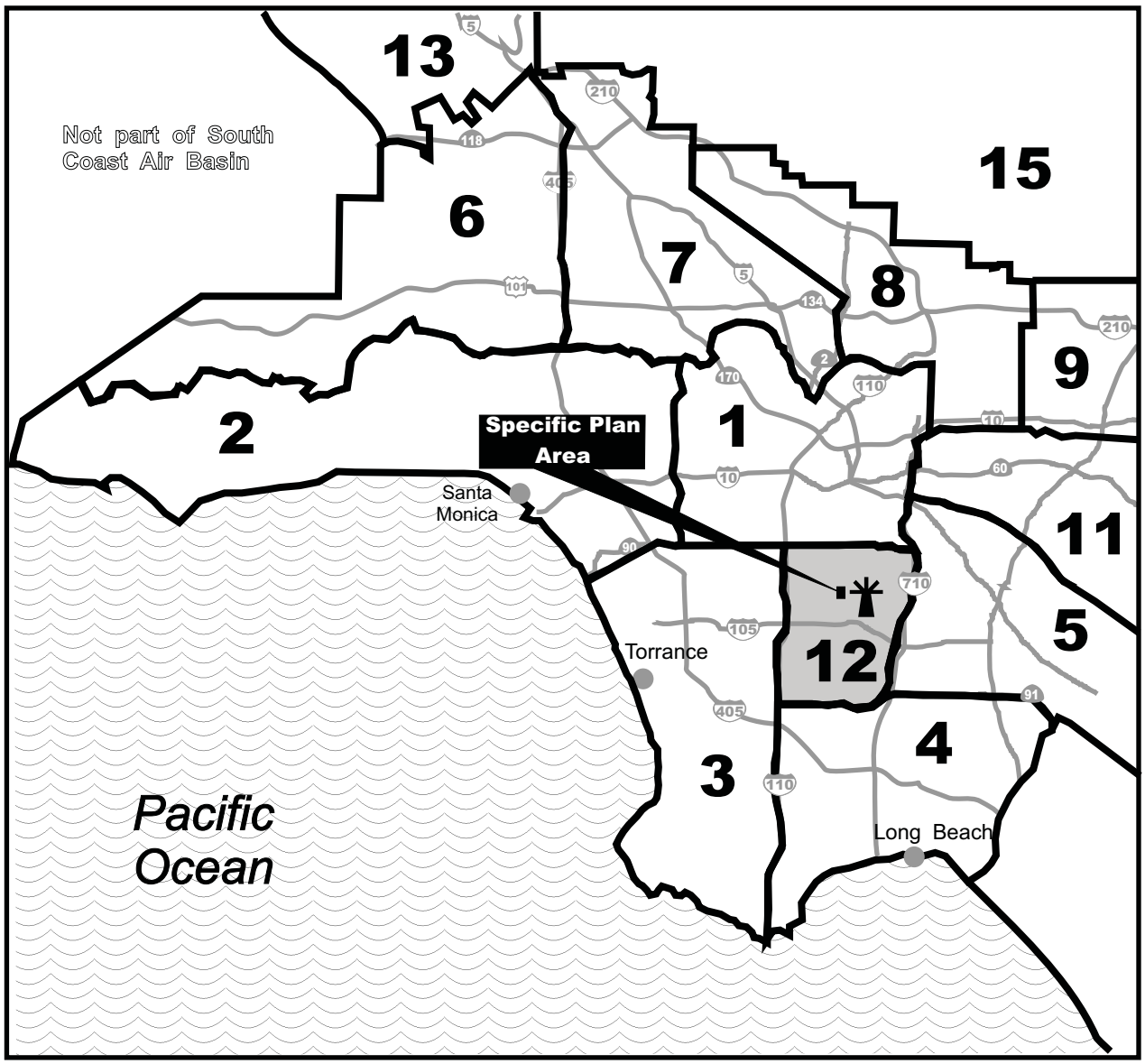
**Air Monitoring Data**

The SCAQMD monitors air quality conditions at 38 locations throughout the Basin. The Specific Plan area is located in SCAQMD's South Central Los Angeles County Air Monitoring Subregion, which is served by the Lynwood Monitoring Station. The monitoring station is located approximately two miles southeast of the Specific Plan area (**Figure IV.C-1**). Historical data from the Lynwood Monitoring Station were used to characterize existing conditions in the vicinity of the project area. Criteria pollutants monitored at the Lynwood Los Angeles Monitoring Station include $O_3$, CO, $PM_{2.5}$, and $NO_2$. Historical data from the Downtown Los Angeles Station was used to characterize existing $SO_2$ and $PM_{10}$ levels.

[4]SCAQMD, Meteorological Data, available at http://www.aqmd.gov/smog/metdata/MeteorologicalData.html, accessed July 13, 2010. See Appendix A.

[5]Western Regional Climate Center, Historical Climate Information, available at http://www.wrcc.dri.edu, accessed July 13, 2010.

[6]*Ibid.*




LEGEND: Hawthorne Monitoring Station

Air Monitoring Areas in Los Angeles County:

1. Central Los Angeles
2. Northwest Coastal
3. Southwest Coastal
4. South Coastal
5. Southeast Los Angeles County
6. West San Fernando Valley
7. East San Fernando Valley
8. West San Gabriel Valley
9. East San Gabriel Valley
10. Pomona/Walnut Valley (not shown)
11. South San Gabriel Valley
12. South Central Los Angeles
13. Santa Clarita Valley
15. San Gabriel Mountains

APPROX. SCALE
0 4.5 9.0 MILES
N

SOURCE: South Coast Air Quality Management District Air Monitoring Areas Map, 1999



*FIGURE IV.C-1*

AIR MONITORING AREAS

**Table IV.C-1** shows pollutant levels, the State and federal standards, and the number of exceedances recorded at the Lynwood Monitoring Station compared to the Metropolitan General Forecast Area (Forecast Area) from 2007 to 2009. Criteria pollutants CO, $NO_2$, and $SO_2$ did not exceed the CAAQS during the 2007 to 2009 period. The one-hour State standard for $O_3$ was exceeded three times during the three-year period, and the eight-hour State standard for $O_3$ was exceeded two times. The 24-hour State standard for $PM_{10}$ was exceeded eight times during the three-year period but the annual State standard for $PM_{2.5}$ was exceeded each year. The Lynwood Monitoring Station recorded very similar pollutant concentrations as the general forecast area.

**TABLE IV.C-1: 2007-2009 AMBIENT AIR QUALITY DATA IN PROJECT VICINITY**

| | | Lynwood and Downtown Los Angeles Monitoring Stations /a/ | | | Metropolitan General Forecast Area Forecast Area /a,b/ | | |
|---|---|---|---|---|---|---|---|
| | | Number of Days Above State Standard | | | | | |
| **Pollutant** | **Pollutant Concentration & Standards** | **2007** | **2008** | **2009 /c/** | **2007** | **2008** | **2009** |
| Ozone | Maximum 1-hr Concentration (ppm)<br>Days > 0.09 ppm (State 1-hr standard)<br>Days > 0.07 ppm (State 8-hr standard) | 0.10<br>1<br>2 | 0.08<br>2<br>0 | 0.08<br>0<br>0 | 0.12<br>7<br>3 | 0.10<br>7<br>3 | - |
| Carbon Monoxide | Maximum 1-hr concentration (ppm)<br>Days > 20 ppm (State1-hr standard)<br><br>Maximum 8-hr concentration (ppm)<br>Days > 9.0 ppm (State 8-hr standard) | 6<br>0<br><br>5.1<br>0 | 6<br>0<br><br>4.3<br>0 | n/a<br>n/a<br><br>2<br>0 | 5.7<br>0<br><br>3.4<br>0 | 4.7<br>0<br><br>3.1<br>0 | -<br><br><br>- |
| Nitrogen Dioxide | Maximum 1-hr Concentration (ppm)<br>Days > 0.18 ppm (State 1-hr standard) | 0.1<br>0 | 0.12<br>0 | 0.08<br>0 | 0.1<br>0 | 0.11<br>0 | - |
| $PM_{10}$ | Maximum 24-hr concentration ($\mu g/m^3$)<br>Days > 50 $\mu g/m^3$ (State 24-hr standard) | 78<br>5 | 66<br>2 | 52<br>1 | 78<br>5 | 66<br>2 | - |
| $PM_{2.5}$ | Annual Arithmetic Mean ($\mu g/m^3$)<br>Exceed State Standard (12 $\mu g/m^3$) | 16<br>Yes | 16<br>Yes | 13<br>Yes | 16<br>Yes | 16<br>Yes | - |
| Sulfur Dioxide | Maximum 24-hr Concentration (ppm)<br>Days > 0.04 ppm (State 24-hr standard) | <0.01<br>0 | <0.01<br>0 | <0.01<br>0 | <0.0<br>1 | <0.01<br>0 | - |

