Air Quality Report for the Meadowood Project, San Diego County, California GPA04-002, SPA04-001, R04-004, VTM 5354RPL², S04-005, S04-006, S04-007 and ER No. 04-02-004

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1.0 Summary

The Proposed Project is located to the north of State Route 76 (SR-76), and east of Interstate 15 (I-15) in the county of San Diego. The parcels are situated between several planned projects: Palomar College Campus, Campus Park and Campus Park West. South and east is the approved Rosemary's Mountain Rock Quarry. Located to the north and east is land that is largely undeveloped and consists of citrus and avocado orchards and natural open space.

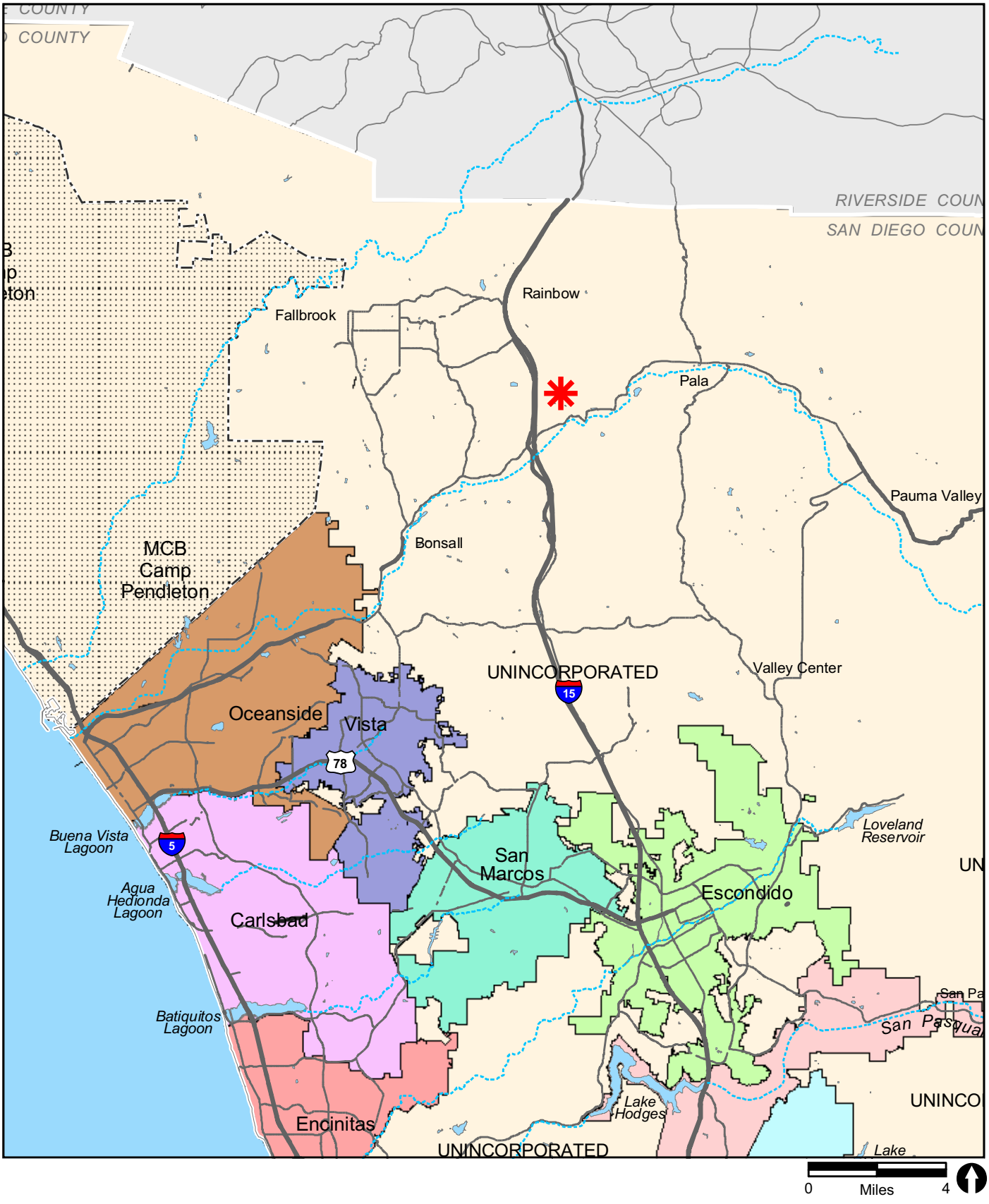
The Proposed Project entails construction of 844 single- and multi-family homes, a school, park, and open space. Figure 1 shows the regional location of the Proposed Project. Figure 2 shows the Proposed Project boundary plotted on an aerial photograph of the Proposed Project vicinity. Figure 3 shows the site plan for the Proposed Project.

The Proposed Project is located within the San Diego Air Basin (SDAB), one of 15 air basins that geographically divide the state of California. The SDAB is currently classified as a federal non-attainment area for ozone and a state non-attainment area for particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and ozone.

An air quality assessment of the proposed Rosemary's Mountain Rock Quarry (County of San Diego 2002a) located directly south and east of the Proposed Project concluded that potentially significant, but mitigable, air quality impacts will result from the activities at the quarry. In particular, PM_{10} emissions resulting from the construction of the quarry and daily quarry activities are potentially significant. When Best Available Control Technologies are implemented and the recommended mitigation measures adopted, the impacts are not considered significant. Therefore, the quarry emissions are not considered in the following analysis.

Results from the air quality assessment for the Proposed Project indicate that emissions due to construction are projected to be less than significant with the incorporation of project design considerations and mitigation. Residential interior coatings must have a volatile organic compound (VOC) content less than or equal to 50 grams per liter, residential exterior coatings must have a VOC content less than or equal to 100 grams per liter, and non-residential exterior and interior coatings must have a VOC content less than or equal to 250 grams per liter.

Additionally, should the construction fleet not apply Toxic Best Available Control Technology (T-BACT) standards, impacts related to health risks would be significant. To ensure the use of T-BACT, the Proposed Project will be required to have 10 percent of the construction fleet use any combination of diesel catalytic converters, diesel oxidation catalysts, diesel particulate filters and/or California Air Resources Board (CARB) certified



Project location

FIGURE 1

Regional Location

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Project Boundary

FIGURE 2

Aerial Photograph of Project

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Project Boundary

Plan Lines

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FIGURE 3

Site Plan

Tier I, II, or III equipment. Impacts due to the construction of the Proposed Project are less than significant.

Emissions due to operation of the Proposed Project are projected to be significant despite project design considerations. Trip generated project impacts can be avoided somewhat with the following measures, but not below levels of significance for reactive organic gases (ROG), carbon monoxide, and particulates.

a. Complete sidewalk coverage in the project area.

b. Street trees to provide shade throughout the project area.

c. Internal trail system with connections to a regional system.

d. Bike routes with paved shoulders to most major destinations.

e. Mixed residential uses and routes that are visually interesting.

f. Pedestrian and bicyclist safety through lighting, signalization and signage, bike lanes (as appropriate), and crosswalks.

Impacts due to operation of the Proposed Project remain significant.

2.0 Introduction and Project Description

The purpose of this report is to assess potential short- and long-term local and regional air quality impacts resulting from development of the Proposed Project.

Air pollution affects all southern Californians. Effects can include the following:

- Increased respiratory infection
- Increased discomfort
- Missed days from work and school
- Increased mortality

Polluted air also damages agriculture and our natural environment.

The analysis of impacts is based on state and federal ambient air quality standards and impacts are assessed in accordance with the guidelines, policies, and standards established by the County of San Diego and the San Diego Air Pollution Control District (SDAPCD). Project compatibility with the adopted air quality plan for the area is also

assessed. Measures are recommended, as required, to reduce potentially significant impacts.

This air quality assessment includes an examination of tailpipe emissions from vehicles on I-15, SR-76 and Horse Ranch Creek Road. Diesel particulate matter emissions are also considered.

The assessment also includes an analysis of the potential for CO hot spots at locations within the vicinity of the Proposed Project resulting from nearby traffic and a discussion of potential ozone effects.

The Proposed Project is located to the north of State Route 76, and east of Interstate 15 (I-15) in the county of San Diego. The parcels are situated between several planned projects: Palomar College Campus, Campus Park and Campus Park West. South and east is the approved Rosemary's Mountain Rock Quarry. Located to the north and east is land that is largely undeveloped and consists of citrus and avocado orchards and natural open space.

