4.2 AIR QUALITY

INTRODUCTION

This section examines the degree to which the proposed project could 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 Downtown Redlands Specific Plan 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 ($\mu g/m^3$). Air calculations and modeling files are presented in Appendix C.

EXISTING 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 monoxide (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.

Ozone. O_3 is a colorless gas that is formed in the atmosphere when reactive organic gases (ROG), which includes volatile organic compounds (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 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

[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.

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.

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.

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.

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).

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.

South Coast Air Basin

The project site is located within the San Bernardino County portion of the South Coast Air Basin. Ambient pollution concentrations recorded in San Bernardino 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 as well as high density of pollutant sources (automobiles and stationary sources). 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 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.

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

Local Climate

The mountains and hills within the Basin contribute to the variation of rainfall, temperature, and winds throughout the region. Within the project site and its vicinity, the average wind speed, as recorded at the Redlands Wind Monitoring Station, is 3.3 miles per hour, with calm winds occurring approximately 16 percent of the time. Wind in the vicinity of the project site predominately blows from the west.[4]

The annual mean temperature near the project site is 63.7°F. The project site experiences an average winter temperature of 65.5°F and an average summer temperature of 91.8°F. Total precipitation in the project site averages 13.6 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer. Precipitation averages 7.2 inches during the winter, 4.0 inches during the spring, 2.1 inches during the fall, and less than one inch during the summer.[5]

REGULATORY FRAMEWORK

The Federal Clean Air Act (CAA) governs air quality in the United States. 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). At the federal level, CAA is administered by the United States Environmental Protection Agency (USEPA). 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.

Federal

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 throughout the United States.

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 4.2-1**. 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 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.

[4]SCAQMD, *Meteorological Data*, Available at: http://www.aqmd.gov/smog/metdata/MeteorologicalData.html, Accessed May 24, 2010.

[5]Western Regional Climate Center, *Historical Climate Information*, Available at: http://www.wrcc.dri.edu, Accessed May 24, 2010.

TABLE 4.2-1: 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	53 ppb (100 µg/m^3)	Attainment
	1-hour	0.18 ppm (338 µg/m^3)	Attainment	100 ppb (188 µg/m^3)	--
Sulfur Dioxide (SO_2)	24-hour	0.04 ppm (105 µg/m^3)	Attainment	0.14 ppm (365 µg/m^3)	Attainment
	1-hour	0.25 ppm (655 µg/m^3)	Attainment	75 ppb (196 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*, September 8, 2010.

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 4.2-1**.

The CCAA requires CARB to designate areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment 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 San Bernardino County portion of the Basin is designated as a nonattainment area for O_3, $PM_{2.5}$, and PM_{10}.

Local

South Coast Air Quality Management District. The 1977 Lewis Air Quality Management Act created the South Coast Air Quality Management District (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 near the project site. The SCAQMD has jurisdiction over an area of 10,743 square miles, consisting of Orange County; the non-desert portions of Los Angeles, Riverside, and San Bernardino counties; and the Riverside County portion of the Salton Sea Air Basin and Mojave Desert Air Basin. The 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 4.2-1**).

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

LEGEND:

South Coast Air Basin

State of California

N

APPROX. SCALE

0 70 140 MILES

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

taha

Downtown General Plan & Specific Plan No. 45 Amendments
Program Environmental Impact Report

taha 2006-027

TORTI GALLAS & PARTNERS, INC.

FIGURE 4.2-1

SOUTH COAST AIR BASIN

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 (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.[6] 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 average 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.

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 (2011) is near 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

[6]SCAQMD, *Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES-III)*, September 2008.

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. 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 took effect March 18, 2010 and 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 relevant GHG emissions or rely on a qualitative analysis with performance based standards 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)

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) or Alternative Planning Strategy (APS) 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. If achieving the target is not feasible then an APS is to be prepared.

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 rural 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 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.

CARB Guidance. 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). 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.

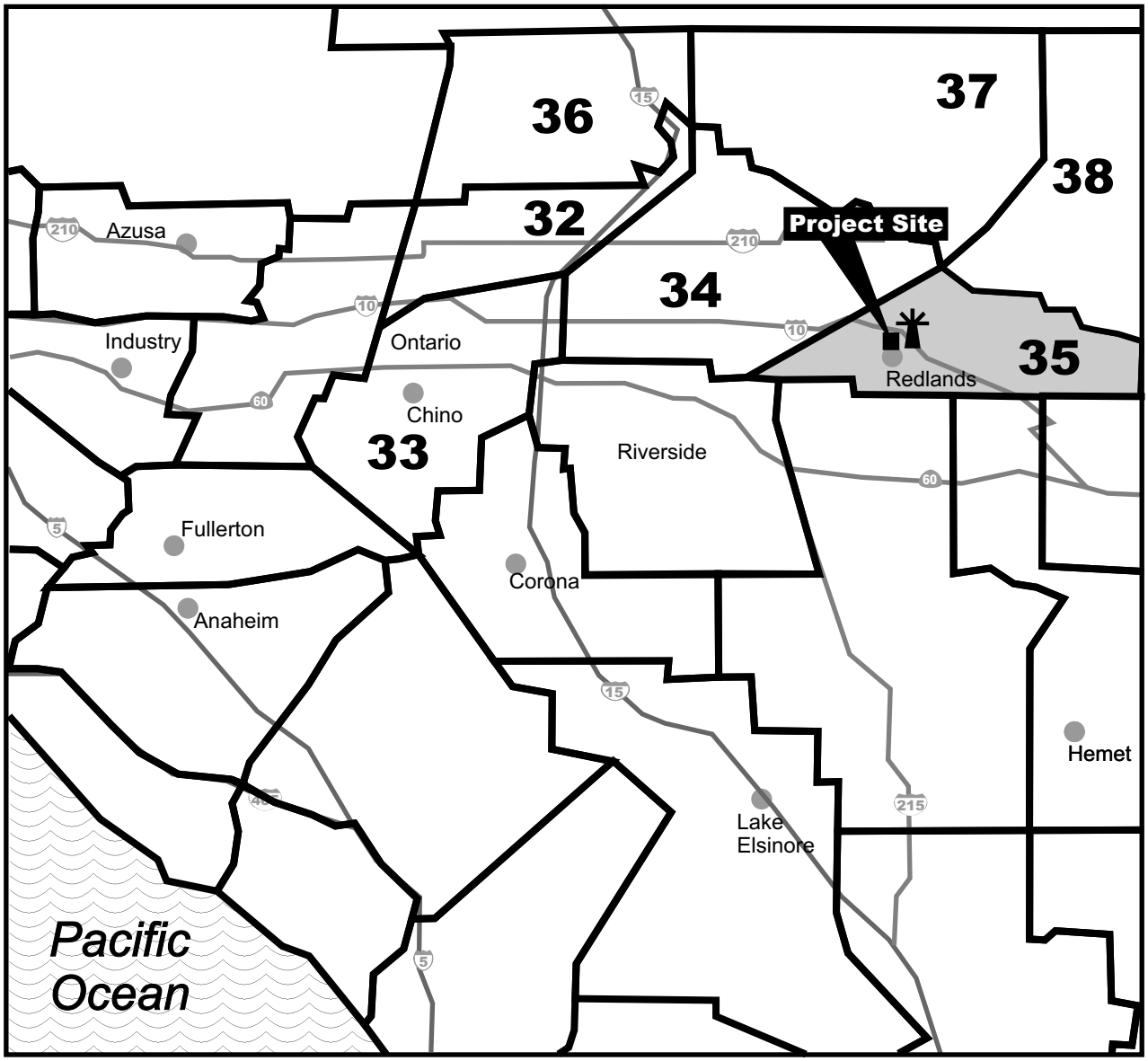
SCAQMD Guidance. The SCAQMD has convened a GHG CEQA Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. Members of the working group include government agencies implementing CEQA and representatives from 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 (10,000 MT/year) for projects where the SCAQMD is lead agency. The SCAQMD has not adopted guidance for CEQA projects under other lead agencies.