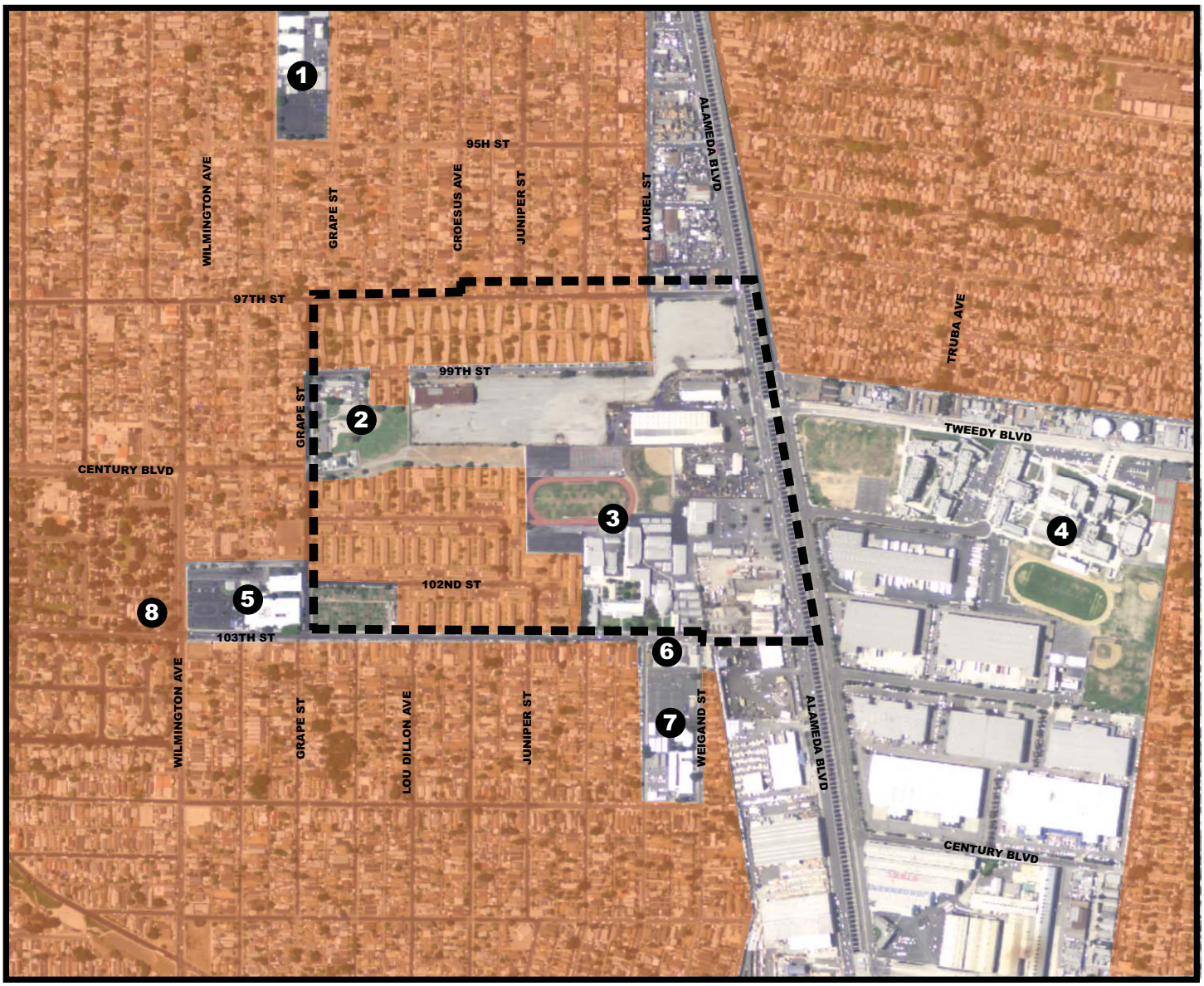
/a/ The Metropolitan General Forecast Area includes the Central Los Angeles County, South Central Los Angeles County, Southeast Los Angeles County, and North Orange County air monitoring areas of the SCAQMD. Data is no longer available from the Southeast Los Angeles County subregion.
/b/ An average of the maximum concentration of each criteria pollutant of the air monitoring areas of the Metropolitan General Forecast Area was used to represent maximum concentrations in the Metropolitan General Forecast Area.
/c/ 2009 data provided by CARB Air Quality Data Statistics. Westchester Parkway Station data used for each pollutant, except $PM_{2.5}$ which used the North Long Beach Air Monitoring Station.
**SOURCE**: SCAQMD, Historical Data by Year, available at http://www.aqmd.gov/smog/historicaldata.htm, accessed July 20, 2010.

## Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. CARB has identified the following typical groups who are most likely to be affected by air pollution: children under 14, the elderly over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

As shown in **Figure IV.C-2**, sensitive land uses within the project area include residences and schools. Residential areas include the following:

- Single- and multi-family residences located approximately 50 feet to the west, north, and south
- Single- and multi-family residences located approximately 200 feet to the east in South Gate




LEGEND:

Specific Plan Area

Single- and Multi-Family Residences

(#) Sensitive Receptor Locations

1. 92ND Street Elementary School
2. Jordan Downs Recreation Center Playground and Community Center Building
3. David Starr Jordan High School
4. Southeast Middle School
5. Florence Griffith Joyner Elementary School
6. Simon Rodia Continuation Schooll
7. Weigand Elementary School
8. Youth Opportunity High Schooll

SOURCE: TAHA, 2010.

APPROX. SCALE

0 440 880 FEET



*FIGURE IV.C-2*

AIR QUALITY SENSITIVE RECEPTOR LOCATIONS

Educational land uses include the following:

- Florence Griffith Joyner Elementary School located approximately 65 feet to the west
- Simon Rodia Continuation School located approximately 65 feet to the south
- Weigand Elementary School located approximately 210 feet to the south
- Southeast Middle School located approximately 650 feet to the east
- Youth Opportunity High School located approximately 900 feet to the west
- 92nd Street Elementary School located approximately 915 feet to the north
- Southeast High School located approximately 1,275 feet to the east

The following sensitive land uses are located within the Specific Plan area and were also considered in this analysis:

- Multi-family Residences
- David Starr Jordan High School
- Jordan Downs Recreation Center

**Regulatory Framework**

***Federal***

**United States Environmental Protection Agency**. The Federal Clean Air Act (CAA) governs air quality in the United States. The United States Environmental Protection Agency (USEPA) is responsible for enforcing the CAA. USEPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS). NAAQS are required under the 1977 CAA and subsequent amendments. USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. USEPA has jurisdiction over emission sources outside State waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in States other than California. Automobiles sold in California must meet stricter emission standards established by CARB.

As required by the CAA, NAAQS have been established for seven major air pollutants: CO, $NO_2$, $O_3$, $PM_{2.5}$, $PM_{10}$, $SO_2$, and Pb. The CAA requires USEPA to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for each criteria pollutant based on whether the NAAQS have been achieved. The federal standards are summarized in **Table IV.C-2**. The USEPA has classified the Basin as maintenance for CO and nonattainment for $O_3$, $PM_{2.5}$, and $PM_{10}$.

***State***

**California Air Resources Board**. In addition to being subject to the requirements of CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). In California, the CCAA is administered by the California Air Resources Board (CARB) at the State level and by the air quality management districts and air pollution control districts at the regional and local levels. The CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for meeting the State requirements of the CAA, administering the CCAA, and establishing the California Ambient Air Quality Standards (CAAQS). The CCAA, as amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the CAAQS. CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. CARB regulates mobile air pollution sources, such as motor vehicles. CARB is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment.

CARB established passenger vehicle fuel specifications, which became effective in March 1996. CARB oversees the functions of local air pollution control districts and air quality management districts, which, in turn administer air quality activities at the regional and county levels. The State standards are summarized in **Table IV.C-2**.

**TABLE IV.C-2: STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS FOR THE SOUTH COAST AIR BASIN**

| Pollutant | Averaging Period | California | | Federal | |
|---|---|---|---|---|---|
| | | Standards | Attainment Status | Standards | Attainment Status |
| Ozone ($O_3$) | 1-hour | 0.09 ppm (180 µg/m$^3$) | Nonattainment | -- | -- |
| | 8-hour | 0.070 ppm (137 µg/m$^3$) | n/a | 0.075 ppm (147 µg/m$^3$) | Nonattainment |
| Respirable Particulate Matter ($PM_{10}$) | 24-hour | 50 µg/m$^3$ | Nonattainment | 150 µg/m$^3$ | Nonattainment |
| | Annual Arithmetic Mean | 20 µg/m$^3$ | Nonattainment | -- | -- |
| Fine Particulate Matter ($PM_{2.5}$) | 24-hour | -- | -- | 35 µg/m$^3$ | Nonattainment |
| | Annual Arithmetic Mean | 12 µg/m$^3$ | Nonattainment | 15.0 µg/m$^3$ | Nonattainment |
| Carbon Monoxide (CO) | 8-hour | 9.0 ppm (10 mg/m$^3$) | Attainment | 9 ppm (10 mg/m$^3$) | Maintenance |
| | 1-hour | 20 ppm (23 mg/m$^3$) | Attainment | 35 ppm (40 mg/m$^3$) | Maintenance |
| Nitrogen Dioxide ($NO_2$) | Annual Arithmetic Mean | 0.030 ppm (57 µg/m$^3$) | Attainment | 0.053 ppm (100 µg/m$^3$) | Attainment |
| | 1-hour | 0.18 ppm (338 µg/m$^3$) | Attainment | 0.100 ppm (190 µg/m$^3$) | n/a |
| Sulfur Dioxide ($SO_2$) | Annual Arithmetic Mean | -- | -- | 0.030 ppm (80 µg/m$^3$) | Attainment |
| | 24-hour | 0.04 ppm (105 µg/m$^3$) | Attainment | 0.14 ppm (365 µg/m$^3$) | Attainment |
| | 3-hour | -- | -- | -- | -- |
| | 1-hour | 0.25 ppm (655 µg/m$^3$) | Attainment | -- | -- |
| Lead (Pb) | 30-day average | 1.5 µg/m$^3$ | Attainment | -- | -- |
| | Calendar Quarter | -- | -- | 0.15 µg/m$^3$ | Attainment |

n/a = not available
**SOURCE**: CARB, *Ambient Air Quality Standards*, January 27, 2010.

The CCAA requires CARB to designate areas within California as either attainment or non-attainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as non-attainment for a pollutant if air quality data shows that a State standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by

highly irregular or infrequent events are not considered violations of a State standard and are not used as a basis for designating areas as nonattainment. Under the CCAA, the Los Angeles County portion of the Basin is designated as a nonattainment area for $O_3$, $PM_{2.5}$, and $PM_{10}$.[7]

The CARB enacted the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly) in September 1987. Stationary sources are required to report the types and quantities of certain substances their facilities routinely release into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, and to notify nearby residents of significant risks. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731 (Calderon) to address the reduction of significant risks. The bill requires that owners of significant-risk facilities reduce their risks below the level of significance. The Act requires that toxic air emissions from stationary sources be quantified and compiled into an inventory according to criteria and guidelines developed by the CARB, that each facility be prioritized to determine whether a risk assessment must be conducted, that the risk assessments be conducted according to methods developed by the Office of Environmental Health Hazard Assessment, that the public be notified of significant risks posed by nearby facilities, and that emissions which result in a significant risk be reduced. The Act was further modified by AB 564, chaptered on September 19, 1996. The passage of AB 564 amended the Hot Spots statute in several ways, including adding provisions that: exempt specified low priority facilities from further compliance with the Hot Spots program; reinstate exempted facilities if specified criteria are met; specify an alternative evaluation process for facilities subject to district permit programs; and other changes to exempt specified facilities from further compliance with the Hot Spots Program.

In 1998, California identified diesel exhaust particulate matter as a toxic air contaminant based on its potential to cause cancer, premature death, and other health problems. Those most vulnerable are children whose lungs are still developing and the elderly who may have other serious health problems. Based on year 2005 emissions in California, diesel particulate matter contributes each year to approximately 3,500 premature deaths and thousands of hospital admissions, asthma attacks and other respiratory symptoms, and lost workdays. Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. In addition, diesel soot causes visibility reduction and is a potent global warmer. The CARB has implemented many regulations designed to reduce diesel particulate matter emissions, including an anti-idling Airborne Toxic Control Measure and engine certification requirements.

***Local***

**South Coast Air Quality Management District**. The 1977 Lewis Air Quality Management Act created the SCAQMD to coordinate air quality planning efforts throughout Southern California. This Act merged four county air pollution control agencies into one regional district to better address the issue of improving air quality in Southern California. Under the Act, renamed the Lewis-Presley Air Quality Management Act in 1988, the SCAQMD is the agency principally responsible for comprehensive air pollution control in the region. Specifically, the SCAQMD is responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain State and federal ambient air quality standards in the district. Programs that were developed include air quality rules and regulations that regulate stationary sources, area sources, point sources, and certain mobile source emissions. The SCAQMD is also responsible for establishing stationary source permitting requirements and for ensuring that new, modified, or relocated stationary sources do not create net emission increases.