The Proposed Project seeks a General Plan Amendment, Specific Plan Amendment, Rezone, Vesting Tentative Map, Major Use Permit for a wastewater treatment plant, and three Site Plans for the development of a residential community with a mix of single-family detached, multi-family detached and multi-family attached units, an elementary school site, neighborhood park, pocket parks, multi-use trails, and supporting infrastructure on the 389.5-acre site. The Proposed Project entails construction of 844 single- and multi-family homes, a school, park, and open space. Figure 1 shows the regional location of the Proposed Project. Figure 2 shows the Proposed Project boundary plotted on an aerial photograph of the Proposed Project vicinity. Figure 3 shows the site plan for the Proposed Project.

3.0 Regulatory Framework

About half of the air pollution in the San Diego region comes from mobile sources (County of San Diego 2004). These mobile sources consist mainly of cars, trucks, and buses, but also include construction equipment, trains, and airplanes. Emission standards for mobile sources are established by state and federal agencies such as the CARB and the U. S. Environmental Protection Agency (EPA). Reducing mobile source emissions requires the technological improvement of existing mobile sources and the examination of future mobile sources such as those associated with new or modification projects. The regulatory framework described below details the federal and state agencies that are in charge of monitoring and controlling mobile source air pollutants and what measures are currently being taken to achieve and maintain healthful air quality in the SDAB.

The state of California is divided geographically into 15 air basins for the purpose of managing the air resources of the state on a regional basis. Areas within each air basin are considered to share the same air masses and, therefore, are expected to have similar ambient air quality. If an air basin is not in either federal or state attainment for a particular pollutant, the basin is classified as a moderate, serious, severe, or extreme non-attainment area (there is also a marginal classification for federal non-attainment areas).

3.1 Federal Regulations

Ambient Air Quality Standards (AAQS) represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. The federal Clean Air Act (CAA) was enacted in 1970 and amended in 1977 and 1990 [42 U.S.C. 7401] for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity. In 1971, in order to achieve the purposes of Section 109 of the Clean Air Act [42 U.S.C. 7409], the U.S. Environmental Protection Agency (EPA) developed primary and secondary national ambient air quality standards (NAAQS).

Seven pollutants of primary concern were designated: ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), and suspended particulates PM_{10} and $PM_{2.5}$. The primary NAAQS "…in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health…." and the secondary standards "…protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air" (42 U.S.C. 7409(b)(2)). The primary standards were established, with a margin of safety, considering long-term exposure for the most sensitive groups in the general population (i.e., children, senior citizens, and people with breathing difficulties).

In 1997, the EPA promulgated a new eight-hour ozone standard of eight parts per hundred million (pphm) to replace the existing one-hour standard of 12 pphm, and a new standard for "fine" particulate matter that is 2.5 microns or less in diameter ($PM_{2.5}$). The existing federal standard for PM_{10} was retained.

That portion of the SDAB containing the Proposed Project has been designated a "basic" non-attainment area for the eight-hour ozone standard under Subpart 1 of Part D of the CAA (EPA 2004a). Using the discretion provided by Section 172(a)(1) of the CAA, the EPA has chosen not to classify the basin (e.g., moderate, serious, etc.). For areas subject to Subpart 1, consistent with Section 172(a)(2)(A) of the CAA, the period of attainment will be no more than five years from the effective date of designation (EPA 2004b). Consequently, the SDAB must demonstrate attainment by June 15, 2009.

If warranted, the EPA may grant an extension of the attainment date to no more than 10 years after designation (June 15, 2014).

Also, per the EPA's final rule for implementing the eight-hour ozone standard, the one-hour ozone standard was to be revoked "in full, including the associated designations and classifications, one year following the effective date of the designations for the eight-hour NAAQS [for ozone]" (69 FR 23951). As such, the one-hour ozone standard was revoked in the SDAB on June 15, 2005. Requirements for transitioning from the one-hour to eight-hour ozone standard are described in the final rule.

The SDAB was initially classified as a non-attainment area for the federal $PM_{2.5}$ standard. However, it has since been reclassified as an attainment area. The SDAB is a non-attainment area for the state $PM_{2.5}$ standard (State of California 2005a).

On September 21, 2006, the EPA revised the NAAQS for particulate matter. The 24-hour $PM_{2.5}$ standard was strengthened from 65 micrograms per cubic meter ($\mu g/m^3$) to 35 $\mu g/m^3$. The existing standard for annual $PM_{2.5}$ of 15 $\mu g/m^3$ remained the same. In addition, the EPA also revised the standard for PM_{10}. Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, the agency revoked the annual PM_{10} standard (effective December 17, 2006).

States had until December 18, 2007, to make recommendations for areas to be designated attainment and nonattainment. It was recommended that the SDAB be designated as an attainment area for the revised standards (State of California 2007a). The EPA will make the final designations by late 2009 and those designations will become effective in April 2010. For areas designated as non-attainment, State Implementation Plans for meeting the new standard will be due three years after the designations. States must meet the standards by April 2015 with a possible extension to April 2020.

On March 12, 2008, the EPA further revised the eight-hour ozone standard to 7.5 pphm. On March 12, 2009, CARB submitted its recommendations for area designations for the revised federal eight-hour ozone standard. The recommendations are based on ozone measurements collected during 2006 through 2008. It was recommended that the SDAB be classified as nonattainment. EPA will issue final area designations no later than March 2010 (if there is insufficient information to make these designation, the EPA will issue designations no later than March 2011). California must then submit an SIP outlining how the state will meet the standards by a date that EPA will establish in a separate rule. That date will be no later than three years after EPA's final designations (e.g., if final designations are made in 2010, the SIP must be submitted by 2013). The deadline for attaining the standard may vary based on the severity of the problem in the area.

The current state and federal ambient air quality standards are presented in Table 1.

TABLE 1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	20 µg/m^3		--		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	Non-dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		--	--	--
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Gas Phase Chemilumine-scence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m^3)		--		
Lead[8]	30 days average	1.5 µg/m^3	Atomic Absorption	--	--	High Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m^3	Same as Primary Standard	
	Rolling 3-Month Average[9]	--		0.15 µg/m^3		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	--	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	--	Spectrphotomerty (Pararosoaniline Method)
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	--	
	3 Hour	--		--	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (665 µg/m^3)		--	--	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer –visibility of 10 miles or more (0.07 – 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chroma-tography	No Federal Standards		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence	No Federal Standards		
Vinyl Chloride[8]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chroma-tography	No Federal Standards		

TABLE 1
AMBIENT AIR QUALITY STANDARDS
(continued)

SOURCE: State of California 2008a.

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

[1]California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2]National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

[3]Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25º C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25º C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4]Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

[5]National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[6]National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7]Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

[8]The ARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[9]National lead standard, rolling 3-month average: final rule signed October 15, 2008.

3.2 State Regulations

The EPA allows states the option to develop different (stricter) standards. The state of California generally has set more stringent limits on the seven criteria pollutants (see Table 1). The California Clean Air Act (CCAA), also known as the Sher Bill or Assembly Bill (AB) 2595, was signed into law on September 30, 1988, and became effective on January 1, 1989. The CCAA requires that districts implement regulations to reduce emissions from mobile sources through the adoption and enforcement of transportation control measures and (South Coast Air Quality Management District [SCAQMD] 2003):

- Demonstrate the overall effectiveness of the air quality program;
- Reduce nonattainment pollutants at a rate of five percent per year, or include all feasible measures and expeditious adoption schedule;
- Ensure no net increase in emissions from new or modified stationary sources;
- Reduce population exposure to severe nonattainment pollutants according to a prescribed schedule;
- Include any other feasible controls that can be implemented, or for which implementation can begin, within 10 years of adoption of the most recent air quality plan; and
- Rank control measures by cost-effectiveness.

3.3 Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is a significant public health issue in California. In 1983 the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health (AB 1807: Health and Safety Code Sections 39650-39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

Diesel-exhaust particulate matter emissions have been established as TACs. Diesel emissions generated within the County and surrounding areas pose a potential hazard to residents and visitors. Following the identification of diesel particulate matter as an air toxic in 1998, the CARB has worked on developing strategies and regulations aimed at reducing the risk from diesel particulate matter. The overall strategy for achieving these reductions is found in the "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles" (State of California 2005b). A stated goal of the plan is to reduce the cancer risk statewide arising from exposure to diesel particulate matter 75 percent by 2010 and 85 percent by 2020.

A number of programs and strategies to reduce diesel particulate matter have been or are in the process of being developed, including (State of California 2007b):

The Carl Moyer Program: This program, administered by the CARB, was initially approved in February 1999 and was revised in November 2000. It provides grants to private companies, public agencies, or individuals operating heavy-duty diesel engines to cover an incremental portion of the cost of cleaner on-road, off-road, marine, locomotive, and agricultural irrigation pump engines.

On-Road Heavy-Duty Diesel New Engine Program: This program develops strategies and regulations to reduce diesel emissions from new on-road diesel powered equipment. Emission control regulations have been coordinated with the U.S. EPA and require that new engines manufactured in and subsequent to 2004 meet new emissions requirements for particulates and other pollutants.