Local Air Monitoring Data

The SCAQMD monitors air quality conditions at 38 locations throughout the Basin. The project site is located in SCAQMD's San Bernardino Valley Air Monitoring Subregion, which is served by the Redlands Monitoring Station. The monitoring station is located approximately two miles east of the project site (**Figure 4.2-2**). Historical data from the Redlands Monitoring Station were used to characterize existing conditions in the vicinity of the project site. Criteria pollutants monitored at the Redlands Monitoring Station include O_3, CO, and NO_2. Historical data from the Fontana Monitoring Station was used to characterize existing SO_2, $PM_{2.5}$, and PM_{10} levels.

Table 4.2-2 shows pollutant levels, the State and federal standards, and the number of exceedances recorded at the relevant monitoring station compared to the San Bernardino Valley General Forecast Area (Forecast Area) from 2006 to 2008.

The CAAQS for the criteria pollutants are also shown in the table. As **Table 4.2-2** indicates, criteria pollutants CO, NO_2, and SO_2 did not exceed the CAAQS during the 2006 to 2008 period. The one-hour State standard for O_3 was exceeded 32 to 51 times during the three-year period, and the eight-hour State standard for O_3 was exceeded three 54 to 65 times. The 24-hour State standard for PM_{10} was exceeded 12 to 33 times during the three-year period, and the annual State standard for $PM_{2.5}$ was exceeded each year. When compared to the Forecast Area, the Redlands Monitoring Station has recorded similar concentrations for CO, O_3, and NO_2, while the Fontana Monitoring Station has recorded higher concentrations for PM_{10}, similar concentrations $PM_{2.5}$ and SO_2.



LEGEND: East San Bernardino Valley Monitoring Station

Air Monitoring Areas in San Bernardino County:

32. Northwest San Bernardino Valley
33. Southwest San Bernardino Valley
34. Central San Bernardino Valley
35. East San Bernardino Valley
36. West San Bernardino Mountains
37. Central San Bernardino Mountains
38. Big Bear Lake

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

N

APPROX. SCALE

0 4.5 9 MILES

FIGURE 4.2-2

AIR QUALITY MONITORING AREAS

TABLE 4.2-2: 2006-2008 AMBIENT AIR QUALITY DATA IN THE PROJECT VICINITY

Pollutant	Pollutant Concentration & Standards	Redlands and Fontana Monitoring Stations /a/			San Bernardino Valley General Forecast Area /b,c/		
		Number of Days Above State Standard					
		2006	2007	2008	2006	2007	2008
Ozone	Maximum 1-hr Concentration (ppm)	0.17	0.16	0.16	0.16	0.15	0.16
	Days > 0.09 ppm (State 1-hr standard)	50	32	51	54	42	59
	Maximum 8-hr Concentration (ppm)	0.13	0.12	0.12	0.13	0.12	0.12
	Days > 0.07 ppm (State 8-hr standard)	54	55	65	58	65	82
Carbon Monoxide	Maximum 1-hr concentration (ppm)	3	2	2	3	3	2
	Days > 20 ppm (State1-hr standard)	0	0	0	0	0	0
	Maximum 8-hr concentration (ppm)	1.8	1.6	1.6	2	2	2
	Days > 9.0 ppm (State 8-hr standard)	0	0	0	0	0	0
Nitrogen Dioxide	Maximum 1-hr Concentration (ppm)	0.10	0.10	0.09	0.10	0.10	0.10
	Days > 0.18 ppm (State 1-hr standard)	0	0	0	0	0	0
PM_{10}	Maximum 24-hr concentration ($\mu g/m^3$)	142	111	75	108	108	74
	Estimated Days > 50 $\mu g/m^3$ (State 24-hr standard)	31	33	12	20	22	10
$PM_{2.5}$	Annual Arithmetic Mean ($\mu g/m^3$)	17.6	19.0	15.4	18.1	18.5	15.6
	Exceed State Standard (12 $\mu g/m^3$)?	Yes	Yes	Yes	Yes	Yes	Yes
Sulfur Dioxide	Maximum 24-hr Concentration (ppm)	<0.01	0.01	0.01	<0.01	0.01	0.01
	Days > 0.04 ppm (State 24-hr standard)	0	0	0	0	0	0

/a/ O_3, CO, and NO_2 data were obtained from the Redlands Monitoring Station and SO_2, PM_{10}, and $PM_{2.5}$ data were obtained from the Fontana Monitoring Station.

/b/ The San Bernardino Valley General Forecast Area includes Northwest San Bernardino Valley, Southwest San Bernardino Valley, Central San Bernardino Valley, and East San Bernardino Valley air monitoring areas of the SCAQMD.

/c/ An average of the maximum concentration of each criteria pollutant of the air monitoring areas of the San Bernardino Valley General Forecast Area was used to represent maximum concentrations in the San Bernardino Valley General Forecast Area.

SOURCE: SCAQMD, Historical Data by Year, available at http://www.aqmd.gov/smog/historicaldata.htm, accessed May 19, 2010.

Existing Carbon Monoxide Concentrations

There is a direct relationship between traffic/circulation congestion and CO impacts since exhaust fumes from vehicular traffic are the primary source of CO. CO is a localized gas that dissipates very quickly under normal meteorological conditions. Therefore, CO concentrations decrease substantially as distance from the source (intersection) increases. The highest CO concentrations are typically found in areas directly adjacent to congested roadway intersections.

SCAQMD defines the ambient CO level as the highest reading over the past three years. A review of data from the Redlands Monitoring Station for the 2006 to 2008 period indicates that the one- and eight-hour background concentrations are approximately 3 and 1.8 ppm, respectively. Accordingly, the existing background concentrations do not exceed the State one- and eight-hour CO standards of 20 and 9.0 ppm, respectively.

Existing CO concentrations were modeled based on traffic volume to capacity (V/C) ratio and the traffic level of service (LOS) as indicated in the traffic analysis. The intersections were selected because they represent the busiest or most congested intersections analyzed in the traffic analysis.