The SCAQMD monitors air quality within the project area. The SCAQMD has jurisdiction over an area of 10,743 square miles, consisting of Orange County; the non-desert portions of Los Angeles, Riverside,

[7]CARB, Area Designation Maps, available at http://www.arb.ca.gov/desig/adm/adm.htm, accessed July 13, 2010.

and San Bernardino counties; and the Riverside County portion of the Salton Sea Air Basin and Mojave Desert Air Basin. The South Coast Air Basin is a subregion of the SCAQMD and covers an area of 6,745 square miles. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Basin is bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east; and the San Diego County line to the south (**Figure IV.C-3**).

**Air Quality Management Plan**. All areas designated as nonattainment under the CCAA are required to prepare plans showing how the area would meet the State air quality standards by its attainment dates. The AQMP is the region's plan for improving air quality in the region. It addresses CAA and CCAA requirements and demonstrates attainment with State and federal ambient air quality standards. The AQMP is prepared by SCAQMD and the Southern California Association of Governments (SCAG). The AQMP provides policies and control measures that reduce emissions to attain both State and federal ambient air quality standards by their applicable deadlines. Environmental review of individual projects within the Basin must demonstrate that daily construction and operational emissions thresholds, as established by the SCAQMD, would not be exceeded. The environmental review must also demonstrate that individual projects would not increase the number or severity of existing air quality violations.

The 2007 AQMP was adopted by the SCAQMD on June 1, 2007. The 2007 AQMP proposes attainment demonstration of the federal $PM_{2.5}$ standards through a more focused control of $SO_X$, directly-emitted $PM_{2.5}$, and $NO_X$ supplemented with VOC by 2015. The eight-hour ozone control strategy builds upon the $PM_{2.5}$ strategy, augmented with additional $NO_X$ and VOC reductions to meet the standard by 2024. The 2007 AQMP also addresses several federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2007 AQMP is consistent with and builds upon the approaches taken in the 2003 AQMP. However, the 2007 AQMP highlights the significant amount of reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the time frames allowed under the CAA.

**Toxic Air Contaminants**. The SCAQMD has a long and successful history of reducing air toxics and criteria emissions in the South Coast Air Basin. SCAQMD has an extensive control program, including traditional and innovative rules and policies. These policies can be viewed in the SCAQMD's *Air Toxics Control Plan for the Next Ten Years* (March 2000). To date, the most comprehensive study on air toxics in the Basin is the Multiple Air Toxics Exposure Study (MATES-III), conducted by the SCAQMD. The monitoring program measured more than 30 air pollutants, including both gases and particulates. The monitoring study was accompanied by a computer modeling study in which SCAQMD estimated the risk of cancer from breathing toxic air pollution throughout the region based on emissions and weather data. MATES-III found that the cancer risk in the region from carcinogenic air pollutants ranges from about 870 in a million to 1,400 in a million, with an average regional risk of about 1,200 in a million.

**City of Los Angeles CEQA Thresholds Guide**. The *City of Los Angeles CEQA Thresholds Guide* addresses air quality impacts related to construction, operations, and toxic air contaminants (TACs). The City of Los Angeles has not adopted specific significance thresholds for air quality impacts. Instead, the *City of Los Angeles CEQA Thresholds Guide* relies on SCAQMD guidance to determine potential impacts associated with project development.


LEGEND:

South Coast Air Basin

State of California

SOURCE: California Air Resources Board, State and Local Air Monitoring Network Plan, October 1998

N

APPROX. SCALE

0 75 150 MILES

taha

Jordan Downs Specific Plan
Environmental Impact Report

taha 2008-079

CITY OF LOS ANGELES DEPARTMENT OF CITY PLANNING

*FIGURE IV.C-3*

SOUTH COAST AIR BASIN

**City of Los Angeles General Plan Air Quality Element**. The City of Los Angeles General Plan was prepared in response to California State law requiring that each city and county adopt a long-term comprehensive general plan. According to State Guidelines, a general plan must be integrated, internally consistent, and present goals, objectives, policies and implementation guidelines for decision makers to use. The City of Los Angeles addresses air quality issues in the Air Quality Element, which is part of the City's General Plan. The planning area for the City's Air Quality Element covers the entire City of Los Angeles, which encompasses an area of about 465 square miles.

The City's General Plan Air Quality Element serves to aid the greater Los Angeles region in attaining federal and State ambient air quality standards at the earliest feasible date, while still maintaining economic growth and improving the quality of life. The City's Air Quality Element and its accompanying Clean Air Program acknowledge the interrelationships between transportation and land use planning in meeting the City's mobility and clean air goals. With the City's adoption of the Air Quality Element and the accompanying Clean Air Program, the City is seeking to achieve consistency with regional Air Quality, Growth Management, Mobility, and Congestion Management Plans.

**Global Climate Change**

In response to growing scientific and political concern with global climate change, California has recently adopted a series of laws to reduce emissions of GHGs into the atmosphere. In September 2002, Assembly Bill (AB) 1493 was enacted, requiring the development and adoption of regulations to achieve "the maximum feasible reduction of greenhouse gases" emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the State. California Governor Arnold Schwarzenegger announced, on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

In response to the Executive Order, the Secretary of the California Environmental Protection Agency created the Climate Action Team (CAT), which, in March 2006, published the *Climate Action Team Report to Governor Schwarzenegger and the Legislature* (2006 CAT Report). The 2006 CAT Report identifies a recommended list of strategies that the State could pursue to reduce climate change GHG emissions. These are strategies that could be implemented by various State agencies to ensure that the Governor's targets are met and can be met with existing authority of the State agencies.

**Assembly Bill 32**. In September 2006, Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act of 2006, also known as AB 32, into law. AB 32 focuses on reducing GHG emissions in California, and requires the CARB to adopt rules and regulations that would achieve greenhouse gas emissions equivalent to statewide levels in 1990 by 2020. To achieve this goal, AB 32 mandates that the CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce statewide GHG emissions from stationary sources, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. Because the intent of AB 32 is to limit 2020 emissions to the equivalent of 1990, and the present year (2010) is the midpoint of this timeframe, it is expected that the regulations would affect many existing sources of GHG emissions and not just new general development projects. Senate Bill (SB) 1368, a companion bill to AB 32, requires the California Public Utilities Commission and the California Energy Commission to establish GHG emission performance standards for the generation of electricity. These standards will also apply to power that is generated outside of California and imported into the State.

AB 32 charges the CARB with the responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. On June 1, 2007, the CARB adopted three discrete early action measures to reduce GHG emissions. These measures involved complying with a low carbon fuel standard,

reducing refrigerant loss from motor vehicle air conditioning maintenance, and increasing methane capture from landfills.[8] On October 25, 2007, the CARB tripled the set of previously approved early action measures. The approved measures include improving truck efficiency (i.e., reducing aerodynamic drag), electrifying port equipment, reducing perfluorocarbons from the semiconductor industry, reducing propellants in consumer products, promoting proper tire inflation in vehicles, and reducing sulfur hexaflouride emission from the non-electricity sector. The CARB has determined that the total statewide aggregated greenhouse gas 1990 emissions level and 2020 emissions limit is 427 million metric tons of $CO_2e$. The 2020 target reductions are currently estimated to be 174 million metric tons of $CO_2e$.

The CARB AB 32 Scoping Plan contains the main strategies to achieve the 2020 emissions cap. The Scoping Plan was developed by the CARB with input from the Climate Action Team and proposes a comprehensive set of actions designed to reduce overall carbon emissions in California, improve the environment, reduce oil dependency, diversify energy sources, and enhance public health while creating new jobs and improving the State economy. The GHG reduction strategies contained in the Scoping Plan include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. The measures in the Scoping Plan adopted by the Board will be developed and put in place by 2012.

The CARB has also developed the greenhouse gas mandatory reporting regulation, which required reporting beginning on January 1, 2008 pursuant to requirements of AB 32. The regulations require reporting for certain types of facilities that make up the bulk of the stationary source emissions in California. The regulation language identifies major facilities as those that generate more than 25,000 metric tons of $CO_2$ per year. Cement plants, oil refineries, electric generating facilities/providers, co-generation facilities, and hydrogen plants and other stationary combustion sources that emit more than 25,000 metric tons of $CO_2$ per year, make up 94 percent of the point source $CO_2$ emissions in California.

**CEQA Guideline Amendments**. California Senate Bill (SB) 97 required the Governor's Office of Planning and Research (OPR) to develop CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." The CEQA Guideline amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. Noteworthy revisions to the CEQA Guidelines include:

- Lead agencies should quantify all relevant GHG emissions and consider the full range of project features that may increase or decrease GHG emissions as compared to the existing setting;
- Consistency with the CARB Scoping Plan is not a sufficient basis to determine that a project's GHG emissions would not be cumulatively considerable;
- A lead agency may appropriately look to thresholds developed by other public agencies, including the CARB's recommended CEQA thresholds;
- To qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project. General compliance with a plan, by itself, is not mitigation;
- The effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis; and
- Given that impacts resulting from GHG emissions are cumulative, significant advantages may result from analyzing such impacts on a programmatic level. If analyzed properly, later projects may tier, incorporate by reference, or otherwise rely on the programmatic analysis.

**Senate Bill 375**. California Senate Bill (SB) 375, passed September 30, 2008, provides a means for achieving AB 32 goals through regulation of cars and light trucks. SB 375 aligns three critical policy areas of importance to local government: (1) regional long-range transportation plans and investments; (2)

[8]California Air Resources Board, *Proposed Early Action Measures to Mitigate Climate Change in California*, April 20, 2007.

regional allocation of the obligation for cities and counties to zone for housing; and (3) a process to achieve greenhouse gas emissions reductions targets for the transportation sector. SB 375 establishes a process for CARB to develop the GHG emissions reductions targets for each region (as opposed to individual local governments or households). CARB must take certain factors into account before setting the targets, such as considering the likely reductions that will result from actions to improve the fuel efficiency of the Statewide fleet and regulations related to the carbon content of fuels (low carbon fuels). CARB must also convene a Regional Targets Advisory Committee, which includes representation from the League of California Cities, California State Association of Counties, metropolitan planning organizations, developers, planning organizations and other stakeholder groups. Furthermore, before setting the targets for each region, CARB is required to exchange technical information with the Metropolitan Planning Organizations (MPOs) for that region and with the affected air district. SB 375 provides that the MPOs may recommend a target for its region.

SB 375 relies upon regional planning processes already underway in the 17 MPOs in the State to accomplish its objectives. The provisions related to GHG emissions only apply to the MPOs in the State, which includes 37 of the 58 counties. Most notably, the measure requires the MPO to prepare a Sustainable Communities Strategy (SCS) within the Regional Transportation Plan (RTP), which sets forth a vision for growth for the region taking into account the transportation, housing, environmental, and economic needs of the region. The SCS is the blueprint by which the region will meet its GHG emissions reductions target if there is a feasible way to do so.