Heavy-Duty Diesel In-Use Strategies Program: The goal of this program is to develop and implement strategies for reducing diesel emissions from existing on- and off-road diesel engines. The Retrofit Assessment section is responsible for the development and implementation of procedures for assessing, recommending, and approving emission control devices. The Retrofit Implementation section is responsible for developing plans for retrofitting on- and off-road engines with emission reducing technologies. To date plans being developed or implemented have targeted solid waste collection vehicles, on-road heavy-duty public fleet vehicles, and fuel delivery trucks. Generally these plans require that a percentage of the fleet, based on age of the vehicles, be retrofitted on a predetermined schedule.

In-Use Off-Road Diesel Vehicle Regulation: The goal of this program is to reduce diesel PM and NO_x emissions from in-use off-road heavy-duty diesel equipment. Any person who owns or operates off-road diesel equipment is required to apply exhaust retrofits to capture pollutants and to quickly repower heavy polluting fleets with newer, cleaner engines. The compliance date for large fleets (over 5,000 horsepower) is 2010, the compliance date for medium fleets (2,501 to 5,000 horsepower) is 2013, and the compliance date for small fleets (2,500 horsepower or less) is 2015.

Other programs include:

Off-Road Mobile Sources Emission Reduction Program: The goal of this program is to develop regulations to control emissions from diesel, gasoline, and alternative-fueled off-road mobile engines. These sources include a range of equipment from lawn mowers to construction equipment to locomotives.

Heavy-Duty Vehicle Inspection and Periodic Smoke Inspection Program: This program provides periodic inspections to ensure that truck and bus fleets do not emit excessive amounts of smoke.

Lower-Emission School Bus Program: Under this program, and in coordination with the California Energy Commission, the CARB is developing guidelines to provide criteria for the purchase of new school buses and the retro-fit of existing school buses to reduce particulate matter emissions.

As an ongoing process, the CARB will continue to establish new programs and regulations for the control of diesel particulate emissions as appropriate. The continued development and implementation of these programs and policies will ensure that the public exposure to diesel particulate matter will continue to decline.

3.4 State Implementation Plan

The State Implementation Plan (SIP) is a collection of documents that set forth the state's strategies for achieving the air quality standards. The SDAPCD is responsible for preparing and implementing the portion of the SIP applicable to the SDAB. The SDAPCD adopts rules, regulations, and programs to attain state and federal air quality standards, and appropriates money (including permit fees) to achieve these objectives.

3.5 The California Environmental Quality Act

Section 15125(d) of the California Environmental Quality Act (CEQA) Guidelines requires discussion of any inconsistencies between the Proposed Project and applicable general plans and regional plans, including the applicable air quality attainment or maintenance plan (or State Implementation Plan).

3.6 San Diego Air Pollution Control District

The SDAPCD is the agency that regulates air quality in the SDAB. The SDAPCD prepared the 1991/1992 Regional Air Quality Strategy (RAQS) in response to the requirements set forth in AB-2595. The draft was adopted, with amendments, on June 30, 1992 (County of San Diego 1992). Attached, as part of the RAQS, are the transportation control measures (TCM) for the air quality plan prepared by the San Diego Association of Governments (SANDAG) in accordance with AB-2595 and adopted by SANDAG on March 27, 1992, as Resolution Number 92-49 and Addendum. The required triennial updates of the RAQS and corresponding TCM were adopted in 1995, 1998, 2001, and 2004. The RAQS and TCM plan set forth the steps needed to accomplish attainment of state and federal ambient air quality standards.

The SDAPCD has also established a set of rules and regulations initially adopted on January 1, 1969, and periodically reviewed and updated. These rules and regulations are available for review on the agency's website (www.sdapcd.co.san-diego.ca.us).

4.0 Environmental Setting

4.1 Geographic Setting

The Proposed Project is located in the county of San Diego within the SDAB and approximately 21 miles east of the Pacific Ocean. The eastern portion of the SDAB is surrounded by mountains to the north, east, and south. These mountains tend to restrict airflow and concentrate pollutants in the valleys and low-lying areas below.

4.2 Climate

The Proposed Project area, like the rest of San Diego County's inland valley areas, has a Mediterranean climate characterized by warm, dry summers and mild, wet winters. The mean annual temperature for the Proposed Project area is 74 degrees Fahrenheit (F). The average annual precipitation is 13 inches, falling primarily from November to April. Winter low temperatures in the Proposed Project area average about 44 degrees F, and summer high temperatures average about 81 degrees F (U.S. Department of Commerce 2006).

The dominant meteorological feature affecting the region is the Pacific High Pressure Zone, which produces the prevailing westerly to northwesterly winds. These winds tend to blow pollutants away from the coast toward the inland areas. Consequently, air quality near the coast is generally better than that which occurs at the base of the coastal mountain range.

Fluctuations in the strength and pattern of winds from the Pacific High Pressure Zone interacting with the daily local cycle produce periodic temperature inversions that influence the dispersal or containment of air pollutants in the SDAB. Beneath the inversion layer, pollutants become "trapped" as their ability to disperse diminishes. The mixing depth is the area under the inversion layer. Generally, the morning inversion layer is lower than the afternoon inversion layer. The greater the change between the morning and afternoon mixing depths, the greater the ability of the atmosphere to disperse pollutants.

Throughout the year the height of the temperature inversion in the afternoon varies between approximately 1,500 and 2,500 feet above mean sea level (MSL). In winter, the

morning inversion layer is about 800 feet above MSL. In summer, the morning inversion layer is about 1,100 feet above MSL. Therefore, air quality tends to be better in winter than in summer. The Proposed Project is situated at an elevation of approximately 650 feet above MSL (the site ranges from 300 feet to over 550 feet at the northern end).

The prevailing westerly wind pattern is sometimes interrupted by regional "Santa Ana" conditions. A Santa Ana occurs when a strong high pressure develops over the Nevada-Utah area and overcomes the prevailing westerly coastal winds, sending strong, steady, hot, dry northeasterly winds over the mountains and out to sea.

Strong Santa Ana winds tend to blow pollutants out over the ocean, producing clear days. However, at the onset or during breakdown of these conditions, or if the Santa Ana is weak, local air quality may be adversely affected. In these cases, emissions from the South Coast Air Basin to the north are blown out over the ocean, and low pressure over Baja California draws this pollutant-laden air mass southward. As the high pressure weakens, prevailing northwesterly winds reassert themselves and send this cloud of contamination ashore in the SDAB.

When this event does occur, the combination of transported and locally produced contaminants produce the worst air quality measurements recorded in the basin.

4.3 Existing Air Quality

The Proposed Project is within the SDAB. Air quality at a particular location is a function of the kinds and amounts of pollutants being emitted into the air locally and throughout the basin and the dispersal rates of pollutants within the region. The major factors affecting pollutant dispersion are wind speed and direction, the vertical dispersion of pollutants (which is affected by inversions), and the local topography.

Air quality is commonly expressed as the number of days in which air pollution levels exceed state standards set by the CARB or federal standards set by the EPA. The SDAPCD maintains 10 air-quality monitoring stations located throughout the greater San Diego metropolitan region. Air pollutant concentrations and meteorological information are continuously recorded at these 10 stations. Measurements are then used by scientists to help forecast daily air pollution levels. Table 2 summarizes the number of days per year during which state and federal standards were exceeded in the SDAB during the years 2003 to 2007. The Escondido monitoring station, located on East Valley Parkway, or approximately fifteen miles south of the Proposed Project, is the nearest station to the Proposed Project area. Table 3 provides a summary of measurements of ozone (O_3), carbon monoxide (CO), PM_{10}, and $PM_{2.5}$ collected at the Escondido – East Valley Parkway monitoring station for the years 2003 through 2007.