The selected intersections are as follows:

- Eureka Street and Colton Avenue – PM Peak Hour
- Orange Street and Pearl Avenue – PM Peak Hour
- Orange Street and Oriental Avenue – PM Peak Hour
- 6th Street and Colton Avenue – PM Peak Hour

At each intersection, traffic-related CO contributions were added to background CO conditions. Traffic CO contributions were estimated using the USEPA CAL3QHC dispersion model, which utilizes traffic volume inputs and CARB EMFAC2007 emissions factors. Consistent with the California Department of Transportation (Caltrans) CO protocol, receptors for the analysis were located three meters (approximately ten feet) from each intersection corner. Existing conditions at the study intersections are shown in **Table 4.2-3**. One-hour CO concentrations range from approximately 3 to 4 ppm and eight-hour CO concentrations range from approximately 2.1 to 2.2 ppm. Presently, none of the study intersections exceed the State one- and eight-hour CO standards of 20 and 9.0 ppm, respectively.

TABLE 4.2-3: EXISTING CARBON MONOXIDE CONCENTRATIONS /a/

Intersection	1-hour (parts per million)	8-hour (parts per million)
Eureka Street and Colton Avenue – PM Peak Hour	4	2.2
Orange Street and Pearl Avenue – PM Peak Hour	3	2.1
Orange Street and Oriental Avenue – PM Peak Hour	4	2.2
6th Street and Colton Avenue – PM Peak Hour	4	2.2
State Standard	**20**	**9.0**

/a/ All concentrations include one- and eight-hour ambient concentrations of 3 and 1.8 ppm, respectively.
SOURCE: TAHA, 2010.

Sensitive Receptors

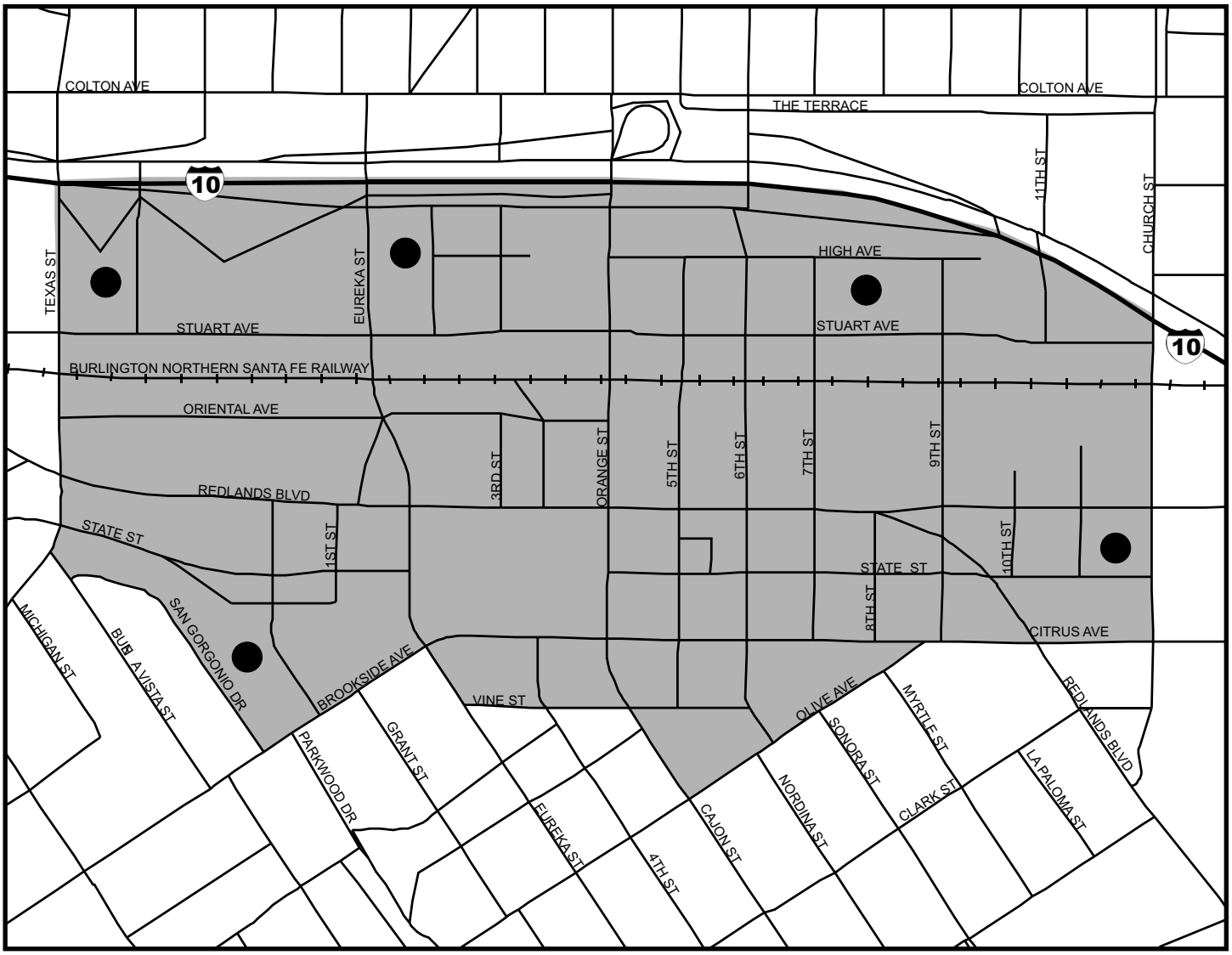
Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. CARB has identified the following typical groups who are most likely to be affected by air pollution: children under 14, the elderly over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Sensitive receptors listed below are show on **Figures 4.2-3** and **4.2-4**.

On-site sensitive receptors include the following:

- Single-family residences

Off-site sensitive receptors include the following:

- Single- and multi-family residences located adjacent and to the south of the project site
- Redlands High School located 75 feet east of the project site
- Orangewood High School located 90 feet west of the project site
- RISE (Redlands Independent Study Education) located 90 feet west of the project site
- Lincoln Shrine (Park) located 210 feet south of the project site
- Davis Park located 490 feet west of the project site



LEGEND:

Proposed Specific Plan Area

Sensitive Receptors - Single-family Residences

N

APPROX. SCALE

0 375 750

FEET

SOURCE: TAHA, 2011.