SB 375 indirectly addresses another longstanding issue: single purpose State agencies. The new law will require the cooperation of CARB, the California Transportation Commission (CTC), the California Department of Transportation (Caltrans) and the State Department of Housing and Community Development (HCD). For example, SB 375 takes a first step to counter this problem by connecting the Regional Housing Needs Allocation (RHNA) to the transportation planning process. While these State agencies will be involved in setting the targets and adopting new guidelines, local governments and the MPOs will not only provide input into setting the targets, but will serve as the lead on implementation. Member cities and counties working through their MPOs are tasked with development of the new integrated regional planning and transportation strategies designed to meet the GHG targets.

SB 375 also includes a provision that applies to all regional transportation planning agencies in the State that recognizes the rural contribution towards reducing GHGs. More specifically, the bill requires regional transportation agencies to consider financial incentives for cities and counties that have resource areas or farmland, for the purposes of, for example, transportation investments for the preservation and safety of the city street or county road system, farm to market, and interconnectivity transportation needs. An MPO or county transportation agency shall also consider financial assistance for counties to address countywide service responsibilities in counties that contribute towards the GHG emissions reductions targets by implementing policies for growth to occur within their cities.

SB 375 uses California Environmental Quality Act (CEQA) streamlining as an incentive to encourage residential projects, which help achieve AB 32 goals to reduce GHG emissions. Cities and counties that find the CEQA streamlining provisions attractive have the opportunity (but not the obligation) to align their planning decisions with the decisions of the region.

SB 375 provides more certainty for local governments and developers by framing how AB 32's reduction goal from transportation for cars and light trucks will be established. It should be noted, however, that SB 375 does not prevent CARB from adopting additional regulations under its AB 32 authority. However,

based on the degree of consensus around SB 375 and early indications from CARB, such actions are not anticipated in the foreseeable future.[9]

**CARB Guidance**. The CARB has published draft guidance for setting interim GHG significance thresholds (October 24, 2008). The guidance is the first step toward developing the recommended Statewide interim thresholds of significance for GHG emissions that may be adopted by local agencies for their own use. The guidance does not attempt to address every type of project that may be subject to CEQA, but instead focuses on common project types that are responsible for substantial GHG emissions (i.e., industrial, residential, and commercial projects). The CARB believes that thresholds in these important sectors will advance climate objectives, streamline project review, and encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the State.

**California Air Pollution Control Officers Association (CAPCOA) Guidance**. CAPCOA published a white paper to provide a common platform of information and tools to address climate change in CEQA analyses, including the evaluation and mitigation of GHG emissions from proposed projects and identifying significance thresholds options. The white paper addresses issues inherent in establishing CEQA thresholds, evaluates tools, catalogues mitigation measures, and provides air districts and lead agencies with options for incorporating climate change into their programs.

**SCAQMD Guidance**. The SCAQMD has convened a GHG CEQA Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. Members of the working group include government agencies implementing CEQA and representatives from various stakeholder groups that will provide input to the SCAQMD staff on developing GHG CEQA significance thresholds. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The SCAQMD has not adopted guidance for CEQA projects under other lead agencies.

**Green LA Action Plan**. The City of Los Angeles has issued guidance promoting green building to reduce GHG emissions. The goal of the Green LA Action Plan (Plan) is to reduce greenhouse gas emissions 35 percent below 1990 levels by 2030.[10] The Plan identifies objectives and actions designed to make the City a leader in confronting global climate change. The measures would reduce emissions directly from municipal facilities and operations, and create a framework to address City-wide GHG emissions. The Plan lists various focus areas in which to implement GHG reduction strategies. Focus areas listed in the Plan include energy, water, transportation, land use, waste, port, airport, and ensuring that changes to the local climate are incorporated into planning and building decisions. The Green LA Action Plan discusses City goals for each focus area, as follows:

***Energy***

- Increase the generation of renewable energy;
- Encourage the use of mass transit;
- Develop sustainable construction guidelines;
- Increase City-wide energy efficiency; and
- Promote energy conservation.

[9]American Planning Association, California Chapter, *Analysis of SB 375*, http://www.calapa.org/-en/cms/?2841, accessed July 13, 2010.

[10]City of Los Angeles, *Green LA: An Action Plan to Lead the Nation in Fighting Global Warming*, May 2007.

***Water***

- Decrease per capita water use to reduce electricity demand associated with water pumping and treatment.

***Transportation***

- Power the City vehicle fleet with alternative fuels; and
- Promote alternative transportation (e.g., mass transit and rideshare).

***Other Goals***

- Create a more livable City through land use regulations;
- Increase recycling, reducing emissions generated by activity associated with the Port of Los Angeles and regional airports;
- Create more City parks, promoting the environmental economic sector; and
- Adapt planning and building policies to incorporate climate change policy.

The City adopted an ordinance to establish a green building program in April 2008. The ordinance establishes green building requirements for projects involving 50 or more dwelling units. The Green Building Program was established to reduce the use of natural resources, create healthier living environments and minimize the negative impacts of development on local, regional, and global ecosystems. The program addresses the following five areas:

- Site: location, site planning, landscaping, storm water management, construction and demolition recycling
- Water Efficiency: efficient fixtures, wastewater reuse, and efficient irrigation
- Energy and Atmosphere: energy efficiency, and clean/renewable energy
- Materials and Resources: materials reuse, efficient building systems, and use of recycled and rapidly renewable materials
- Indoor Environmental Quality: improved indoor air quality, increased natural lighting, and thermal comfort/control

## ENVIRONMENTAL IMPACTS

### Significance Thresholds

The significance criteria are based on guidance provided by the SCAQMD and contained in the *City of Los Angeles CEQA Thresholds Guide*.

**Construction Phase Significance Criteria**. The proposed project would have a significant impact on construction-related air quality if:

- Daily regional emissions were to exceed SCAQMD thresholds presented in **Table IV.C-3**;
- Localized concentrations of CO exceed the one-hour standard of 20 ppm or the eight-hour standard of 9.0 ppm;
- Localized concentrations of $NO_2$ exceed the one-hour standard of 0.18 ppm;
- Localized concentrations of $PM_{2.5}$ or $PM_{10}$ exceed 10.4 $ug/m^3$;
- The proposed project would generate significant emissions of TACs; and/or
- The proposed project would create an odor nuisance.

| TABLE IV.C-3: SCAQMD DAILY CONSTRUCTION EMISSIONS THRESHOLDS | |
|---|---|
| **Criteria Pollutant** | **Regional Emissions (Pounds Per Day)** |
| Volatile Organic Compounds (VOC) | 75 |
| Nitrogen Oxides ($NO_X$) | 100 |
| Carbon Monoxide (CO) | 550 |
| Sulfur Oxides ($SO_X$) | 150 |
| Fine Particulates ($PM_{2.5}$) | 55 |
| Particulates ($PM_{10}$) | 150 |
| **SOURCE:** SCAQMD, 2010. | |

**Operations Phase Significance Criteria**. The proposed project would have a significant impact on operational air quality if the proposed project if:

- Daily operational emissions were to exceed SCAQMD operational emissions thresholds presented in **Table IV.C-4**;

| TABLE IV.C-4: SCAQMD DAILY OPERATIONAL EMISSIONS THRESHOLDS | |
|---|---|
| **Criteria Pollutant** | **Pounds Per Day** |
| Volatile Organic Compounds (VOC) | 55 |
| Nitrogen Oxides ($NO_X$) | 55 |
| Carbon Monoxide (CO) | 550 |
| Sulfur Oxides ($SO_X$) | 150 |
| Fine Particulates ($PM_{2.5}$) | 55 |
| Particulates ($PM_{10}$) | 150 |
| **SOURCE:** SCAQMD, 2010. | |

- Project-related traffic causes CO concentrations at study intersections to violate the CAAQS for either the one- or eight-hour period. The CAAQS for the one- and eight-hour periods are 20 ppm and 9.0 ppm, respectively;
- The proposed project would generate significant emissions of TACs;
- The proposed project would create an odor nuisance; and/or
- The proposed project would not be consistent with the relevant air quality plans (i.e., AQMP and City of Los Angeles General Plan Air Quality Element).

**Climate Change and Greenhouse Gas Significance Criteria**. The City of Los Angeles has not established climate change and GHG significance criteria. The SCAQMD has adopted GHG significance thresholds for projects where the SCAQMD is lead agency but not for general development. The Bay Area Air Quality Management District (BAAQMD) has adopted a threshold of 1,100 metric tons of $CO_2e$ per year or 4.6 metric tons of $CO_2e$ per service population (residents and employees) per year. The BAAQMD significance criteria based on service population was developed for assessing plan-level projects (e.g., specific plans). The threshold was specifically developed based on the meteorological and transit characteristics of the BAAQMD region (e.g., higher transit than the SCAQMD region), and may not be representative of the SCAQMD region. However, it has been applied to this project in absence of a local threshold. The proposed project would have a significant impact on climate change and GHG if the proposed project were to:

- Greenhouse gas emissions would exceed 4.6 metric tons per year per service population.

**Methodology**

This air quality analysis is consistent with the methods described in the SCAQMD CEQA Air Quality Handbook (1993 edition), as well as the updates to the CEQA Air Quality Handbook, as provided on the SCAQMD website.

**Construction**. Construction exhaust emissions (i.e., demolition, site preparation, and building construction) were calculated using emission factors from the CARB OFFROAD2007 and EMFAC2007 models. Fugitive dust emission estimates were based on emission factors from the CARB URBEMIS2007 model and USEPA AP-42 (Compilation of Air Pollutant Emission Factors). Architectural coating emissions were also based on URBEMIS2007 emission factors. Regional emissions were compared to the SCAQMD regional thresholds to determine project impact significance. The localized construction analysis followed guidelines published by the SCAQMD in the Localized Significance Methodology for CEQA Evaluations (SCAQMD Localized Significance Threshold (LST) Guidance Document).

Construction of the proposed project would occur in four phases, and build-out of all phases of the proposed project is anticipated to take seven years.

***Phase 1: Homes, Services, Open Space, Employment***. The first phase includes four key community redevelopment components: the Family Resource Center, an urban park, seven acres reserved for employment land, 350 to 400 new residences and a new street connecting Century Boulevard to Tweedy Boulevard. No relocation of residents or demolition of existing Jordan Downs public housing residences is required for the implementation of the first phase.

The first part of this phase involves enhancing the existing open space. Following cleanup and remediation of HACLA's 21.08-acre property, an interim open space of over two acres would be added adjacent to the existing Jordan Downs Recreation Center open space. Following the open space enhancements, Century Boulevard would be extended to connect with Tweedy Boulevard. Century Boulevard would be extended as a Non-Arterial Collector Street, with a 64-foot wide right-of-way, in keeping with the residential scale and character of the redevelopment.