TABLE 2
AMBIENT AIR QUALITY SUMMARY – SAN DIEGO AIR BASIN

Pollutant	Average Time	California Ambient Air Quality Standards[a]	Attainment Status	National Ambient Air Quality Standards[b]	Attainment Status[c]	Maximum Concentration					Number of Days Exceeding State Standard					Number of Days Exceeding National Standard				
						2003	2004	2005	2006	2007	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
O_3	1 hour	0.09 ppm	N	N/A	N/A	.125	.129	.113	.121	.134	24	12	16	23	21	1	1	0	0	0
O_3	8 hours	0.07ppm	N	0.08 ppm	N	.103	.095	.089	.100	.092	N/A	N/A	N/A	N/A	50	6	8	5	14	7
CO	1 hour	20 ppm	A	35 ppm	A	12.70	6.90	Na	Na	Na	0	0	Na	Na	Na	0	0	Na	Na	Na
CO	8 hours	9.0 ppm	A	9 ppm	A	10.64	4.11	4.71	3.61	5.18	1	0	0	0	0	1	0	0	0	0
NO_2	1 hour	0.18 ppm*	A	N/A	N/A	.148	.125	.109	.097	.101	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A
NO_2	Annual	0.030 ppm*	N/A	0.053 ppm	A	.019	.017	.015	.017	.015	N/A	N/A	N/A	N/A	N/A	NX	NX	NX	NX	NX
SO_2	1 hour	25 pphm	A	N/A	N/A	.036	.045	Na	Na	Na	0	0	Na	Na	Na	N/A	N/A	N/A	N/A	N/A
SO_2	24 hours	4 pphm	A	14 pphm	A	.020	.016	Na	Na	Na	0	0	Na	Na	Na	0	0	Na	Na	Na
SO_2	Annual	N/A	N/A	3 pphm	A	Na	Na	Na	Na	Na	N/A	N/A	N/A	N/A	N/A	Na	Na	Na	Na	Na
PM_{10}	24 hours	50 $\mu g/m^3$	N	150 $\mu g/m^3$	N	289	138	154	134	394	150.7	174.5	13.1	159.4	159.0	9.2	0	5.8	0	6
PM_{10}	Annual	20 $\mu g/m^3$	N	N/A	N/A	52.6	51.7	28.6	54.1	59	EX	EX	EX	EX	EX	N/A	N/A	N/A	N/A	N/A
$PM_{2.5}$	24 hours	N/A	N/A	35 $\mu g/m^3$	A	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na
$PM_{2.5}$	Annual	12 $\mu g/m^3$	A	15 $\mu g/m^3$	A	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na	Na

SOURCE: State of California 2006, 2008b.
*This concentration was approved by the Air Resources Board on February 22, 2007. New 1-hour and annual concentrations would not have been exceed during the years 2003 through 2007.
[a]California standards for ozone, carbon monoxide (except at Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and PM_{10} are values that are not to be exceeded. Some measurements gathered for pollutants with air quality standards that are based upon 1-hour, 8-hour, or 24-hour averages, may be excluded if the CARB determines they would occur less than once per year on average.
[b]National standards other than for ozone and particulates, and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one.
[c]A = attainment; N = non-attainment; N/A = not applicable; Na = data not available; NX = annual average not exceeded; EX = annual average exceeded.
NOTE: Federal 1 hour ozone standard revoked in SDAB on June 15, 2005
ppm = parts per million, pphm = parts per hundred million, $\mu g/m^3$ = micrograms per cubic meter.
Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

TABLE 3
SUMMARY OF AIR QUALITY MEASUREMENTS RECORDED
AT THE ESCONDIDO EAST VALLEY PARKWAY MONITORING STATION

Pollutant/Standard	2003	2004	2005	2006	2007
Ozone					
Days State 1-hour Standard Exceeded (0.09 ppm)	3	2	1	3	0
Days Federal 1-hour Standard Exceeded (0.12 ppm)	0	0	0	0	0
Days Federal 8-hour Standard Exceeded (0.08 ppm)	0	2	0	2	0
Days State 8-hour Standard Exceeded (0.07 ppm)	9	9	2	11	5
Max. 1-hr (ppm)	0.105	0.099	0.095	0.108	0.094
Max 8-hr (ppm)	0.083	0.086	0.079	0.096	0.077
Carbon Monoxide					
Days State 8-hour Standard Exceeded (20 ppm)	1	0	0	0	0
Days Federal 8-hour Standard Exceeded (35 ppm)	1	0	0	0	0
Max. 1-hr (ppm)	12.7*	6.3	5.9	5.7	5.2
Max. 8-hr (ppm)	10.64	3.61	3.10	3.61	3.19
Nitrogen Dioxide					
Days State 1-hour Standard Exceeded (0.25 ppm)	0	0	0	0	0
Max 1-hr (ppm)	0.135	0.080	0.076	0.071	0.072
Annual Average (ppm)	0.020	0.018	0.016	0.017	0.016
PM_{10}					
Days State 24-hour Standard Exceeded (50 $\mu g/m^3$)	30.7	6.1	0	5.8	11.5
Days Federal 24-hour Standard Exceeded (150 $\mu g/m^3$)	3.3	0	0	0	0
Max. Daily ($\mu g/m^3$)	179*	57	42	51	68
State Annual Average ($\mu g/m^3$)	32.7	27.3	23.9	24.2	26.9
Federal Annual Average ($\mu g/m^3$)	31.6	27.5	23.9	24.1	26.7
$PM_{2.5}$					
Days Federal 24-hour Standard Exceeded (65 $\mu g/m^3$)	1	1	0	0	2
Max. Daily ($\mu g/m^3$)	69.2*	67.3	43.1	40.6	126.2*
Annual Average ($\mu g/m^3$)	14.2	14.1	Na	11.5	13.3

SOURCE: State of California 2006, 2008b.
Na = not available
Lead concentrations in the SDAB have not exceeded the state or federal standard during at least the past 10 years.
*The measurement was taken during the San Diego County forest fire and, therefore, is not an accurate representation of ambient conditions.

The Oceanside – Mission Avenue monitoring station is also located approximately fifteen miles from the Proposed Project. This monitoring station is located to the west of the Proposed Project area, adjacent to the coast. Coastal monitoring stations show that air quality near the coast is typically better than it is inland. Because it is not representative of the air quality near the Proposed Project area, the monitoring data recorded at the Oceanside – Mission Avenue monitoring station were not examined in this analysis.

4.3.1 Ozone

Ozone is the primary air pollution problem in the SDAB. Because sunlight plays such an important role in its formation, ozone pollution or smog is mainly a concern during the daytime in summer months. Nitrogen oxides and hydrocarbons (reactive organic gases) are known as the chief "precursors" of ozone. These compounds react in the presence of sunlight to produce ozone. The SDAB is currently designated a federal and state non-attainment area for ozone. Ozone concentration measurements recorded in the SDAB dating back to the late 1970s show a distinctive downward trend with occasional peaks due primarily to meteorological influences (County of San Diego 2002b).

About half of smog-forming emissions come from automobiles (County of San Diego 2004). Population growth in San Diego has resulted in a large increase in the number of automobiles expelling ozone-forming pollutants while operating on area roadways. In addition, the occasional transport of smog-filled air from Los Angeles only adds to the SDAB's ozone problem. More strict automobile emission controls, including more efficient automobile engines, have played a large role in why ozone levels have steadily decreased.

The former national one-hour ozone standard was not exceeded at the Escondido – East Valley Parkway monitoring station during the five-year period of 2003 to 2007. The stricter state standard for ozone was exceeded at the Escondido – East Valley Parkway monitoring station three days in 2003, two days in 2004, one day in 2005, and three days in 2006 (State of California 2008b).

In order to address adverse health effects due to prolonged exposure, the U.S. EPA phased out the national one-hour ozone standard and replaced it with the more protective eight-hour ozone standard. The SDAB is currently a nonattainment area for the national eight-hour standard. The national eight-hour standard was exceeded twice in 2004 and twice in 2006 at the Escondido—East Valley Parkway monitoring station.

As discussed above, the federal eight-hour ozone standard has been changed to 7.5 pphm. However, this does not apply to the monitoring from 2003 to 2007. Not all of the ozone within the SDAB is derived from local sources. Under certain meteorological conditions, such as during Santa Ana wind events, ozone and other pollutants are transported from the Los Angeles Basin and combine with ozone formed from local

emissions sources to produce elevated ozone levels in the SDAB. According to SANDAG, on average approximately 42 percent of the days that had ozone concentrations over the state standard between 1987 and 1994 were attributable to pollution transported from Los Angeles (SANDAG 1994:249-250). According to the SDAPCD, ozone transported into the SDAB from the South Coast Air Basin (Los Angeles area) was the primary cause for the SDAB exceeding national ozone thresholds on 27 of a total of 33 days from 1994 to 1998 (County of San Diego 2000).

Local agencies can control neither the source nor the transportation of pollutants from outside the SDAB. The SDAPCD's policy, therefore, has been to control local sources effectively enough to reduce locally produced contamination to clean air standards. Through the use of air pollution control measures outlined in the RAQS, the SDAPCD has effectively reduced ozone levels in the SDAB.

Actions that have been taken in the SDAB to reduce ozone concentrations include:

- **Transportation Control Measures (TCMs) if vehicle travel and emissions exceed attainment demonstration levels.** TCMs are strategies that will reduce transportation-related emissions by reducing vehicle use or improving traffic flow.

- **Enhanced motor vehicle inspection and maintenance program.** The smog check program is overseen by the Bureau of Automotive Repair. The program requires most vehicles to pass a smog test once every two years before registering in the state of California. The smog check program monitors the amount of pollutants automobiles produce. One focus of the program is identifying "gross polluters" or vehicles that exceed two times the allowable emissions for a particular model. Regular maintenance and tune-ups, changing the oil, and checking tire inflation can improve gas mileage and lower air pollutant emissions. It can also reduce traffic congestion due to preventable breakdowns, further lowering emissions.