taha

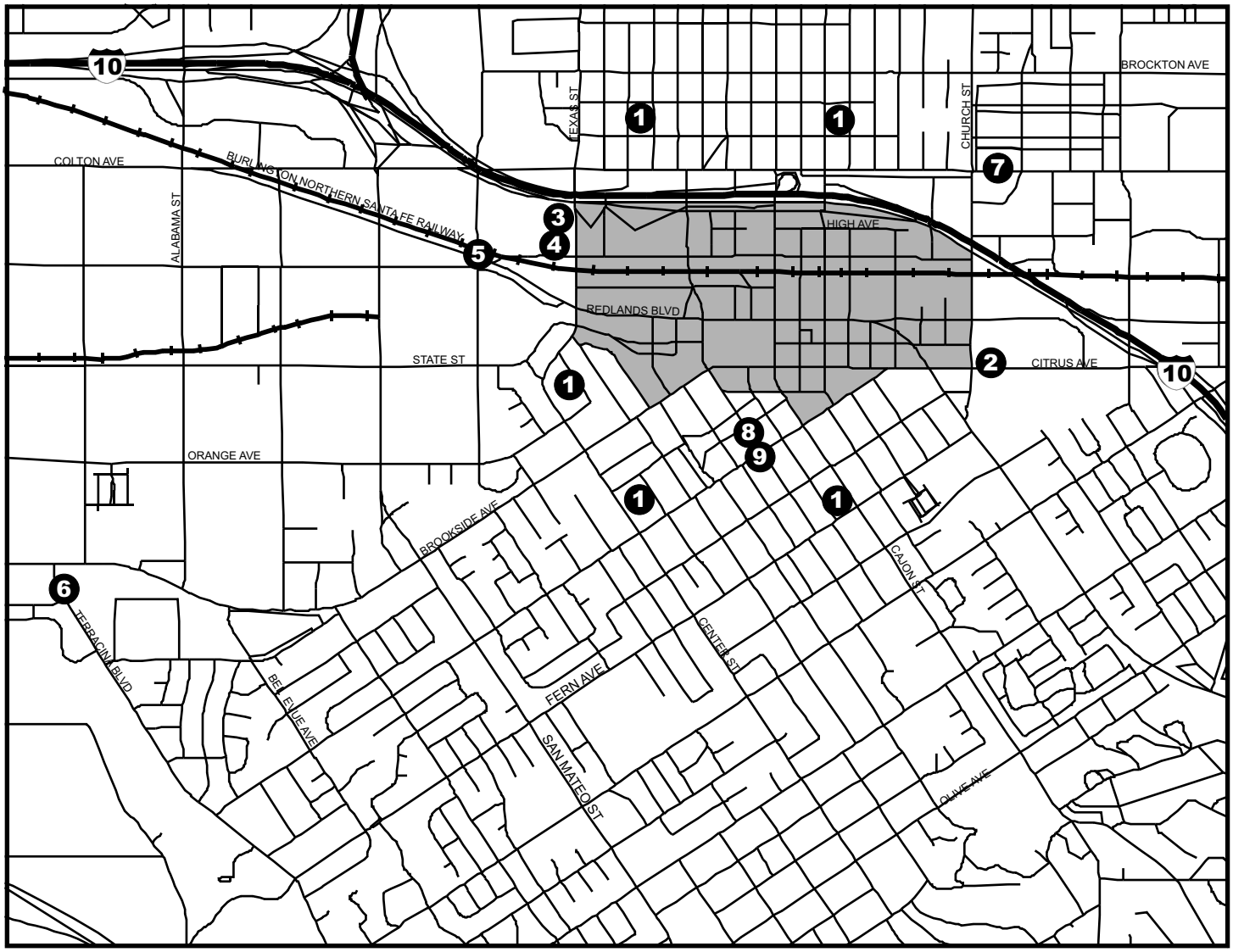
taha 2006-027

Downtown General Plan & Specific Plan No. 45 Amendments
Program Environmental Impact Report

TORTI GALLAS & PARTNERS, INC.

FIGURE 4.2-3

ON-SITE AIR QUALITY
SENSITIVE RECEPTORS



LEGEND:

Proposed Specific Plan Area

(#) Off-Site Air Quality Sensitive Receptors

1. Residential Land Uses (Multiple locations north and south of the Proposed Specific Plan Area)
2. Redlands High School
3. Orangewood High School
4. Redlands Independent Study Education
5. Jeannie David Park
6. Redlands Community Hospital
7. Franklin Elementary School
8. A.K. Smiley Park
9. Sacred Heart Academy

N

APPROX. SCALE

0 0.2 0.4 MILES

SOURCE: TAHA, 2011.

FIGURE 4.2-4

OFF-SITE AIR QUALITY SENSITIVE RECEPTORS

- Franklin Elementary School located 780 feet northeast of the project site
- Smiley Park located 790 feet south of the project site
- Sacred Heart Academy (School) located 970 feet south of the project site

The above sensitive receptors represent the nearest sensitive receptors with the potential to be impacted by the proposed project. Additional sensitive receptors are located in the surrounding community and may be impacted by the proposed project.

THRESHOLDS OF SIGNIFICANCE

Construction Phase Significance Criteria

The proposed project would have a significant impact related to air quality if it would:

- Daily regional and localized construction emissions were to exceed SCAQMD construction emissions thresholds for VOC, NO_X, CO, SO_X, $PM_{2.5}$, or PM_{10}, as presented in **Table 4.2-4**;
- The proposed project would generate significant emissions of TACs; and/or
- The proposed project would create an odor nuisance.

TABLE 4.2-4: SCAQMD DAILY CONSTRUCTION EMISSIONS THRESHOLDS

Criteria Pollutant	Regional Emissions (Pounds Per Day)	Localized Emissions (Pounds Per Day) /a/
Volatile Organic Compounds (VOC)	75	--
Nitrogen Oxides (NO_X)	100	118
Carbon Monoxide (CO)	550	763
Sulfur Oxides (SO_X)	150	--
Fine Particulates ($PM_{2.5}$)	55	4
Particulates (PM_{10})	150	4

/a/ The analysis assumed that the typical urban construction site would be one-acre with a 25-meter (82-foot) receptor distance.
SOURCE: SCAQMD, 2010.

Operations Phase Significance Criteria

The proposed project would have a significant impact if:

- Daily operational emissions were to exceed SCAQMD operational emissions thresholds for VOC, NO_X, CO, SO_X, $PM_{2.5}$, or PM_{10}, as presented in **Table 4.2-5**;

TABLE 4.2-5: 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 and 9.0 ppm, respectively;
- The proposed project would generate significant emissions of TACs;
- The proposed project would create an odor nuisance;
- The proposed project would not be consistent with the AQMP; and/or
- The proposed project would generate more GHG emissions than a similar amount of unplanned development.

IMPACTS

Methodology

Construction Emissions. This air quality analysis is consistent with the methods described in the SCAQMD *CEQA Air Quality Handbook*, as well as the updates to the *CEQA Air Quality Handbook*, as provided on the SCAQMD website.[7] 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).[8] In January 2005, the SCAQMD supplemented the SCAQMD LST Guidance Document with *Sample Construction Scenarios for Projects Less than Five Acres in Size*.[9]

Construction assumptions were based on predicted land use assumptions. The project site was divided into 12 areas, and maximum build-out was estimated for each area. The construction scenario was developed based on a 15-year construction period (2010 to build out year 2025). The analysis included a reasonable estimate of annual construction activity, which was converted into daily construction activity. Key assumptions included four acres of grading per day and 166,582 square feet of architectural coating activity. Equipment mix, demolition material, grading acreage per day, and paving area were based on assumptions developed by the SCAQMD for their *Sample Construction Scenarios for Projects Less than Five Acres in Size*. Construction equipment and haul truck emission factors were obtained from OFFROAD2007 and EMFAC2007, respectively. Fugitive dust, architectural coating, and paving emission factors were based on URBEMIS2007. URBEMIS (Urban Emissions Model) is a computer program that can be used to estimate construction and operational emissions associated with land development projects in California such as residential neighborhoods, shopping centers, and office buildings; area sources such as gas appliances, wood stoves, fireplaces, and landscape maintenance equipment.