***Phase 2: Completing the Park***. The second phase completes the central park, and includes a mixed-use retail plaza along 103rd Street and 350 to 400 new residences. After the second phase is complete, key community resources and facilities that would be in-place include: the Family Resource Center, the complete central park, and the joint-use gymnasium between HACLA and LAUSD. Phase 2 also completes north-south street network, reconnecting Jordan Downs with the surrounding neighborhoods.

***Phase 3: Grape Street & Freedom Tree Park***. The third phase is focused on a small new park around the Freedom Tree. This phase would include 400 to 450 new residences on three blocks along Grape Street.

***Phase 4: The Northern Edge***. The fourth phase completes the residential redevelopment, adding four blocks with 550 to 600 new residences. This phase may also include investments in school grounds and the redevelopment of employment parcels along Alameda Street.

Key assumptions to identify the worst-case construction day for the air quality analysis include:

**Soil Remediation**
- 20 pieces of equipment operating simultaneously for 10 hours per day
- 50 worker vehicle trips per day
- 180 truck trips per day
- 10 acres of land disturbed per day

**Phase 1**
- 20 pieces of equipment operating simultaneously for 10 hours per day
- 50 worker vehicle trips per day
- 50 truck trips per day
- 6.3 acres of land disturbed per day

**Phase 2**
- 20 pieces of equipment operating simultaneously for 10 hours per day
- 50 worker vehicle trips per day
- 50 truck trips per day
- 4.6 acres of land disturbed per day

**Phase 3**
- 20 pieces of equipment operating simultaneously for 10 hours per day
- 50 worker vehicle trips per day
- 50 truck trips per day
- 2.7 acres of land disturbed per day

**Phase 4**
- 20 pieces of equipment operating simultaneously for 10 hours per day
- 50 worker vehicle trips per day
- 50 truck trips per day
- 4.3 acres of land disturbed per day

**Operations**. URBEMIS2007 was also used to calculate operational emissions (i.e., mobile and area sources). Localized CO emissions were calculated utilizing USEPA's CAL3QHC dispersion model and CARB's EMFAC2007 model. EMFAC2007 is the latest emission inventory model for motor vehicles operating on roads in California. This model reflects the CARB's current understanding of how vehicles travel and how much they pollute. The EMFAC2007 model can be used to show how California motor vehicle emissions have changed over time and are projected to change in the future. CAL3QHC is a model developed by USEPA to predict CO and other pollutant concentrations from motor vehicle emissions at roadway intersections. The model uses a traffic algorithm for estimating vehicular queue lengths at signalized intersections.

**Greenhouse Gas Emissions**. Greenhouse gas emissions were calculated for natural gas consumption, general electricity consumption, electricity consumption associated with the use and transport of water, solid waste decomposition, and on-road mobile vehicle operations. Natural gas, electricity, water, and solid waste use rates were obtained from Section IV.Q (Utilities and Service Systems of the Environmental Impact Report. The California Climate Action Registry (CCAR) published version 3.1 of its General Reporting Protocol (Protocol) in January 2009 as a means for businesses, government agencies, and non-profit organizations to calculate GHG emissions from a number of general and industry-specific activities and participate in the CCAR. This Protocol is not intended for CEQA purposes, but it does provide methods that can be used to quantify the GHG emissions. The GHG emission factors from the CCAR Protocol for natural gas and electricity were applied to the respective consumption rates to calculate annual GHG emissions in metric tons. GHG emissions related to natural

gas and electricity consumption were derived using emission factors from the CCAR Protocol. Proposed project and existing electricity use were estimated at 19,088,000 and 7,679,450 kilowatt-hours per year, respectively. Proposed project and existing natural gas consumption were estimated at 10,099,820 and 4,286,470 cubic feet per month, respectively.

California's water infrastructure uses energy to collect, move, and treat water; dispose of wastewater; and power the large pumps that move water throughout the State. California consumers also use energy to heat, cool, and pressurize the water they use in their homes and businesses. Together these water-related energy uses annually account for roughly 20 percent of the State's electricity consumption, one-third of non-power plant natural gas consumption, and about 88 million gallons of diesel fuel consumption. The California Energy Commission has reported that the energy intensity of the water use cycle in Southern California is 12,700 kilowatt-hours per million gallons. Water use was obtained from Section IV.Q (Utilities and Service Systems) of the Environmental Impact Report. Total water use (potable and wastewater) would be approximately 1,005,338 gallons per day for the proposed project. Existing uses consume approximately 966,841 gallons per day.

Solid waste was estimated using generation rates provided by the California Department of Resources Recycling and Recovery. USEPA has stated that solid waste decomposition generates 3.1 metric tons of $CO_2e$ per ton of waste. Proposed project and existing solid waste were estimated at 34,783 and 11,508 pounds per day, respectively.

Mobile source GHG emissions were based on a series of technical memoranda completed by Terry A. Hayes Associates Inc. for the Jordan Downs Specific Plan. The analysis was based on vehicle trip information was obtained from the SCAG Transportation Demand Model. The trip generation component of the Transportation Demand Model relies heavily on socioeconomic variables, such as residential population, households, household income, workers, and employment by type to estimate trip generation, distribution, mode choice, and trip assignment. The greater Los Angeles area is geographically divided into Transportation Analysis Zones (TAZs). The TAZs provide the spatial unit (or geographical area) within which travel behavior and traffic generation are estimated. Trip generation is the process of estimating daily person trips for an average weekday generated by households within each TAZ. The Model contains a series of smaller models to estimate trip productions and trip attractions by trip type. The trip production models estimate the number of person trips generated in each TAZ, and trip attraction models estimate the number of person trips attracted to each TAZ. Trip productions and attractions have been combined to create a simplified relationship of the origin and destination relationships between all TAZs in the geographic range of the Model. These relationships are commonly referred to as a trip table. The trip tables used in this analysis represent the cross-referenced relationship between approximately 4,109 TAZs in the region. The trip tables have been developed to show detailed relationships between the TAZs in Los Angeles County and are summarized for outlying areas in Orange, San Bernardino and Riverside counties likely to be unaffected by travel activity at Jordan Downs.

The mobile source analysis was based on three trip purposes: Home-to-Other, Home-to-Work, and Work-Based-Other combined with Other-Based-Other. These trip purposes typically represent the majority of trips within a residential area. The analysis assessed changes to vehicles miles traveled associated with existing residences, retained residents, market-rate residents, and employment uses. Refer to the *Jordan Downs Specific Plan Mobile Source Greenhouse Gas Emissions Analysis* in the Air Quality Appendix for a detailed mobile source discussion.[11]

[11]Terry A. Hayes Associates Inc., *Jordan Downs Specific Plan Mobile Source Greenhouse Gas Emissions Analysis*, June 22, 2010.

**Analysis of Proposed Project Impacts**

**Construction Impacts**

**Regional Impacts**. Construction of the proposed project has the potential to create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated by construction workers traveling to and from the Specific Plan area. Fugitive dust emissions would primarily result from demolition and site preparation (e.g., excavation) activities. $NO_X$ emissions would primarily result from the use of construction equipment and truck trips. During the finishing phase, paving operations and the application of architectural coatings (e.g., paints) and other building materials would release VOC. The assessment of construction air quality impacts considers each of these potential sources. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions.

It is mandatory for all construction projects in the Basin to comply with SCAQMD Rule 403 for Fugitive Dust. Specific Rule 403 control requirements include, but are not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the Specific Plan area, and maintaining effective cover over exposed areas. Compliance with Rule 403 would reduce $PM_{2.5}$ and $PM_{10}$ emissions associated with construction activities by approximately 61 percent.

Regional construction emissions are shown in **Table IV.C-5**. Emissions are presented for the worst-case day associated with each construction phase. Refer to the air quality appendix for a detailed breakdown of phased emissions and construction assumptions. The proposed project would result in VOC, $NO_X$, and $PM_{10}$ impacts during the various phases of construction activity. Regional construction emissions would result in a significant impact.

**TABLE IV.C-5: REGIONAL CONSTRUCTION EMISSIONS - UNMITIGATED**

| | Pounds Per Day | | | | | |
|---|---|---|---|---|---|---|
| **Construction Phase** | **VOC** | **$NO_X$** | **CO** | **$SO_X$** | **$PM_{2.5}$** | **$PM_{10}$** |
| Soil Remediation | 38 | 313 | 164 | <1 | 52 | 198 |
| Phase 1 | 856 | 214 | 114 | <1 | 29 | 105 |
| Phase 2 | 741 | 181 | 104 | <1 | 22 | 77 |
| Phase 3 | 691 | 151 | 96 | <1 | 16 | 49 |
| Phase 4 | 1,247 | 126 | 90 | <1 | 19 | 70 |
| | | | | | | |
| **Maximum Regional Total** | 1,247 | 313 | 164 | <1 | 52 | 198 |
| **Regional Significance Threshold** | **75** | **100** | **550** | **150** | **55** | **150** |
| Exceed Threshold? | Yes | Yes | No | No | No | Yes |

**SOURCE**: TAHA, 2010.

**Localized Impacts**. Localized construction concentrations were modeled using the USEPA AERMOD dispersion mode. Concentrations are presented for the worst-case soil remediation phase. This phase would disturb the largest amount of area per day and would generate the highest pollutant concentrations. In addition, soil remediation construction activity would be located adjacent to on- and off-site sensitive land uses. As shown in **Table IV.C-6**, localized concentrations would exceed the significance thresholds for $PM_{2.5}$ and $PM_{10}$ at off- and on-site sensitive receptors. Localized construction concentrations would result in a significant impact.

| TABLE IV.C-6: LOCALIZED CONSTRUCTION EMISSIONS - UNMITIGATED | | | | |
|---|---|---|---|---|
| **Pollutant and Location** | **Estimated Emissions (lbs/day)** | **Concentration at nearest sensitive receptor** | **Significance Threshold** | **Significant Impact?** |
| **Off-Site** | | | | |
| $PM_{2.5}$ | 47 | 113 ug/$m^3$ | 10.4 ug/$m^3$ | Yes |
| $PM_{10}$ | 193 | 471 ug/$m^3$ | 10.4 ug/$m^3$ | Yes |
| $NO_2$ | 17 | 0.08 ppm | 0.18 ppm | No |
| CO (One-Hour) | 87 | 0.7 ppm | 20 ppm | No |
| CO (Eight-Hour) | 87 | 0.4 ppm | 9.0 ppm | No |
| **On-Site** | | | | |
| $PM_{2.5}$ | 47 | 120 ug/$m^3$ | 10.4 ug/$m^3$ | Yes |
| $PM_{10}$ | 193 | 502 ug/$m^3$ | 10.4 ug/$m^3$ | Yes |
| $NO_2$ | 17 | 0.09 ppm | 0.18 ppm | No |
| CO (One-Hour) | 87 | 0.7 ppm | 20 ppm | No |
| CO (Eight-Hour) | 87 | 0.4 ppm | 9.0 ppm | No |
| **SOURCE:** TAHA, 2010. | | | | |

**Toxic Air Contaminant Impacts**. The greatest potential for TAC emissions during construction would be diesel particulate emissions associated with heavy equipment operations. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person continuously exposed to concentrations of TACs over a 70-year lifetime will contract cancer based on the use of standard risk assessment methodology. Given the construction schedule of approximately seven years, the proposed project would not result in a long-term (i.e., 70 years) source of TAC emissions. No residual emissions and corresponding individual cancer risk are anticipated after construction. Because there is such a short-term exposure period (7 out of 70 years), project-related construction TAC emission would result in a less-than-significant impact.