- **Clean-fuel vehicle program.** The clean-fuel vehicle program, overseen by CARB, requires the development of cleaner burning cars and clean alternative fuels by requiring the motor vehicle industry to develop new technologies to meet air quality requirements. Clean-fuel vehicles are those that meet the emissions standards set in the 1990 amendments to the Clean Air Act. Cleaner vehicles and fuels will result in continued reductions in vehicle pollutant emissions despite increases in travel.

4.3.2 Carbon Monoxide

The SDAB is classified as a state and federal attainment area for carbon monoxide (County of San Diego 1998). Until 2003 no violations of the state standard for CO had been recorded in the SDAB since 1991 and no violations of the national standard had been recorded in the SDAB since 1989. As seen in Table 2, both the federal and state eight-hour CO standards were exceeded in the County on one day in 2003. This

exceedance occurred on October 28, 2003, at a time when major wildfires were raging throughout the County. Consequently, this exceedance was likely caused by the wildfires and would be considered beyond the control of the SDAPCD.

Small-scale, localized concentrations of carbon monoxide above the state and national standards have the potential to occur at intersections with stagnation points such as those that occur on major highways and heavily traveled and congested roadways. Localized high concentrations of CO are referred to as "CO hot spots" and are a concern at congested intersections when automobile engines burn fuel less efficiently and their exhaust contains more CO.

4.3.3 PM_{10}

PM_{10} is particulate matter with an aerodynamic diameter of 10 microns or less. Ten microns is about one-seventh of the diameter of a human hair. Particulate matter is a complex mixture of very tiny solid or liquid particles composed of chemicals, soot, and dust. Sources of PM_{10} emissions in the SDAB consist mainly of urban activities, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere.

Under typical conditions (i.e., no wildfires) particles classified under the PM_{10} category are mainly emitted directly from activities that disturb the soil including travel on roads and construction, mining, or agricultural operations. Other sources include windblown dust, salts, brake dust, and tire wear (County of San Diego 1998). For several reasons hinging on the area's dry climate and coastal location, the SDAB has special difficulty in developing adequate tactics to meet present state particulate standards.

As of 2003, the national standards for PM_{10} had never been exceeded in the SDAB since the standards were established. Therefore, the EPA has designated the SDAB unclassifiable for PM_{10}. In 2003, the measured federal PM_{10} standard was exceeded twice in the SDAB. These two exceedances result in a calculated number of days that the federal standard was exceeded of approximately nine days for the year (see Table 2). The first exceedance occurred on October 29, 2003, at a time when major wildfires were raging throughout the County. The second exceedance occurred on November 23, 2003, during high winds, which caused large amounts of ash from the previous fires to be resuspended.

Consequently, these exceedances were likely caused by or were a subsequent result of the wildfires and would be beyond the control of the SDAPCD. As such, these events are covered under the U.S. EPA's Natural Events Policy that permits, under certain circumstances, the exclusion of air quality data attributable to uncontrollable natural events (e.g., volcanic activity, wildland fires, and high wind events).

In 2005 and 2007, the measured federal PM_{10} standard was exceeded once in the SDAB on October 13 and October 21, respectively. These exceedances result in a calculated number of days that the federal standards were exceeded of approximately six days for 2005 and 2007 (see Table 2).

At the Escondido—East Valley Parkway monitoring station, the national 24-hour PM_{10} standard was exceeded once in 2003. This exceedance resulted in a calculated number of days that the federal standard was exceeded of 3.3 for 2003. The stricter state 24-hour standard was exceeded five days in 2003, one day in 2004, one day in 2006, and two days in 2007 (State of California 2008b). These exceedances resulted in a calculated number of days that the state standard were exceeded of 30.7 days in 2003, 6.1 days in 2004, 5.8 days in 2006, and 11.5 days in 2007.

4.3.4 $PM_{2.5}$

Airborne, inhalable particles with aerodynamic diameters of 2.5 microns or less ($PM_{2.5}$) have been recognized as an air quality concern requiring regular monitoring. Federal regulations required that $PM_{2.5}$ monitoring begin January 1, 1999 (County of San Diego 1999). The Escondido – East Valley Parkway monitoring station is one of five stations in the SDAB that monitors $PM_{2.5}$. Federal $PM_{2.5}$ standards established in 1997 include an annual arithmetic mean of 15 $\mu g/m^3$ and a 24-hour concentration of 65 $\mu g/m^3$. As discussed above, the 24-hour $PM_{2.5}$ standard has been changed to 35 $\mu g/m^3$. However, this does not apply to the monitoring from 2003 to 2007. State $PM_{2.5}$ standards established in 2002 are an annual arithmetic mean of 12 $\mu g/m^3$. Table 3 shows that the prior 24-hour $PM_{2.5}$ standard was exceeded once in 2003, once in 2004, and twice in 2007 at the Escondido – East Valley Parkway monitoring station. The data also indicate that the new federal standard would have been exceeded each year from 2003 to 2007.

A list of recommended designations was due to the EPA by February 15, 2004. The CARB supplied monitoring data for the years 2000 through 2002 to the EPA on February 11, 2004. The EPA reviewed the designation recommendations, made some modifications, and on January 5, 2005, listed the final designations in the Federal Register (EPA 2004c). These designations became effective April 5, 2005.

The SDAB was initially classified as a non-attainment area; however, it was subsequently reclassified as an attainment area for the $PM_{2.5}$ standard (U.S. EPA 2004c). The SDAB is a non-attainment area for the state $PM_{2.5}$ standard (State of California 2005a).

For the new particulate standard, state recommendations for area designations were due to the EPA by December 18, 2007, and the EPA will make the final designations by November 2009. It was recommended that the SDAB be designated as an attainment area for the revised standards (State of California 2007b).

4.3.5 Other Criteria Pollutants

The national and state standards for NO_2, SO_2, and lead are being met in the SDAB and the latest pollutant trends suggest that these standards will not be exceeded in the foreseeable future.

5.0 Guidelines of Significance

5.1 California Air Resources Board

For purposes of assessing the significance of air quality impacts, the CARB has established guidelines, as described below.

For long-term emissions, the direct impacts of a project can be measured by the degree to which the Proposed Project is consistent with regional plans to improve and maintain air quality. The regional plan for San Diego is the 1991/1992 RAQS and attached TCM plan, as revised by the triennial updates adopted in 1995, 1998, 2001, and 2004. The CARB provides criteria for determining whether a project conforms with the RAQS (State of California 1989), which include the following:

1. Is a regional air quality plan being implemented in the project area?
2. Is the project consistent with the growth assumptions in the regional air quality plan?
3. Does the project incorporate all feasible and available air quality control measures?

5.2 County of San Diego

The County of San Diego has approved Guidelines for Determining Significance (March 19, 2007) that encompass Appendix G of the 2006 CEQA Guidelines and are intended to provide consistency in the environmental analysis. The basis for the determination of significance for Guidelines 1 through 4 is the County of San Diego's Guidelines for Determination of Significance, Air Quality, adopted July 30, 2007. A project will have a significant adverse environmental impact related to air quality if the project would:

1. Conflict with or obstruct the implementation of the San Diego Regional Air Quality Strategy (RAQS) and/or applicable portions of the State Implementation Plan (SIP).

2. Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation.

a. Result in emissions that exceed 250 pounds per day of NOx, or 75 pounds per day of VOCs.

b. Result in emissions of carbon monoxide of 550 pounds per day, and when totaled with the ambient concentrations will exceed a 1-hour concentration of 20 parts per million (ppm) or an 8-hour average of 9 ppm.

c. Result in emissions of PM2.5 that exceed 55 pounds per day.

d. Result in emissions of PM10 that exceed 100 pounds per day and increase the ambient PM10 concentration by 5 micrograms per cubic meter (5.0 µg/m3) or greater at the maximum exposed individual.

e. Result in emissions of ROG, as a precursor to Ozone, that exceed 75 pounds per day.

3. Expose sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, day-care centers and project residents) to substantial pollutant concentrations.

a. Place sensitive receptors near CO "hotspots" or creates CO "hotspots" near sensitive receptors.

b. Result in exposure to TACs resulting in a maximum incremental cancer risk greater than 1 in 1 million without application of Toxics-Best Available Control Technology or a health hazard index greater than one would be deemed as having a potentially significant impact.