Operational Emissions. Regional operations emissions were calculated using the URBEMIS2007 model. Localized CO emissions were calculated utilizing the USEPA CAL3QHC dispersion model and the CARB 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.

[7]SCAQMD, *Air Quality Analysis Guidance Handbook,* Available at: http://www.aqmd.gov/ceqa/hdbk.html, Accessed May 24, 2010.
[8]SCAQMD, *Localized Significance Methodology*, June 2003, revised July 2008.
[9]SCAQMD, *Sample Construction Scenarios for Projects Less than Five Acres in Size*, February 2005.

Localized concentrations associated with proposed parking structures were based on EMFAC2007 and SCREEN3. SCREEN3 is a USEPA, single source Gaussian plume model which provides maximum ground-level concentrations for point, area, flare, and volume sources.

Greenhouse Gas Emissions. 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 greenhouse gas (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 of CO_2, methane CH_4, and nitrous oxide N_2O associated with a project's increase in on-road mobile vehicle operations, electricity consumption, and natural gas consumption. The quantification of emissions is also based on methodology provided by the California Air Pollution Control Officers Association's *CEQA & Climate Change* guidance (January 2008).

The consumption of fossil fuels to generate electricity and to provide heating and hot water for the proposed project, as well as the consumption of fuel by on-road mobile vehicles associated with the proposed project, has the potential to create GHG emissions. The future fuel consumption rates for the proposed project by these sources are estimated based on the amount of proposed development. Natural gas and electricity demand were obtained from Section 4.12 *Utilities & Service Systems*. The GHG emission factors from the CCAR Protocol for natural gas and electricity are then applied to the respective consumption rates, to calculate annual GHG emissions in metric tons. Mobile source CO_2 emissions were obtained from the URBEMIS2007 emissions inventory model. Mobile source CH_4 and N_2O emissions were obtained using vehicle miles traveled data generated by URBEMIS2007 and emission factors obtained from the CARB's EMFAC2007 model.

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.

Construction Emissions

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. Fugitive dust emissions would primarily result from grading activity. NO_X emissions would primarily result from the use of construction equipment. 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, 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.[10]

The construction analysis assessed emissions from equipment, worker commute, haul trucks, fugitive dust, architectural coatings, and paving activity. Equipment assumptions were obtained from the SCAQMD LST Guidance Document with *Sample Construction Scenarios for Projects Less than Five Acres in Size*.[11] It was assumed that there would be up 75 haul trips per day and four acres of land would be disturbed per day. Architectural coating area was based on the estimated square feet of development and it was assumed that 0.5 acres would be paved per day. Refer to Appendix C for a list of all construction assumptions.

Table 4.2-6 shows the maximum estimated daily regional emissions associated with construction activity. Daily construction emissions would exceed the SCAQMD regional significance threshold for VOC and NO_X. Therefore, without mitigation, the proposed project would result in a significant impact related to regional construction emissions.

TABLE 4.2-6: DAILY CONSTRUCTION EMISSIONS - UNMITIGATED

	Pounds Per Day					
	VOC	**NO_X**	**CO**	**SO_X**	**$PM_{2.5}$ /a/**	**PM_{10} /a/**
Maximum Regional Total	213 /b/	116 /c/	60 /c/	<1	18 /c/	67 /c/
Regional Significance Threshold	**75**	**100**	**550**	**150**	**55**	**150**
Exceed Threshold?	Yes	Yes	No	No	No	No
Maximum On-Site Total	213 /b/	116 /c/	60 /c/	<1	16 /c/	65 /c/
Localized Significance Threshold /d/	**-- /e/**	237	1,775	**-- /e/**	8	12
Exceed Threshold?	**--**	No	No	**--**	Yes	Yes

/a/ Fugitive dust emissions were adjusted to account for a 61 percent control efficiency associated with SCAQMD Rule 403.
/b/ Worst-case VOC emissions would occur if coating activities overlapped for multiple projects.
/c/ Worst-case NO_X, CO, $PM_{2.5}$, and PM_{10} emissions would occur if site preparation activities overlapped for multiple projects.
/d/ The analysis assumed up to four-acres would be potentially disturbed in one day. A 25-meter (82-foot) receptor distance was assumed.
/e/ SCAQMD has not developed localized significance methodology for VOC or SO_X.
SOURCE: TAHA, 2010.

Localized Impacts. Emissions for the localized construction air quality analysis of $PM_{2.5}$, PM_{10}, CO, and NO_2 were compiled using LST methodology required by the SCAQMD. Localized on-site emissions were calculated using similar methodology to the regional emission calculations. LSTs were developed based upon the size or total area of the emissions source, the ambient air quality in each source receptor area, and the distance to the sensitive receptor. LSTs for CO and NO_2 were derived by using an air quality dispersion model to back-calculate the emissions per day that would cause or contribute to a violation of any ambient air quality standard for a particular source receptor area. Construction $PM_{2.5}$ and PM_{10} LSTs were derived using a dispersion model to back-calculate the emissions necessary to exceed a concentration equivalent to 50 $\mu g/m^3$ over five hours, which is the SCAQMD Rule 403 control requirement.

[10]SCAQMD, *Overview – Fugitive Dust Mitigation Measure Tables*, April 2007.
[11]SCAQMD, *Sample Construction Scenarios for Projects Less than Five Acres in Size*, February 2005.

Table 4.2-6 also shows the estimated daily localized emissions. Daily construction emissions would exceed the SCAQMD localized significance thresholds for $PM_{2.5}$ and PM_{10} emissions. Therefore, without mitigation, the proposed project would result in a significant impact related to localized construction emissions.

Toxic Air Contaminant Impacts. The greatest potential for TAC emissions during construction would be diesel particulate emissions associated with heavy-duty 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. Construction activity would occur throughout the project site and sensitive receptor exposure to construction TACs would vary during project buildout. TAC exposure is highest at locations nearest to the source. The typical construction period for individual projects would range from one to three years. Given the short-term construction schedule of approximately one to three years, individual projects would not result in a long-term (i.e., 70 years) source of TAC emissions. Construction activity for the entire Downtown Redlands Specific Plan would emit TACs throughout the 15-year build-out period. This could result in a substantial exposure without control measures. Therefore, without mitigation, the proposed project would result in a significant impact related to construction TAC emissions.

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 construction site. 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. Therefore, the proposed project would result in a less-than-significant impact related to construction odors.

Operational Emissions

Regional Impacts. Long-term project emissions would be generated by mobile sources and area sources, such as natural gas combustion. Motor vehicles trips would be the predominate source of long-term project emissions. According to the traffic report, the proposed project would generate 31,374 net daily vehicle trips. Regional emissions for all development associated with the Downtown Redlands Specific Plan are shown in **Table 4.2-7**. The net total includes accounts for emissions that would have been generated by existing land uses. Regional operational emissions would exceed the SCAQMD significance thresholds. Therefore, without mitigation, the proposed project would result in a significant impact related to regional operational emissions.