**Odor Impacts**. Potential sources that may emit odors during construction activities include equipment exhaust and architectural coatings. Odors from these sources would be localized and generally confined to the immediate area surrounding the Specific Plan area. The proposed project would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Proposed project construction would not cause an odor nuisance. Construction odors would result in a less-than-significant impact.

**Operational Impacts**

**Regional Impacts**. Long-term project emissions would be generated by mobile sources and area sources, such as natural gas combustion. Motor vehicles that access the Specific Plan area would be the predominant source of long-term project emissions. The proposed project would generate 14,150 net daily vehicle trips.[12] As shown in **Table IV.C-7**, regional operational emissions would exceed the significance thresholds for VOC, $NO_X$, CO, and $PM_{10}$. Regional emissions would result in a significant impact without mitigation.

[12]Iteris, *Jordan Downs Specific Plan Traffic Impact Study*, June 2010.

**TABLE IV.C-7: NET DAILY OPERATIONAL EMISSIONS**

| Emission Source | Pounds per Day | | | | | |
|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $SO_X$ | $PM_{2.5}$ | $PM_{10}$ |
| **Proposed Project** | | | | | | |
| Mobile Sources | 97 | 124 | 1,023 | 2 | 67 | 343 |
| Area Sources | 95 | 21 | 26 | <1 | <1 | <1 |
| *Emissions Subtotal* | *192* | *145* | *1,049* | *2* | *67* | *343* |
| **Removed Land Uses** | | | | | | |
| Mobile Sources | 26 | 34 | 281 | 1 | 18 | 94 |
| Area Sources | 37 | 8 | 7 | <1 | <1 | <1 |
| *Emissions Subtotal* | *63* | *42* | *288* | *1* | *18* | *94* |
| **Net Emissions** | **129** | **103** | **761** | **1** | **49** | **249** |
| **SCAQMD Threshold** | **55** | **55** | **550** | **150** | **55** | **150** |
| Exceed Threshold? | **Yes** | **Yes** | **Yes** | No | No | **Yes** |

**SOURCE**: TAHA, 2010.

**Localized Impacts**. The State one- and eight-hour CO standards may potentially be exceeded at congested intersections with high traffic volumes. An exceedance of the State CO standards at an intersection is referred to as a CO hotspot. The SCAQMD recommends a CO hotspot evaluation of potential localized CO impacts when volume to capacity (V/C) ratios increase by two percent at intersections with a Level of Service (LOS) of D or worse.[13] SCAQMD also recommends a CO hotspot evaluation when an intersection decreases in LOS by one level beginning when LOS changes from C to D.

Based on the traffic study, the following intersections were selected for the following peak hours:

- Alameda Street and Century Boulevard – AM Peak Hour
- Alameda Street and Imperial Highway – PM Peak Hour
- Wilmington Avenue and I-105 EB Ramps – AM Peak Hour
- Wilmington Avenue and I-105 EB Ramps – PM Peak Hour
- Compton Avenue and 108th Street – AM Peak Hour
- Central Avenue and Century Boulevard– PM Peak Hour

The USEPA CAL3QHC micro-scale dispersion model was used to calculate CO concentrations. CO concentrations at the analyzed intersections are shown in **Table IV.C-8**. One-hour CO concentrations under project conditions would be approximately 5 ppm at worst-case sidewalk receptors. Eight-hour CO concentrations under project conditions would be approximately 3.9 ppm at worst-case sidewalk receptors. The State one- and eight-hour standards of 20 and 9.0 ppm, respectively, would not be exceeded at the analyzed intersections. Localized CO concentrations would result in a less-than-significant impact.

**Toxic Air Contaminant Impacts**. The proposed project would locate new residential land uses near proposed and existing light industrial land uses. Specific new light industrial land uses have not been identified and a detailed air quality analysis would be speculative. Existing light industrial land uses along Alameda Street currently generate TAC emissions (e.g., diesel particulate matter). All proposed and existing land uses would comply with SCAQMD rules and regulations to control toxic emissions.

[13]Level of service is used to indicate the quality of traffic flow on roadway segments and at intersections. Level of service ranges from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion). LOS is explained in greater detail in Section IV.P Traffic and Transportation.

Regardless, light industrial land uses would potentially expose new residents to a variety of TACs, and TAC emissions would result in a significant impact.

**TABLE IV.C-8: ESTIMATED CARBON MONOXIDE CONCENTRATIONS**

| Intersection | 1-hour (parts per million) | 8-hour (parts per million) |
|---|---|---|
| Alameda Street and Century Boulevard – AM Peak Hour | 5 | 3.7 |
| Alameda Street and Imperial Highway – PM Peak Hour | 5 | 3.9 |
| Wilmington Avenue and I-105 EB Ramps – AM Peak Hour | 5 | 3.8 |
| Wilmington Avenue and I-105 EB Ramps – PM Peak Hour | 5 | 3.7 |
| Compton Avenue and 108th Street – AM Peak Hour | 4 | 3.7 |
| Central Avenue and Century Boulevard– PM Peak Hour | 5 | 3.7 |
| **State Standard** | **20** | **9.0** |

**SOURCE:** TAHA, 2010.

The proposed project would also locate residential land uses in close proximity to the Alameda Corridor rail line. Recent research has revealed that pollutants found in close proximity to sources of diesel particulate matter are associated with a variety of adverse health effects, independent of regional air quality impacts. These can include reduced lung capacity and growth; cardiopulmonary disease; increased incidence of low birth weight, premature birth and birth defects; and exacerbation of asthma. An AERMOD dispersion modeling analysis was completed to assess rail-related particulate matter concentrations at the project site. The analysis was completed based on train frequency information contained in the *Alameda Corridor Air Quality Benefits Report* (Weston Solutions, Inc., 2005) and locomotive emission rates published by the USEPA. The analysis was based on 66 rail haul trips per day each with four 1,361-brake-horsepower locomotives. The modeling indicated that rail-related $PM_{2.5}$ concentrations would be 0.01 ug/$m^3$ at the nearest proposed residence.

At this time no methodology has been established to quantitatively assess the impacts from some of the pollutants thought to be responsible for the previously described health effects (e.g. ultrafine particles). Nonetheless, it is clear that the concentration of these pollutants increases substantially in close proximity to sources of diesel particulate matter. Exposure to diesel particulate matter emitted by trains using the Alameda Corridor would result in a significant impact.

**Odor Impacts**. According to the SCAQMD *CEQA Air Quality Handbook*, land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies and fiberglass molding. The Specific Plan area would not be developed with land uses that are typically associated with odor complaints. On-site trash receptacles would have the potential to create adverse odors. Trash receptacles would be located and maintained in a manner that promotes odor control and no adverse odor impacts are anticipated from these types of land uses.

Existing and proposed light industrial uses on the eastern side of the Specific Plan area may generate odors. These odors would be adjacent to new and existing sensitive land uses. The primary wind direction in the vicinity of the Specific Plan area is from west toward the east. As with existing conditions, the majority of odors would travel east and across the Alameda Corridor. Odors typically dissipate rapidly with distance as the odors disperse with meteorological conditions. Light industrial odors would typically be perceptible at sensitive land uses, and odors would result in a less-than-significant impact.

Therefore, the proposed project would not result in activities that create objectionable odors. Impacts would be less than significant.

**AQMP Consistency**. The 2007 AQMP was prepared to accommodate growth, to reduce the high levels of pollutants within areas under the jurisdiction of SCAQMD, to return clean air to the region, and to minimize the impact on the economy. The AQMP includes short-term control measures for stationary and mobile sources developed by the SCAQMD. As shown in **Table IV.C-9**, the proposed project would not interfere with implementation of these control measures. The proposed project would be consistent with the AQMP, and the impact would be less than significant.

**City of Los Angeles General Plan Air Quality Element**. The City's General Plan Air Quality Element serves to aid the greater Los Angeles region in attaining federal and State ambient air quality standards at the earliest feasible date, while still maintaining economic growth and improving the quality of life. Air Quality Element policies relevant to the proposed project and project consistency are discussed below.

- Policy 1.3.1: *Minimize particulate emissions from construction sites* – It is mandatory for all construction projects in the Basin to comply with SCAQMD Rule 403 for Fugitive Dust. Specific Rule 403 control requirements include, but are not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, using a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the Specific Plan area, and maintaining effective cover over exposed areas. Compliance with Rule 403 would reduce fugitive dust emissions associated with construction activities by approximately 61 percent.

- Policy 4.2.2: *Improve accessibility for the City's residents to places of employment, shopping centers, and other establishments* – The proposed project would include a mix of land uses. Implementation of the Specific Plan would replace the existing 700 Jordan Downs public housing units, one-for-one, and build up to 1,100 additional affordable and market rate units built in a variety of residential building types, including townhouses and stacked flats in multiple and varied configurations. Implementation of the Specific Plan could also include up to 500,000 gross square feet (gsf) of new commercial, retail and light industrial space on approximately seven acres along Alameda Street, plus 20,000 gsf of community-serving retail and services in mixed-use buildings.

- Policy 4.2.3: *Ensure that new development is compatible with pedestrians, bicycles, transit, and alternative fuel vehicles* – One of the objectives of the proposed project is to create a safe and pedestrian friendly environment. The Specific Plan allows the future development to use proven techniques such as variable setbacks to maximize usable public and private open space and shared common open space and to encourage pedestrian activity. The Specific Plan area will include bicycle lanes and charging stations for alternatively-fueled vehicles.

  The Specific Plan area is served by nine public transit operators: the Los Angeles County Metropolitan Transportation Authority, Hahn's Trolley/Shuttle, the Rosewood Smart Shuttle, Compton Renaissance Transit, the Orange County Transportation Authority, Gardena Transit, Torrance Transit, the Los Angeles Department of Transportation, and the Lynwood Trolley. Together, these operators run a total of 52 local routes, limited stop routes, express routes, and rapid bus routes within two miles of the Specific Plan area. In addition, the Metro Blue Line (light rail) 103rd Street Station is located approximately 0.8 miles west of the Specific Plan area and the Metro Green Line Wilmington Station is located approximately 1.25 miles south of the Specific Plan area. Both light rail stations are accessible from the Specific Plan vicinity by bus.