4. Expose considerable number of persons to objectionable odors.

5.3 SDAPCD Emissions Criteria

Emissions resulting from implementation of the Proposed Project would be due primarily to an increase in traffic associated with the construction and the daily operations of the Proposed Project. The SDAPCD does not provide specific numerics for determining the significance of mobile source-related impacts. However, the district does specify Air Quality Impact Analysis (AQIA) screening levels for new or modified stationary sources (APCD Rules 20.2 and 20.3). If these incremental levels are exceeded, the district requires that an AQIA be performed for the Proposed Project. Although these screening levels do not generally apply to mobile sources, for comparative purposes, these levels are used to evaluate the increased emissions that would be discharged to the SDAB if the Proposed Project were approved. The AQIA screening levels are shown in Table 4 (Note: there is no level specified for reactive organic gases [ROG]).

TABLE 4
SCREENING-LEVEL CRITERIA FOR AIR QUALITY IMPACT ANALYSIS

Pollutant	Total Emissions	
	Lb. per Hour	Lb. per Day
Respirable Particulate Matter (PM_{10})	---	100
Oxides of Nitrogen (NO_x)	25	250
Oxides of Sulfur (SO_x)	25	250
Carbon Monoxide (CO)	100	550
Lead and Lead Compounds	---	3.2
Volatile Organic Compounds (VOCs)*	---	75

*The threshold for VOCs is based on the guidelines of significance for reactive organic gases from Chapter 6 of the CEQA Air Quality Handbook of the South Coast Air Quality Management District (SCAQMD 1993). This standard is appropriate because the meteorological data associated with the Proposed Project is similar to characteristics of the San Coast Air Basin.

In addition to a comparison with the thresholds, the Proposed Project should be evaluated to determine whether it has the potential to produce carbon monoxide hot spots at intersections in the vicinity of the Proposed Project. A hot spot is a localized area, most often near a congested intersection, where the one-hour or eight-hour carbon monoxide standards are exceeded. Localized carbon monoxide impacts can occur where projects contribute traffic to intersections in areas where the ambient carbon monoxide concentrations are projected to be near or above state or federal standards. However, hot spots almost exclusively occur near intersections with level of service (LOS) E or worse.

5.4 Public Nuisance Law (Odors)

The State of California Health and Safety Code (H&S) Sections 41700 and 41705, and San Diego Air Pollution Control District Rule 51, commonly referred to as public nuisance law, prohibits emissions from any source whatsoever in such quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. The provisions of these regulations do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals. It is generally accepted that the considerable number of persons requirement in Rule 51 is normally satisfied when 10 different individuals/households have made separate complaints within 90 days. Odor complaints from a “considerable” number of persons or businesses in the area will be considered to be a significant, adverse odor impact.

Every use and operation shall be conducted so that no unreasonable heat, odor, vapor, glare, vibration (displacement), dust, smoke, or other forms of air pollution subject to air pollution control district standards shall be discernible at the property line of the parcel upon which the use or operation is located.

Therefore, any unreasonable odor discernible at the property line of the Proposed Project will be considered a significant odor impact.

6.0 Air Quality Assessment

Air quality impacts can result from the construction and operation of the Proposed Project. Construction impacts are short term and result from fugitive dust, equipment exhaust, and indirect effects associated with construction workers and deliveries. Operational impacts can occur on two levels: regional impacts resulting from growth-inducing development or local hot-spot effects stemming from sensitive receivers being placed close to highly congested roadways. In the case of the Proposed Project, operational impacts are primarily due to emissions to the basin from mobile sources associated with the vehicular travel along the roadways within the Proposed Project area.

Air emissions were calculated using the URBEMIS 2007 computer program (Rimpo and Associates 2007). The URBEMIS 2007 program is a tool used to estimate air emissions resulting from land development projects in the state of California. The model generates emissions from three basics sources: construction sources, area sources (e.g., fireplaces, natural gas heating, etc.), and operational sources (e.g., traffic).

Inputs to URBEMIS 2007 include such items as the air basin containing the Proposed Project, land uses, trip generation rates, trip lengths, vehicle fleet mix (percentage autos, medium truck, etc.), trip distribution (i.e., percent home to work, etc.), duration of construction phases, construction equipment usage, grading areas, season, and ambient temperature, as well as other parameters. URBEMIS 2007 does not include SDAB specific emission data. The South Coast Air Basin (SCAB) emission data were used. This is appropriate, because the meteorological data associated with the Proposed Project is similar to the characteristics of the SCAB. The URBEMIS 2007 output files contained in Attachment 1 indicate the specific inputs for each model run. Emissions of NO_x, CO, SO_x, PM_{10}, $PM_{2.5}$, and ROG, an ozone precursor, are calculated. Emission factors are not available for lead, and consequently, lead emissions are not calculated. The basin is currently in attainment of the state and federal lead standards. Furthermore, fuel used in construction equipment is not leaded.

This air quality assessment will follow the Guidelines for Determining Significance required by the County of San Diego.

6.1 Construction-related Air Quality Effects

6.1.1 Equipment Emissions

Heavy-duty construction equipment is usually diesel powered. In general, emissions from diesel-powered equipment contain more nitrogen oxides, sulfur oxides, and particulate matter than gasoline-powered engines. However, diesel-powered engines generally produce less carbon monoxide and less reactive organic gases than do gasoline-powered engines. Standard construction equipment includes dozers, rollers, scrapers, dewatering pumps, backhoes, loaders, paving equipment, delivery/haul trucks, jacking equipment, welding machines, pile drivers, and so on.

Emissions associated with construction of the Proposed Project were calculated using the URBEMIS 2007 computer program assuming that construction would begin in January 2012 and last until 2025. Primary inputs are the numbers of each piece of equipment and the length of each phase.

The URBEMIS 2007 computer program divides construction into seven phases: demolition, mass site grading, fine site grading, trenching, paving, building construction, and architectural coatings.

Site grading volumes would be balanced on-site and there would be no import or export of soil. In general, the defaults for program parameters such as numbers and pieces of equipment were used. Table 5 summarizes the lengths of each construction phase and the default numbers and pieces of equipment used for each phase.

TABLE 5
CONSTRUCTION PARAMETERS

Phase	Length of Phase (Weeks)	Equipment Used	Horse-power	Load Factor	Hours/ Day
Demolition	2	3 Excavators	168.00	0.570	8.0
		2 Rubber Tired Dozers	357.00	0.590	8.0
Mass Site Grading	153	1 Excavator	168.00	0.570	8.0
		1 Grader	174.00	0.610	8.0
		1 Rubber-Tired Dozer	357.00	0.590	8.0
		3 Scrapers	313.00	0.720	8.0
		3 Tractor/Loader/Backhoe	108.00	0.550	8.0
		1 Water Truck	189.00	0.500	8.0
Fine Site Grading	66	1 Excavator	168.00	0.570	8.0
		1 Grader	174.00	0.610	8.0
		1 Rubber-Tired Dozer	357.00	0.590	8.0
		3 Scrapers	313.00	0.720	8.0
		3 Tractor/Loader/Backhoe	108.00	0.550	8.0
		1 Water Truck	189.00	0.500	8.0
Trenching	22	2 Excavators	168.00	0.570	8.0
		1 Other General Industrial Equipment	238.00	0.510	8.0
		1 Tractor/Loader/Backhoe	108.00	0.550	8.0
Paving	22	1 Paver	100.00	0.620	8.0
		2 Paving Equipment	104.00	0.530	8.0
		2 Roller	95.00	0.560	6.0
Building Construction	385	1 Crane	399.00	0.430	7.0
		3 Forklifts	145.00	0.300	8.0
		1 Generator Set	49.00	0.740	8.0
		3 Tractor/Loader/Backhoe	108.00	0.550	7.0
		1 Welders	45.00	0.450	8.0
Architectural Coatings	53	N/A	N/A	N/A	N/A

SOURCE: Rimpo and Associates 2007.
NOTE: Load Factor = percentage of time equipment uses the full load potential.
N/A = Not Applicable

This analysis assumes that standard dust and emission control during grading operations would be implemented to reduce potential nuisance impacts and to ensure compliance with SDAPCD rules and regulations. The following standard fugitive dust control required as part of grading are considered project design considerations and were taken into account for calculating construction emissions:

1. All unpaved construction areas shall be sprinkled with water or other acceptable SDAPCD dust control agents at least three times daily and during dust-generating activities to reduce dust emissions. Additional watering or acceptable SDAPCD dust control agents shall be applied during dry weather or windy days until dust emissions are not visible.

2. Apply soil stabilizers to inactive areas.

3. A 15-mile-per-hour speed limit on unpaved surfaces shall be enforced.

4. On dry days, dirt and debris spilled onto paved surfaces shall be swept up immediately to reduce resuspension of particulate matter caused by vehicle

movement. Approach routes to construction sites shall be cleaned daily of construction-related dirt in dry weather.

5. Disturbed areas shall be hydroseeded, landscaped, or developed as quickly as possible and as directed by the County of San Diego and/or SDAPCD to reduce dust generation.

Table 6 shows the total projected construction maximum daily emission levels for each criteria pollutant.