Localized Impacts. CO concentrations in 2025 are expected to be lower than existing conditions due to stringent State and federal mandates for lowering vehicle emissions. Although traffic volumes would be higher in the future both without and with the implementation of the proposed project, CO emissions from mobile sources are expected to be much lower due to technological advances in vehicle emissions systems, as well as from normal turnover in the vehicle fleet. Accordingly, increases in traffic volumes are expected to be offset by increases in cleaner-running cars as a percentage of the entire vehicle fleet on the road.

TABLE 4.2-7: NET DAILY OPERATIONAL EMISSIONS

Emission Source	Pounds per Day					
	VOC	NO_X	CO	SO_X	$PM_{2.5}$	PM_{10}
Proposed Project						
Mobile Sources	142	169	1,306	3	101	518
Area Sources	86	24	27	<1	<1	<1
Emissions Subtotal	*228*	*193*	*1,333*	*3*	*101*	*518*
Removed Land Uses						
Mobile Sources	<1	2	4	<1	<1	<1
Area Sources	4	6	40	<1	2	9
Emissions Subtotal	*4*	*8*	*44*	*<1*	*2*	*9*
Net Emissions	**224**	**185**	**1,289**	**3**	**99**	**509**
SCAQMD Threshold	**55**	**55**	**550**	**150**	**55**	**150**
Exceed Threshold?	Yes	Yes	Yes	No	Yes	Yes

SOURCE: TAHA, 2010.

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 V/C ratios are increased by two percent at intersections with a LOS of D or worse. 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 selected intersections are as follows:

- Eureka Street and Colton Avenue – PM Peak Hour
- Orange Street and Pearl Avenue – PM Peak Hour
- Orange Street and Oriental Avenue – PM Peak Hour
- 6th Street and Colton Avenue – PM Peak Hour

The USEPA CAL3QHC micro-scale dispersion model was used to calculate CO concentrations for 2025 conditions. CO concentrations at the analyzed intersections are shown in **Table 4.2-8**. One-hour CO concentrations under project conditions would be approximately 2 ppm at worst-case sidewalk receptors. Eight-hour CO concentrations under project conditions would be approximately 1.0 ppm. The State one- and eight-hour standards of 20 and 9.0 ppm, respectively, would not be exceeded at the analyzed intersections. Therefore, the proposed project would result in a less-than-significant impact related to localized CO concentrations.

The proposed project includes several parking structures. The largest of these parking structures, located at the southeast corner of Eureka Street and Stuart Avenue, would provide 900 parking stalls. A localized CO analysis was completed to identify potential worst-case impacts associated with emissions generated by the largest parking structure. The conservative analysis was based on a park-and-ride lot and it assumed that 1,350 vehicles would utilize the structure during the peak hour. One and eight-hour CO concentrations would be approximately 3 and 1.9 ppm, respectively. The State one- and eight-hour standards of 20 and 9.0 ppm, respectively, would not be exceeded. Parking activity would result in a less-than-significant air quality impact.

TABLE 4.2-8: 2010 AND 2025 CARBON MONOXIDE CONCENTRATIONS /a/

Intersection	1-hour (parts per million)			8-hour (parts per million)		
	Existing (2010)	Baseline (2025)	Project (2025)	Existing (2010)	Baseline (2025)	Project (2025)
Eureka Street and Colton Avenue	4	1	2	2.2	0.9	1.0
Orange Street and Pearl Avenue	3	1	2	2.1	0.9	1.0
Orange Street and Oriental Avenue	4	2	2	2.2	1.0	1.0
6th Street and Colton Avenue	4	2	2	2.2	1.0	1.0
State Standard	**20**			**9.0**		

/a/ Existing concentrations include year 2010 one- and eight-hour ambient concentrations of 3 and 1.8 ppm, respectively. No Project and Project concentrations include year 2025 one- and eight-hour ambient concentrations of 1 and 0.7 ppm, respectively.
SOURCE: TAHA, 2010.

Toxic Air Contaminant Impacts. The SCAQMD recommends that health risk assessments be conducted for substantial sources of diesel particulate emissions (e.g., truck stops) and has provided guidance for analyzing mobile source diesel emissions. The proposed project would include residential units, retail uses, restaurants, office space, theaters/cinemas, hotel uses, and civic uses. These land use would not be anticipated to generate a substantial number of daily truck trips. The primary source of potential TACs associated with project operations is diesel particulate from delivery trucks (e.g., truck traffic on local streets and on-site truck idling). Per State law, trucks that do visit the site would not idle on-site for extended periods of time. Based on the limited activity of these TAC sources, the proposed project would not warrant the need for a health risk assessment.

Typical sources of acutely and chronically hazardous TACs include industrial manufacturing processes and automotive repair facilities. The proposed project would not include any of these potential sources, although minimal emissions may result from the use of consumer products (e.g., aerosol sprays). It is not expected that the proposed project would release substantial amounts of TACs.

The project site is bounded by the I-10 Freeway to the north. CARB recommends against locating new residential receptors within 500 feet of freeways. Detailed development plans for the Downtown Redlands Specific Plan have not been developed that show the precise locations of residential land uses. New residents could be located within 500 feet of the I-10. Residential exposure to freeway TAC emissions would result in a potentially significant impact.

The Redlands Passenger Rail, currently being planned by the San Bernardino Associated Governments SANBAG, will be a new passenger train service running from Redlands to Downtown San Bernardino, utilizing the existing rail right-of-way. A rail station is planned in Downtown adjacent to the historic Santa Fe Depot between Orange and Eureka Streets. The final site for the station platform has yet to be determined. However, the street entrance frontage to the station will be Stuart Avenue between Orange and Eureka Streets. Stuart Avenue could provide vehicular access to the station, and be the location not only for bus access but also for bus transfers, and for kiss-and-ride drop-off of transit passengers. The existing bus transfer location on Redlands Boulevard could possibly be relocated to Stuart Avenue and integrated with the rail station. The SANBAG study has estimated the need for 260 to 300 parking spaces at the rail station. These spaces will possibly be provided in a parking structure adjacent to the rail station.

Detailed information on the Redlands Passenger Rail Project was not known when this analysis was completed. The various project alternatives include electrically-powered light rail and diesel-powered commuter rail. A detailed analysis would be speculative and not accurate as the analysis would not include key air quality assumptions (e.g., train frequency and bus activity). It is reasonable to assume that the rail would be focused around the peak hour employment commuting period, and non-peak hour trips

would be limited. Electrically-powered rail would not generate TAC emissions. However, if the diesel-powered rail line were to be implemented, residential land uses developed near the rail line would be exposed to increased TAC emissions depending on the technology and frequency of train service. Therefore, without mitigation, the proposed project would result in a significant impact related to toxic air contaminants.

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 project site would be developed with land uses that are not 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. Therefore, the proposed project would result in a less-than-significant impact related to odor.