- Policy 4.2.4: *Require that air quality impacts be a consideration in the review and approval of all discretionary projects* – This Air Quality Section of the Environmental Impact Report is a comprehensive assessment of potential impacts based on SCAQMD guidance.

| TABLE IV.C-9: PROJECT CONSISTENCY WITH THE AIR QUALITY MANAGEMENT PLAN | |
|---|---|
| **Control Measure** | **Project Consistency** |
| **Facility Modernization** | |
| Facility Modernization ($NO_X$, VOC, and $PM_{2.5}$) | **Not Applicable**: The proposed project would be a new development and would not include modernization. In addition, all new stationary sources would comply with SCAQMD rules and regulations to control emissions. |
| **Energy Efficiency/Conservation** | |
| Urban Heat Island (All Pollutants) | **Consistent**: The proposed project includes detailed landscape and open space guidelines to provide maximum green space. The proposed project would re-zone 11.36 acres of the Specific Plan area to Open Space and Public Facilities, and would include a 6.38-acre Central Park and 2.57 acres of other open space and plazas. |
| Energy Efficiency and Conservation (All Pollutants) | **Consistent**: The proposed project has been designed to meet LEED ND sustainability goals at the Gold certification level or higher. Specific measures include on-site renewable energy to provide domestic hot water and energy efficient street lights and traffic lights. |
| **Good Management Practices** | |
| Improved Leak Detection and Repair (VOC) | **Not Applicable**: The proposed project would not include oil and gas production facilities, petroleum and chemical products processing, storage and transfer facilities, marine terminals, or other sources contributing to fugitive VOC emissions from piping components. |
| Emission Reductions from Gasoline Transfer and Dispensing Facilities (VOC) | **Not Applicable**: The proposed project would not include gasoline transfer and dispensing facilities. |
| Further Emission Reductions from Pipeline and Storage Tank Degassing (VOC) | **Not Applicable**: The proposed project would not include gasoline sources of pipeline and storage tank degassing. |
| PM Control Devices (Baghouses, Wet Scrubbers, Electrostatic Precipitators, and Other Devices) (PM) | **Consistent**: All stationary sources would comply with SCAQMD rules and regulations to control emissions. |
| Emissions Reduction from Green Waste Composting (VOC and PM) | **Not Applicable**: The proposed project would not include a green waste composting facility. |
| Improved Start-up, Shut-down & Turnaround Procedures (All Pollutants) | **Not Applicable**: The proposed project would not include major stationary sources with start-up and shut-down procedures. |
| **Market Incentives/Compliance Flexibility** | |
| Clean Coatings Certification Program (VOC) | **Consistent**: The proposed project would utilize super-compliant architectural coatings as defined by the SCAQMD (Mitigation Measure **AQ8**). |
| Further SOx Reduction for RECLAIM ($SO_X$) | **Not Applicable**: The proposed project would not include stationary sources of $SO_X$ emissions. |
| Clean Air Act Emission Fees for Major Stationary Sources (VOC and $NO_X$) | **Not Applicable**: The proposed project would not include major stationary sources (e.g., power plants). |
| Economic Incentive Programs (All Pollutants) | **Not Applicable**: The proposed project would not include major sources of mobile (e.g., warehouse distribution facilities) or stationary emissions (e.g., power plants). |
| Petroleum Refinery Pilot Program [VOC and $PM_{2.5}$) | **Not Applicable**: The proposed project would not include a petroleum refinery. |
| **Emission Growth Management** | |
| Emission Reductions from New or Redevelopment Projects ($NO_X$, VOC and $PM_{2.5}$) | **Consistent**: All stationary sources would comply with SCAQMD rules and regulations to control emissions. The proposed project has been designed to meet LEED ND sustainability goals at the Gold certification level or higher. |
| Emission Budget and Mitigation for General Conformity Projects (All Pollutants) | **Not Applicable**: The proposed project does not require a federal conformity analysis. |
| Emissions Mitigation at Federally Permitted Projects (All Pollutants) | **Not Applicable**: The proposed project does not require federal permits. |
| **SOURCE:** TAHA, 2010. | |

- Policy 4.2.5: *Emphasize trip reduction, alternative transit, and congestion management measures for discretionary projects* – As previously discussed, the Specific Plan area is served by nine public transit operators and light rail. In addition, the Specific Plan will be designed to encourage walking and biking while discouraging local vehicle trips.

- Policy 5.1.2: *Effect a reduction in energy consumption and shift to non-polluting sources of energy in its buildings and operations* - The proposed project has been designed to meet Leadership in Energy and Environmental Design for Neighborhood Development. Sustainability goals that have been incorporated into the proposed project include on-site renewable energy sources and energy reduction measures.

Based on this analysis, the proposed project would be consistent with the City of Los Angeles General Plan Air Quality Element.

## CUMULATIVE IMPACTS

### SCAQMD Methodology and Criteria Pollutants

The related projects include the development of hundreds of thousands of square feet of commercial and residential uses, a number that is many times greater than the proposed project. As the proposed project results in a regionally significant impact during construction and operation, it is anticipated that related project development would also result in significant regional impacts. While SCAQMD required mitigation measures would reduce air quality impacts, it is forecasted that the construction and operation of the related projects, in addition to the proposed project, would result in a regionally cumulatively considerable impact.

### Global Climate Change and Greenhouse Gas Emissions

**Sustainability Features**. The proposed project has been designed to meet Leadership in Energy and Environmental Design for Neighborhood Development (LEED ND). LEED ND is a rating system that integrates the principles of smart growth, new urbanism, and green building into the first national standard for neighborhood design. Using the framework of other LEED rating systems, LEED ND recognizes development projects that successfully protect and enhance the overall health, natural environment, and quality of life of communities. The rating system encourages smart growth and new urbanism best practices, promoting the location and design of neighborhoods that reduce vehicle miles traveled and communities where jobs and services are accessible by foot or public transit. As discussed in the *Master Plan Sustainability Report*, the proposed project has been designed to meet LEED ND sustainability goals at the Gold certification level.[14] Highlights of the sustainability goals that have been incorporated into the proposed project include:

- Appropriate building massing and density to create a human-scaled community that relates to the scale of the surrounding communities;
- Walkable, pedestrian-friendly streets to promote socializing and physical activity;
- Capitalizing on public transportation to reduce vehicle usage;
- Significant reduction in potable water used for irrigation through native and drought tolerant plants and drip irrigation;
- Reduction of heat island effect through appropriate placement of trees to provide shading to hardscape areas that are prone to collect heat;
- Stormwater retention to reduce stormwater runoff and pollutants;

[14]Davis Langdon, *Master Plan Sustainability Report For Jordan Downs Redevelopment*, December 18, 2009.

- Stormwater retention tanks will provide irrigation to landscaping thus potentially reducing some landscaped areas of the Specific Plan area to no potable water use for irrigation;
- On-site renewable energy source implemented as solar hot water panels on the rooftops and other appropriate locations to provide domestic hot water;
- Reduction of energy consumption of infrastructure of the project by providing energy efficient street lights and traffic lights; and
- Recycling of existing material on site for building new infrastructure, including crushing of existing asphalt paving and concrete sidewalks to be reused in new infrastructure.

**Greenhouse Gas Emissions**. Greenhouse gas emissions were calculated for on-road mobile vehicle operations, general electricity consumption, electricity consumption associated with the use and transport of water, natural gas consumption, and solid waste decomposition. Based on SCAQMD guidance, the emissions summary also includes construction emissions amortized over a 30-year span. As shown in **Table IV.C-10**, the proposed project would result in 6.2 metric tons of $CO_2e$ per year per service population. GHG emissions would exceed the 4.6 metric tons of $CO_2e$ per year per service population significance threshold, and would result in a significant impact.

**TABLE IV.C-10: ESTIMATED ANNUAL GREENHOUSE GAS EMISSIONS**

| Scenario and Source | Carbon Dioxide Equivalent (Metric Tons per Year) |
|---|---|
| Proposed Project | |
| Mobile | 23,451 |
| Electricity – General | 7,002 |
| Electricity – Water Cycle | 1,710 |
| Natural Gas | 4,468 |
| Solid Waste Decomposition | 19,678 |
| Construction Emissions Amortized | 3,454 |
| **Total Proposed Project** | **59,764** |
| Existing Removed | |
| Mobile | 60 |
| Electricity – General | 2,818 |
| Electricity – Water Cycle | 1,645 |
| Natural Gas | 1,622 |
| Solid Waste Decomposition | 6,511 |
| **Total Existing** | **12,655** |
| **Total Net Project Emissions** | **47,109** |
| **Emissions Per Service Population /a/** | **6.2** |

/a/Based on a service population of 6,191 residents and 1,376 employees.
**SOURCE**: TAHA, 2010.

**Discussion**. The redevelopment of the Jordan Downs Public Housing Project as a mixed-income environment with supporting open space, public services and shopping opportunities is an important benefit to the greater Watts and Southeast Los Angeles community. However, that benefit is not directly transferred into GHG emissions reductions. The majority of GHG emissions would be generated by motorized sources. The *Jordan Downs Specific Plan Mobile Source Greenhouse Gas Emissions Analysis* shows that there is a strong correlation between increased incomes and increased vehicle miles traveled (VMT).[15] Higher resident incomes, both as a result of the human capital program as well as through the introduction of 900 to 1,100 market units, would bring an increase in total trips and trip length. Human

[15]Terry A. Hayes Associates, Inc., *Jordan Downs Specific Plan Mobile Source Greenhouse Gas Emissions Analysis*, June 22, 2010.

capital beneficiaries would be expected to travel to new job opportunities (that currently do not exist) and, as a result of increased income, have access to shopping opportunities in other communities throughout the region. Residents in South Los Angeles must travel significant distances to places of employment, as well as to access services like full-service supermarkets, quality sit-down restaurants and quality schools. Increasing population density at the Jordan Downs location, at least in the short term, may exacerbate and reinforce these trip-making patterns.

For higher-income residents, both work-related and discretionary trips would initially continue to be tied to existing commute patterns, i.e., to and from their existing jobs, which would likely be located outside the immediate vicinity of Jordan Downs. As a result, both VMT and GHG emissions increase as a result of the proposed project. This project currently suffers from the disadvantage of lower job density and limited purchasing options. In order to reduce VMT, the investment in housing and job training must be combined with providing more efficient transit infrastructure and a renewed emphasis in attracting and creating employment and retail centers within and near the reinvestment site. GHG emissions can be reduced through either lowering VMT or increasing less polluting modes of transportation. In this case, it is infeasible to reduce VMT below the baseline due the combination of the low number of trips in the baseline and the lack of accessibility (meaning both mode of travel and location of services). The large increase in GHG emissions associated with Jordan Downs and in particular with the influx of market-rate residents underscores the importance of ensuring that historically underserved communities receive a fair share of the benefits of the transportation system.