For modeling the Proposed Project's emissions in URBEMIS 2007, the SCAB emission data was used and the SCAQMD rules regarding architectural VOC content were assumed. Therefore, the coatings used for the Proposed Project would have to conform to these low VOC content coatings. Residential interior coatings must have a content less than or equal to 50 grams per liter, residential exterior coatings must have a content less than or equal to 100 grams per liter, and non-residential exterior and interior coatings must have a content less than or equal to 250 grams per liter.

Note that the emissions summarized in Table 6 are the maximum emissions for each pollutant and that they may occur during different phases of construction. They would not necessarily occur simultaneously. These are, therefore, the worst-case emissions. For assessing the significance of the air quality emissions resulting during construction of the Proposed Project, the construction emissions were compared to the SDAPCD Air Quality Impact Analysis (AQIA) thresholds used for evaluating this Proposed Project as discussed previously. The SDAPCD does not have thresholds for ROG or $PM_{2.5}$. The threshold for ROG was obtained from Chapter 6 of the CEQA Air Quality Handbook of the SCAQMD (SCAQMD 1993). The threshold for $PM_{2.5}$ was obtained from the SCAQMD Final Methodology to Calculate $PM_{2.5}$ and $PM_{2.5}$ Significance Thresholds (SCAQMD 2006). As seen in Table 6, maximum daily construction emissions are not projected to be more than the SDAPCD thresholds. However, should the architectural coatings used not meet low VOC content, impacts would be significant.

6.1.2 Fugitive Dust

Fugitive dust is any solid particulate matter that becomes airborne directly or indirectly as a result of the activities of man or natural events (such as windborne dust), other than that emitted from an exhaust stack. Construction dust is comprised primarily of chemically inert particles that are too large to enter the human respiratory tract when inhaled.

As indicated above, site grading volumes would be balanced on-site and there would be no import or export of soil. The grading period would be approximately four years. As

seen in Table 6, the emissions of PM_{10} are mainly due to fugitive dust during the grading phase. Implementation of standard fugitive dust control measures discussed above would result in PM_{10} and $PM_{2.5}$ emissions that are less than the applicable thresholds.

6.1.3 Diesel-Fired Particulate Matter

As noted previously, diesel particulate matter has been identified as a toxic air contaminant. The health risks associated with diesel particulate matter are those related to long-term exposures (i.e., cancer and chronic effects). With certain exceptions related to workers and other factors, long-term health risk effects to residents are generally evaluated for an exposure period of 70 years (i.e., lifetime exposure).

A health risk evaluation was conducted to assess the potential for significant impacts due to exposure to diesel exhaust particulate matter. Part IV of the *Air Toxics Hot Spots Program Risk Assessment Guidelines* contains guidance for calculating the inhalation dose for different exposure durations for children and adults (U.S. EPA 2000). The inhalation dose was calculated as follows:

$$Dose = (Cair \times BR \times ED \times EF \times 1 \times 10^{-6}) / [AT]$$

Where,

Dose = Inhalation dose [(mg/kg body weight)/day]
Cair = Average annual air concentration of contaminant (µg/m^3)
BR = Average daily breathing rate (L/day-kg body weight)
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
1×10^{-6} = Conversion factor ((µg/m^3) to (mg/L)
AT = Averaging time (period over which exposure is averaged, in days)

Using the SCREEN3 computer program (which conservatively does not account for particulate settling), the diesel particulate concentration (Cair) at the Proposed Project boundary was calculated. As calculated by URBEMIS 2007, a maximum of 3.94 pounds of PM_{10} exhaust would be emitted per day in 2012. It was assumed that the source was an area source centered at the middle of the entire Project Site, the source height was two meters, and the receptor height was one meter. SCREEN3 calculates a diesel particulate concentration of 0.26 µg/m^3 at the Proposed Project boundary. SCREEN3 output files are contained in Attachment 2.

Part IV of the *Air Toxics Hot Spots Program Risk Assessment Guidelines* contains average and high end breathing rates for children and adults. The high end breathing rate for children is 581 L/kg-day and the high end breathing rate for adults is 381 L/kg-day. Construction was assumed to take eight hours per day and five days per week for approximately 14 years. This results in an exposure frequency 2,040 hours, or 85 days, and an exposure duration of 14 years.

TABLE 6
SUMMARY OF WORST-CASE CONSTRUCTION EMISSIONS (POUNDS/DAY)

Year	ROG	NO_x	CO	Sox[1]	PM_{10} Dust	PM_{10} Exhaust	PM_{10}	$PM_{2.5}$ Dust	$PM_{2.5}$ Exhaust	$PM_{2.5}$
2012	10	84	45	0	97	4	100	20	4	24
2013	10	79	42	0	97	4	100	20	3	24
2014	9	73	41	0	97	3	100	20	3	23
2015	9	67	39	0	97	3	100	20	3	23
2016	8	62	38	0	97	3	99	20	3	23
2017	6	30	122	0	1	2	3	0	2	2
2018	6	27	115	0	1	2	3	0	1	2
2019	5	25	108	0	1	1	2	0	1	2
2020	5	23	101	0	1	1	2	0	1	2
2021	4	19	77	0	1	1	2	0	1	1
2022	4	19	77	0	1	1	2	0	1	
2023	4	19	77	0	1	1	2	0	1	1
2024	74	19	77	0	1	1	2	0	1	1
2025	74	0	1	0	0	0	0	0	0	0
SDAPCD Guideline of Significance[2]	75	250	550	250	--	--	100	--	--	55

[1]Emissions calculated by URBEMIS 2007 are for SO_2.
[2]Thresholds for ROG and $PM_{2.5}$ were obtained from the SCAQMD.

The equation above results in an inhalation dose of 7.0×10^{-6} for children and 4.6×10^{-6} for adults. The cancer risk was obtained by multiplying the inhalation dose by the cancer potency factor of 1.1 (kg-day)/mg. This results in a cancer risk of 7.7 in one million for children and 5.1 in one million for adults.

SDAPCD Rule 1210 considers an excess cancer risk of one in one million to be a quantifiable risk, while a risk of ten in one million is the level of risk at which the APCD requires public notification. Additionally, the County of San Diego considers the unit health risk guideline of significance to be ten in one million with the use of T-BACT.

On July 26, 2007, CARB adopted the in-use, off-road diesel vehicle regulation, discussed in Section 3.3 Toxic Air Contaminants, to reduce diesel PM and NO_x emissions from in-use heavy-duty diesel equipment (State of California 2007b). Any person who owns or operates off-road diesel equipment is required to apply exhaust retrofits to capture pollutants and to quickly repower heavy polluting fleets with newer, cleaner engines. The compliance date for large fleets (over 5,000 horsepower) is 2010. Therefore, by complying with the in-use, off-road diesel vehicle regulation, the construction equipment used would be using T-BACT and the threshold of ten in one million would apply. The cancer risks of 7.7 in one million and 5.1 in one million are less than ten in one million. Should the construction fleet not meet these standards, impacts would be significant.

6.1.4 Cumulative Construction Emissions

As discussed above, with the implementation of project design considerations, construction of the Proposed Project would not result in significant direct impacts with the exception of ROG which would be mitigated with use of low VOC content architectural coatings. Cumulatively considerable net increases during the construction phase would typically happen if two or more projects near each other are simultaneously constructing projects. While it is unlikely that construction for all cumulative projects would occur at the same time, the Proposed Project could contribute to significant cumulative impacts if the emissions of concern from the Proposed Project, in combination with the emissions of concern from other proposed projects or reasonably foreseeable future projects within a proximity relevant to the pollutants of concern, are in excess of applicable guidelines. Impacts are cumulatively significant.

6.2 Operation-related Emissions

6.2.1 Mobile Emissions

Mobile source emissions would originate from Proposed Project-generated traffic. Mobile source emissions due to implementation of the Proposed Project were calculated using

the URBEMIS 2007 computer program (Rimpo and Associates 2007). For the purposes of computing the emissions, it was assumed that build-out of the Proposed Project would occur in 2025. The average winter and summer temperatures used in URBEMIS 2007 were assumed to be 40° and 85° F, respectively. The defaults for the other input parameters such as vehicle fleet mix and trip length were assumed. The Proposed Project is anticipated to generate 8,740 average daily trips (LOS Engineering 2009). Trip generation rates from the traffic report were used in the URBEMIS modeling.

The Proposed Project would also result in amounts of on-site source emissions. These emissions would result from activities such as use of natural gas, fireplaces, or consumer products. In addition, landscaping maintenance activities associated with the proposed development would produce pollutant emissions. Most default area source parameters in URBEMIS 2007 were used for the analysis of area emissions except for those parameters associated with fireplaces. For this analysis it was assumed that all residential units would have natural gas fireplaces.