Air Quality Management Plan 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. Consistency with the AQMP can be assessed by determining how a project accommodates increased in population or employment. Generally, a project that is planned in a way that minimizes vehicle miles traveled (VMT) both within the project site and the surrounding community would also minimize air pollutant emissions. This type of project would be consistent with the goals of the AQMP.

Downtown Redlands Specific Plan objectives include promoting economic vitality by encouraging a mix of uses and by encouraging transit-oriented development and creating a pedestrian-oriented environment. The proposed project would include a net increase of 1,618 residential units, 391,362 square feet of retail uses, 78,650 square feet of restaurants, 285,500 square feet of office space, two screens (900 seats) of theaters/cinemas, 100 rooms (20,000 square feet) of hotel uses, and 7,900 square feet of civic uses. The project site is located adjacent to the regional I-10 transportation corridor and the proposed passenger train service from Redlands to Downtown San Bernardino. The rail station would be the location not only for bus access and for kiss-and-ride drop-off of transit passengers. The pedestrian-orientated environment would create efficient pedestrian circulation and a pleasant pedestrian experience for residents, employees, and visitors, to the project site. This would encourage the use of mass transit to access the project site, thereby reducing regional VMT. The proposed project would also locate employment near housing, which would potentially further reduce regional VMT. This type of infill development is consistent with the goals of the AQMP for reducing the emissions associated with new development. Based on this information, proposed project would be consistent with the AQMP.

MITIGATION MEASURES

The City of Redlands shall ensure the following measures are implemented as appropriate for individual development projects associated with the proposed project.

Construction

AQ1 The City shall require construction contractors to apply water or a stabilizing agent to exposed surfaces in sufficient quantity to prevent generation of dust plumes.

AQ2 The City shall require construction contractors to utilize at least one of the following measures at each vehicle egress from the project site 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 The City shall require construction contractors to cover all haul trucks hauling soil, sand, and other loose materials (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).

AQ4 The City shall require construction contractors to suspend activity on unpaved surfaces when winds exceed 25 miles per hour.

AQ5 The City shall require construction contractors to suspend heavy-duty equipment operations during first and second stage smog alerts.

AQ6 The City shall require construction contractors to replace ground cover in disturbed areas as quickly as possible.

AQ7 The City shall require construction contractors to turn off heavy-duty equipment operations while idling longer than five minutes.

AQ8 The City shall require construction contractors to maintain equipment and vehicle engines in good condition and in proper tune per manufacturers' specifications.

AQ9 The City shall require construction contractors to utilize electricity from power poles rather than temporary diesel or gasoline generators.

AQ10 The City shall require construction contractors to utilize diesel powered construction equipment that meets Tier III emissions requirements.

AQ11 The City shall require construction contractors to install diesel particulate filters on diesel-powered construction equipment.

AQ12 The City shall require construction contractors to purchase architectural coatings from a super-compliant architectural coating manufacturer as identified by the SCAQMD (http://www.aqmd.gov.prdas/brochures/ Super-Compliant_AIM.pdf).

AQ13 The City shall require construction contractors to use spray equipment with high transfer efficiency, such as the electrostatic spray gun or manual coatings application (e.g., paint brush and hand roller).

Operations

AQ14 Residential land uses shall not be located within 500 feet of the I-10 Freeway.

AQ15 If the Redlands Passenger Rail Project is implemented with diesel-fueled locomotives, residential land uses within 500 feet of the planned rail station shall be constructed with fresh air supply systems so that ventilation may be provided with closed windows.

AQ16 If the Redlands Passenger Rail Project is implemented with diesel-fueled locomotives, outdoor gathering areas (e.g., playgrounds) shall not be located within 500 feet of the planned rail station.

LEVEL OF IMPACT AFTER MITIGATION

Construction

Mitigation Measures **AQ1** through **AQ6** would ensure that reduce fugitive dust emissions are reduced by 61 percent. Mitigation Measures **AQ7** through **AQ11** would reduce regional emissions. It was conservatively assumed that regional exhaust emissions would be reduced by five percent. Mitigation Measures **AQ12** and **AQ13** would reduce architectural coating emissions be 96 percent. **Table 4.2-9** shows mitigated regional emissions. VOC emissions would be reduced to less than significant, but regional NO_X emissions would result in an unavoidable significant impact.

Mitigation Measures **AQ7** through **AQ11** would reduce TAC emissions. These measures would limit TAC exposure in the project site. Construction TAC emissions would result in a less than significant impact.

TABLE 4.2-9: DAILY CONSTRUCTION EMISSIONS - MITIGATED

	Pounds Per Day					
	VOC	**NO_X**	**CO**	**SO_X**	**$PM_{2.5}$ /a/**	**PM_{10} /a/**
Maximum Regional Total	18 /b/	112 /c/	59 /c/	<1	18 /c/	67 /c/
Regional Significance Threshold	**75**	**100**	**550**	**150**	**55**	**150**
Exceed Threshold?	No	Yes	No	No	No	No
Maximum On-Site Total	17 /b/	67 /c/	34 /c/	<1	16 /c/	65 /c/
Localized Significance Threshold /d/	**-- /e/**	237	1,775	**-- /e/**	8	12
Exceed Threshold?	**--**	No	No	**--**	Yes	Yes

/a/ Fugitive dust emissions were adjusted to account for a 61 percent control efficiency associated with SCAQMD Rule 403.
/b/ Worst-case VOC emissions would occur if coating activities overlapped for multiple projects.
/c/ Worst-case NO_X, CO, $PM_{2.5}$, and PM_{10} emissions would occur if site preparation activities overlapped for multiple projects.
/d/ The analysis assumed up to four-acres would be potentially disturbed in one day. A 25-meter (82-foot) receptor distance was assumed.
/e/ SCAQMD has not developed localized significance methodology for VOC or SO_X.
SOURCE: TAHA, 2010.

Operation

The majority of operational emissions would result from project-related mobile sources. Mobile source emissions cannot be substantially reduced though mitigation as the City cannot reasonably impose mitigation measures on private vehicles. As discussed below, the proposed project does include a number of sustainability measures that, although difficult to quantify, would reduce regional emissions. Nonetheless, regional operational emissions would result in an unavoidable significant air quality impact.

Mitigation Measures **AQ14** would ensure that the residential land use development would be consistent with CARB location recommendations to reduce TAC exposure. Mitigation Measures **AQ15** and **AQ16** would reduce TAC exposure associated with the planned rail station. These mitigation measures reduce operational TAC exposure to a less than significant impact.

CUMULATIVE IMPACTS

SCAQMD Methodology and Criteria Pollutants

Construction. The project area includes 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 relative to NO_X, it would result in a cumulatively considerable contribution to a cumulative impact. While SCAQMD recommended mitigation measures and compliance with Rule 403 would reduce air quality impacts, construction emissions would result in a cumulatively considerable contribution to a significant short-term cumulative impact for NO_X and particulate emissions (PM_{10} and $PM_{2.5}$).