However, there are additional factors that cannot be easily quantified but emphasize the importance of coordinated planning efforts if Statewide GHG emissions targets are to be achieved. Ultimately, average trips and trip lengths can be reduced on a per capita basis through smart urban design at the regional and local level. Opportunities exist through the inclusion of Jordan Downs within the expanded Watts Redevelopment area through increased access to investment. One example is the proposed Wattstar Theater project, which proposes to place a theater adjacent to the 103rd Street Blue Line Station. Another example is the re-routing of the Metro Local 117 bus line from 103rd Street through Jordan Downs, with stops connecting the commercial center along Alameda Street, the Family Resource Center, the gym, David Starr Jordan High School and the retail plaza along 103rd Street. Additional opportunities exist through coordinated efforts among the local transit agencies to maximize the existing connections to the Metro Blue Line and Green Line. Specific emphasis should be placed on expanding more frequent feeder bus service to the Blue and Green light rail lines, and LADOT shuttle circulator services should be revisited to ensure that there adequate transit to meet the needs of a wide range of non-work related discretionary trips. HACLA is able to provide a good-faith effort to coordinate smart urban design and improved transit routing. However, implementation of these efforts is ultimately contingent on agencies and economic forces outside HACLA's direct control.

Coordinated efforts may reduce mobile source GHG emissions in the long-term and reduce emissions per service population. In addition, the proposed project has been designed to meet Leadership in Energy and Environmental Design for Neighborhood Development. Regardless, in the short-term, GHG emissions would exceed the significance criteria and would result in a significant impact.

## MITIGATION MEASURES

### *Construction Phase Air Quality Mitigation Measures*

**AQ1** The construction area and all accessible areas (public streets, sidewalks, etc.) within 100 feet of the Specific Plan area shall be swept (preferably with water sweepers) and watered at least twice daily.

**AQ2** Construction contractors shall utilize at least one of the following measures at each vehicle egress from the Specific Plan area to a paved public road:

- Install a pad consisting of washed gravel maintained in clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long;
- Pave the surface extending at least 100 feet and at least 20 feet wide;
- Utilize a wheel shaker/wheel spreading device consisting of raised dividers at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages; or
- Install a wheel washing system to remove bulk material from tires and vehicle undercarriages.

**AQ3** Site access points shall be swept/washed within thirty minutes of visible dirt deposition. Street sweepers that comply with SCAQMD Rule 1186 and 1186.1 shall be used to sweep site access points or reclaimed water shall be used to wash site access points.

**AQ4** All haul trucks hauling soil, sand, and other loose materials shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).

**AQ5** Construction contractors activity on unpaved surfaces shall be suspended when winds exceed 25 miles per hour.

**AQ6** Heavy-duty equipment operations shall be suspended during first and second stage smog alerts.

**AQ7** Ground cover in disturbed areas shall be replaced as quickly as possible.

**AQ8** Construction contractors shall utilize super-compliant architectural coatings as defined by the SCAQMD (VOC standard of less than ten grams per liter[16]).

**AQ9** Construction contractors shall utilize materials that do not require painting, as feasible.

**AQ10** Construction contractors shall use pre-painted construction materials, as feasible.

**AQ11** Contractors shall maintain equipment and vehicle engines in good condition and in proper tune per manufacturers' specifications.

**AQ12** All diesel-powered construction equipment shall meet USEPA Tier 2 or higher emissions standards according to the following schedule:

- **April 1, 2010, to December 31, 2011**: All offroad diesel-powered construction equipment greater than 50 horsepower shall meet Tier 2 offroad emissions standards. In addition, all construction equipment shall be outfitted with the BACT devices certified by

[16]SCAQMD, Super-Compliant Architectural Coatings Manufacturers and Industrial Maintenance Coatings List, http://www.aqmd.gov/prdas/Coatings/super-compliantlist.htm.

CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 2 or Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

- **January 1, 2012, to December 31, 2014**: All offroad diesel-powered construction equipment greater than 50 horsepower shall meet Tier 3 offroad emissions standards. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

- **Post-January 1, 2015**: All offroad diesel-powered construction equipment greater than 50 horsepower shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

**AQ13** Construction contractors shall use electricity from power poles rather than temporary gasoline or diesel power generators, as feasible.

**AQ14** Heavy-duty trucks shall be prohibited from idling in excess of five minutes, both on- and off-site.

**AQ15** Construction parking shall be configured to minimize traffic interference.

**AQ16** Construction activity that affects traffic flow on the arterial system shall be limited to off-peak hours.

**AQ17** Construction contractors shall coordinate with administrators at David Starr Jordan High School, Florence Griffith Joyner Elementary School, and Weigand Elementary School and to minimize student exposure to air pollution during periods of heavy construction activity (e.g., grading and excavation).

***Operational Phase Air Quality Mitigation Measures***

**AQ18** Informational signs shall be provided that locate nearby public transportation options.

**AQ19** The surface parking area for the employment uses shall provide charging stations for electric vehicles.

**AQ20** Equipment (e.g., forklifts and carts) used during operations of the employment uses shall use alternative power (e.g., electricity or propane) instead of diesel fuels.

**AQ21** Delivery trucks shall be prohibited from idling in excess of five minutes.

**AQ22** The Applicant shall require by contract specifications that electrical outlets are included in the building design of the loading docks to allow use by refrigerated delivery trucks. If loading and/or unloading of perishable goods would occur for more than five minutes, and continual refrigeration is required, all refrigerated delivery trucks shall use the electrical outlets to continue powering the truck refrigeration units when the delivery truck engine is turned off.

**AQ23** Automatic lighting on/off controls and energy-efficient lighting shall be installed at the employment uses.

**AQ24** Residential units shall include Heating, Ventilation, and Air Conditioning Systems with a minimum efficiency reporting value of 13.

**AQ25** HACLA shall continue coordinating with responsible agencies to study ways to increase job opportunities and regional transit in the vicinity of the Specific Plan area.

## LEVEL OF SIGNIFICANCE AFTER MITIGATION

### Construction Air Quality Impacts after Mitigation

Mitigation Measures **AQ1** through **AQ7** would ensure compliance with SCAQMD Rule 403. The SCAQMD has identified super-compliant architectural coatings that have a VOC standard of less than ten grams per liter.[17] Mitigation Measure **AQ8** would reduce architectural coating emissions by 96 percent, and would eliminate the unmitigated VOC impact.[18] Mitigation Measures **AQ9** and **AQ10** would also reduce VOC emissions. Mitigation Measures **AQ11** through **AQ13**, while difficult to quantify, would reduce exhaust emissions by at least five percent. Mitigation Measures **AQ14** and **AQ16** would also control exhaust emissions. Mitigation Measures **AQ17** would limit pollutant concentrations at educational facilities.

Mitigated regional construction emissions and localized construction concentrations are shown in **Tables IV.C-11** and **IV.C-12**, respectably. Regional emissions and localized concentrations would still exceed the significance thresholds at off-site and on-site receptors. Construction emissions would result in an unavoidable significant impact.

**TABLE IV.C-11: REGIONAL CONSTRUCTION EMISSIONS - MITIGATED**

| | Pounds Per Day | | | | | |
|---|---|---|---|---|---|---|
| **Construction Phase** | **VOC** | **$NO_X$** | **CO** | **$SO_X$** | **$PM_{2.5}$** | **$PM_{10}$** |
| Soil Remediation | 36 | 305 | 160 | <1 | 52 | 198 |
| Phase 1 | 57 | 214 | 114 | <1 | 29 | 105 |
| Phase 2 | 49 | 181 | 104 | <1 | 22 | 77 |
| Phase 3 | 44 | 151 | 96 | <1 | 16 | 49 |
| Phase 4 | 64 | 126 | 90 | <1 | 19 | 70 |
| **Maximum Regional Total** | 64 | 313 | 164 | <1 | 52 | 198 |
| **Regional Significance Threshold** | **75** | **100** | **550** | **150** | **55** | **150** |
| Exceed Threshold? | No | Yes | No | No | No | Yes |

**SOURCE**: TAHA, 2010.

[17]SCAQMD, Super-Compliant Architectural Coatings Manufacturers and Industrial Maintenance Coatings List, http://www.aqmd.gov/prdas/Coatings/super-compliantlist.htm.

[18]The URBEMIS2007 model assumes a VOC content of 250 grams per liter.

| TABLE IV.C-12: LOCALIZED CONSTRUCTION EMISSIONS - MITIGATED | | | | |
|---|---|---|---|---|
| **Pollutant and Location** | **Estimated Emissions (lbs/day)** | **Concentration at nearest sensitive receptor** | **Significance Threshold** | **Significant Impact?** |
| **Off-Site** | | | | |
| $PM_{2.5}$ | 47 | 113 ug/$m^3$ | 10.4 ug/$m^3$ | Yes |
| $PM_{10}$ | 193 | 470 ug/$m^3$ | 10.4 ug/$m^3$ | Yes |
| $NO_2$ | 17 | 0.08 ppm | 0.18 ppm | No |
| CO (One-Hour) | 87 | 0.6 ppm | 20 ppm | No |
| CO (Eight-Hour) | 87 | 0.4 ppm | 9.0 ppm | No |
| **On-Site** | | | | |
| $PM_{2.5}$ | 46 | 119 ug/$m^3$ | 10.4 ug/$m^3$ | Yes |
| $PM_{10}$ | 192 | 501 ug/$m^3$ | 10.4 ug/$m^3$ | Yes |
| $NO_2$ | 16 | 0.08 ppm | 0.18 ppm | No |
| CO (One-Hour) | 83 | 0.7 ppm | 20 ppm | No |
| CO (Eight-Hour) | 83 | 0.4 ppm | 9.0 ppm | No |

**SOURCE:** TAHA, 2010.

**Operational Air Quality Impacts after Mitigation**

While difficult to quantify, Mitigation Measures **AQ18** through **AQ23** would reduce regional emissions. The majority of emissions would result from mobile sources. Mobile source emissions cannot be substantially reduced though mitigation as the Applicant cannot reasonably impose mitigation on private vehicles. Regional operational emissions would result in an unavoidable adverse significant air quality impact.

Mitigation Measure **AQ24** would reduce residential exposure to TAC emissions from the Alameda Corridor and light industrial land uses. Toxic air contaminant exposure would result in a less-than-significant impact after mitigation.

Mitigation Measure **AQ25** would ensure that efforts are continued to increase job opportunities and regional transit in the Specific Plan area. This would ultimately reduce regional vehicles miles traveled and associated GHG emissions. As previously discussed, the proposed project has been designed to meet LEED ND sustainability goals at the Gold certification level. The sustainability features associated with this certification would contribute to reducing GHG emissions associated with transportation, energy consumption, and water consumption. For example, total water use (potable and wastewater) in the project area would increase by only four percent after including new development. Nonetheless, the proposed project would still emit a substantial amount GHGs due to increased regional vehicle miles traveled. Global climate change and GHG emissions would result in an unavoidable adverse significant impact.