Operations. The SCAQMD's approach for assessing cumulative air quality impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and State CAAs. The SCQAMD has set forth regional significance thresholds designed to assist in the attainment of ambient air quality standards. The proposed project would result in a significant VOC, NO_X, CO, $PM_{2.5,}$ and PM_{10} impacts during operation. Therefore, the proposed project would result in a regional cumulative operations impact given that the Basin is in non-attainment for ozone and the proposed project would exceed the regional daily emissions threshold for an ozone precursor (VOC and NO_X).

Global Climate Change and Greenhouse Gas Emissions

The proposed project is an area-wide infill project within a downtown area. The proposed mix of land uses would provide jobs and housing in close proximity to each other. This has the potential to reduce regional vehicle miles traveled in the project area. The City supports projects that consider access to economic and recreational amenities, jobs, schools, transit, regional connectivity, and how to best preserve and limit impact on surrounding eco system. The City Council is making a commitment to ensure that the new civic buildings located on the project site are LEED certified. The following Green Building Guidelines are included as part of the proposed project.

- Building overhangs and spectrally-selective glazing should be used to reduce solar heat gain on windows. Do not use heavily tinted glass unless necessary for security or privacy purposes.
- South facing elevations should incorporate overhangs.
- Design roofs on the south side of buildings to allow for the installation of photovoltaic panels. Centralize rooftop equipment to allow for greater roof area available for photovoltaics.
- Minimize paved areas to lessen heat buildup around the building that will add to the load on the building envelope. Provide landscaped planters adjacent to buildings to influence the microclimate found around the building.
- Provide fins, louvers, landscaping, and/or other shade devises on east and west facing windows of buildings to reduce solar gain and glare.
- Consider providing exterior finishes with high reflectivity and high thermal emittance or wall shading elements to reduce solar gain.
- Use reflective roofing products or "green roofs" to reduce cooling loads.
- Design windows to maximize daylight and views. Consider passive daylighting strategies that bring daylight deep into occupied spaces such as:
    - High ceilings
    - Light colored interior surfaces
    - High clerestory windows
    - Light shelves
- Use light sensors to reduce use of electricity when adequate daylight exists.

- Use roof monitors for daylighting upper floors.
- Shape and plan the interior to enhance daylight distribution. Orient buildings so that maximum solar exposure is north and south facing, where solar control is easiest, and minimum exposure is east and west facing.
- Integrate energy producing equipment such as wind turbines and photovoltaic equipment into the architectural design of buildings.
- Consider providing changing rooms, lockers & showers for cyclists & joggers.
- Consider incorporating thermal mass into building structure.
- Specify recycling of demolition and construction waste in construction contracts.
- Where possible use narrow floor plates for access to daylight, views & natural cooling.
- Consider designing floor plans that give north and south elevations the most exposure to sunlight allowing for deep penetration of natural light into the core of buildings.
- Consider installation of Energy Star appliances and low-flow water fixtures.
- Insulate building envelop and HVAC systems to prevent heat/gain loss.
- Utilize tankless water heaters.
- Design for natural ventilation by utilizing: operable windows; aligning building on street grid to capture prevailing breezes for reduced summer energy demands for cooling.

Planned development as part of the proposed project would reduce stationary and mobile source emissions when compared to unplanned development. First, as stated above, the proposed project includes a number of measures to reduce electricity use and associated GHG emissions. It was assumed that the Green Building Guidelines would reduce electricity demand by at least five percent when compared to unplanned development. Second, as stated in the traffic study, vehicle trips under the proposed project would be less than under general development because of the greater density of transit service to Downtown and the planned Redlands Passenger Rail Line. The overall effect of these adjustments was a 19 percent reduction in AM peak hour trips, and a 21 percent reduction in PM peak hour trips. It was conservatively assumed that off-peak trips would be reduced by ten percent when compared to unplanned development.

GHG emissions were calculated for the proposed project and as if the same amount of development would occur unplanned throughout the project site. As shown in **Table 4.2-10**, the mix of land uses and the Green Building Guidelines associated with the proposed project would result in 7,358 fewer tons per year of GHG emissions when compared to a similar level of unplanned development.

TABLE 4.2-10: ESTIMATED ANNUAL GREENHOUSE GAS EMISSIONS

Source	Carbon Dioxide Equivalent (Tons per Year)
Downtown Redlands Specific Plan	74,702
Unplanned Development	82,059
Total Emissions Reduction	**(7,358)**

SOURCE: TAHA, 2010.

An assessment was also completed comparing the proposed project to GHG reduction measures required by the California Climate Action Team. The California Climate Action Team was formed in response to AB 32. The goal of the California Climate Action Team is to evaluate the impacts of climate change on California and examine adaptation measures that would best prepare the State to respond to adverse consequences of climate change. As shown in **Table 4.2-11**, the proposed project would be consistent

with the applicable GHG reduction measures recommended by the California Climate Action Team to comply with AB 32.

The proposed project would generate fewer tons per year of GHG emissions when compared to a similar level of unplanned development and would comply with State GHG reduction measures. The proposed project would not contribute to a cumulatively considerable climate change and GHG impact.

TABLE 4.2-11: PROJECT CONSISTENCY WITH THE CALIFORNIA CLIMATE ACTION TEAM REPORT

GHG Reduction Strategies	Project Consistency
Diesel Anti-Idling – Limit diesel-fueled commercial motor vehicle idling.	Consistent with State law, diesel-fueled vehicles would be prohibited from idling in excess of five minutes.
Achieve 50 Percent Statewide Recycling Goal – Reduce GHG emissions associated with material extraction and production as well as methane emissions from landfills.	The proposed project would use renewable, reusable or recyclable building materials and limit construction waste.
Urban Forestry – Plant trees in urban areas.	Landscaping guidelines would include the planting of native, drought-resistant trees.
Water Use Efficiency – Conserve water so that GHG emissions are reduced from energy consumption required to convey, treat, distribute, and use water and wastewater.	The proposed project would encourage Energy Star appliances and low-flow water fixtures. Tankless water heaters would be utilized.
Building Energy Efficiency Standards in Place – Place priority on and establish specific goals for updating building energy efficiency standards.	The City Council is making a commitment to ensure that the new civic buildings within the project site are LEED certified. The proposed project would encourage solar energy and Energy Star appliances. This would result in energy efficiency savings over California Title 24 Energy Design Standards.
Appliance Energy Efficiency Standards in Place – Place priority on updating State appliance energy efficiency standards.	The City Council is making a commitment to ensure that the new civic buildings within the project site are LEED certified. The proposed project would encourage solar energy and Energy Star appliances. This would result in energy efficiency savings over California Title 24 Energy Design Standards.
Measures to Improve Transportation Energy Efficiency – Provide incentives, tools, and information that advance cleaner transportation and reduce GHG emissions	The proposed project would be located near public transportation routes and along a heavily traveled vehicle corridor. Commuter rail transit through Downtown is planned in the future. This would encourage mass transportation thereby potentially reducing regional VMT.
Green Building Initiative – Encourage private building owners and operators to reduce energy use by 20 percent.	The City Council is making a commitment to ensure that the new civic buildings within the project site are LEED certified. The proposed project would encourage solar energy and Energy Star appliances. This would result in energy efficiency savings over California Title 24 Energy Design Standards.

SOURCE: TAHA, 2010.