Future retail uses are proposed within the Campus Park project located adjacent to the Proposed Project. URBEMIS 2007 assumes that retail uses located within one half mile of the Proposed Project would reduce trips by two percent. Buses would also serve the project area, further reducing vehicle trips. These measures were taken into account for calculating operational emissions.

Several project design considerations would reduce operational emissions and were taken into account for calculating operational emissions. To promote walking, bicycle riding, or horseback riding as alternative forms of transportation to motorized vehicles, the following features shall be incorporated into the project design:

- Complete sidewalk coverage in the Proposed Project area
- Street trees to provide shade throughout the Proposed Project area
- Internal trail system with connections to a regional system
- Bike routes with paved shoulders to most major destinations
- Mixed residential uses and routes that are visually interesting
- Pedestrian and bicyclist safety through lighting, signalization and signage, bike lanes (as appropriate), and crosswalks

A summary of the area source and operation emissions emitted to the SDAB for the Proposed Project is shown in Table 7. The URBEMIS 2007 output files are contained in Attachment 1.

TABLE 7
PROJECT (YEAR 2025) AVERAGE DAILY EMISSIONS TO THE SAN DIEGO AIR BASIN (POUNDS/DAY)

Season	Pollutant	Area Source Emission	Operational (Vehicle) Emission	Total Emission	SDAPCD Guidelines of Significance[2]
Summer	ROG	54	36	**90**	75
	NOx	16	31	47	250
	CO	30	365	395	550
	SOx[1]	0	1	1	250
	PM_{10}	0	143	**143**	100
	$PM_{2.5}$	0	28	28	55
Winter	ROG	51	33	**84**	75
	NOx	22	46	68	250
	CO	11	361	383	550
	SOx[1]	0	1	1	250
	PM_{10}	0	143	**143**	100
	$PM_{2.5}$	0	28	28	55

[1]Emissions calculated by URBEMIS 2007 are for SO_2.
[2]Thresholds for ROG and $PM_{2.5}$ were obtained from the SCAQMD.

As seen in Table 7, the Proposed Project's generated emissions are projected to exceed the adopted guidelines of significance for ROG and PM_{10} during the summer and winter months.

Despite the design considerations discussed above, vehicle and area source emissions will continue to violate air quality standards. These emissions are significant.

6.2.2 Localized Carbon Monoxide Impacts

Small-scale, localized concentrations of CO above the state and national standards have the potential to occur near stagnation points of heavily traveled intersections. Localized, high concentrations of CO are referred to as "CO hot spots." CO hot spots can occur when projects contribute traffic to area intersections. However, CO hot spots almost exclusively occur near intersections with LOS E or worse in combination with relatively high traffic volumes on all roadways. The basin is in attainment of both the federal and state CO standards, and background CO concentrations are well below federal and state limits. For buildout conditions (Year 2030 plus project), no intersections are anticipated to operate at substandard conditions (LOS Engineering, Inc. 2009). For near-term conditions, several intersections are projected to operate at LOS E and F (LOS Engineering, Inc. 2009). A CO hot spot analysis was performed using CALINE (California Department of Transportation [Caltrans] 1989) and emission rates calculated by EMFAC (State of California 2002).

For near-term conditions, a micro-scale CO hot spot analysis was performed at four key intersections within the Proposed Project area in order to assess potential exposure of sensitive receptors to CO concentrations above the state and national standards. The CO hot spot model, prepared in accordance with the Transportation Project-Level Carbon Monoxide Protocol (Caltrans Protocol) established by Caltrans (Garza et al. 1997), was used to conduct the CO hot spot analysis for the following four intersections: SR-76 at the I-15 northbound and southbound ramps, SR-76 at Horse Ranch Creek Road, and Old Highway 395 at Pala Mesa Drive. These intersections were chosen because they will operate at LOS F and they will experience some of the highest traffic volumes of the intersections and roadway segments examined in the traffic report (LOS Engineering, Inc. 2009). All other intersections in the vicinity of the Proposed Project are projected to operate at LOS D or better or have lower traffic volumes and delay times than the analyzed intersections. Therefore, CO concentrations at other intersections would be less than concentrations at these analyzed intersections. The procedure followed is detailed in Appendix B of the Caltrans Protocol. Traffic volumes, intersection and roadway configurations, and speeds were provided by the Traffic Impact Study (TIS) prepared for the Proposed Project (LOS Engineering, Inc. 2009). Concentrations were calculated for 20 receptors for each intersection. The basic configuration of the intersections and the receptor locations for a typical intersection are illustrated in Figure 4.

Following the established policy described in the Caltrans Protocol, a receptor distance of three meters was used. The three-meter distance provides worst-case CO concentration estimates. The highest one-hour and eight-hour measured non-wildfire affected concentrations were 6.3 ppm (occurring on January 14, 2004) and 3.61 ppm (occurring on December 11, 2004 and December 25, 2006), respectively. The worst case background concentrations typically occur in the winter. With the development of cleaner technologies, background CO concentrations are expected to fall over time. This maximum one-hour winter CO concentration was used in the CO hot spot analysis as the worst-case background CO concentration. The eight-hour CO concentrations were calculated from the one-hour CO concentrations using a persistence factor of 0.7 as recommended in the EPA's guidance document Guideline for Modeling Carbon Monoxide from Roadway Intersections (EPA 1992). Table 8 presents estimates of worst-case CO concentrations at the intersections. CALINE output files are included as Attachment 3.

Table 8 shows that estimates of one-hour CO concentrations at the intersections range from 6.5 to 7.2 ppm and the eight-hour CO concentrations range from 4.6 to 5.0 ppm. These one-hour CO concentrations are below the 20 ppm state standard and the 35 ppm national standard, and these eight-hour CO concentrations are below the state's 9 ppm standard. Therefore, as a result of the Proposed Project, no direct significant localized CO impacts are anticipated at the intersections in the Proposed Project vicinity.

TABLE 8
TRAFFIC RELATED CO CONCENTRATIONS
(ppm)*

Receiver	SR-76 at I-15 Southbound Ramp		SR-76 at I-15 Northbound Ramp		SR-76 at Pankey Road		Old Highway 395 at Pala Mesa Drive	
	1-Hour Concentration	8-Hour Concentration	1-Hour Concentration	8-Hour Concentration	1-Hour Concentration	8-Hour Concentration	1-Hour Concentration	8-Hour Concentration
1	7.0	4.9	7.2	5.0	7.0	4.9	6.5	4.6
2	7.2	5.0	7.1	5.0	7.1	5.0	6.5	4.6
3	7.1	5.0	7.1	5.0	7.1	5.0	6.5	4.6
4	7.1	5.0	7.2	5.0	7.1	5.0	6.6	4.6
5	7.1	5.0	7.2	5.0	7.1	5.0	6.5	4.6
6	7.2	5.0	7.2	5.0	7.1	5.0	6.5	4.6
7	7.1	5.0	7.2	5.0	7.1	5.0	6.5	4.6
8	7.1	5.0	7.2	5.0	7.1	5.0	6.5	4.6
9	7.1	5.0	7.2	5.0	7.2	5.0	6.5	4.6
10	7.1	5.0	7.1	5.0	7.1	5.0	6.5	4.6
11	7.1	5.0	7.1	5.0	7.1	5.0	6.5	4.6
12	7.1	5.0	7.0	4.9	7.1	5.0	6.5	4.6
13	6.6	4.6	6.6	4.6	6.7	4.7	6.6	4.6
14	6.7	4.7	6.6	4.6	6.7	4.7	6.7	4.7
15	6.8	4.8	6.7	4.7	6.8	4.8	6.6	4.6
16	6.7	4.7	6.7	4.7	6.8	4.8	6.6	4.6
17	6.7	4.7	6.7	4.7	6.8	4.8	6.6	4.6
18	6.8	4.8	6.6	4.6	6.8	4.8	6.6	4.6
19	6.7	4.7	6.9	4.8	6.8	4.8	6.7	4.7
20	6.7	4.7	6.9	4.8	6.7	4.7	6.7	4.7

*Assumes 6.30 ppm background hourly concentrations.

6.2.3 Toxic Air Emissions and Odors

The health effects of exposure to diesel particulate matter generated by traffic on roadways has been raised as a potential concern. In April 2005, the California Air Resources Board (CARB) published the Air Quality and Land Use Handbook: A Community Health Perspective. The handbook makes recommendations directed at protecting sensitive land uses while balancing a myriad of other land use issues (e.g. housing, transportation needs, economics). It notes that the handbook is not regulatory or binding on local agencies and recognizes that application takes a qualitative approach. As reflected in the CARB handbook, there is currently no adopted standard for the significance of health effects from mobile sources. Therefore, the CARB has provided guidelines for the siting of land uses near heavily traveled roadways. Of pertinence to this study, the CARB guidelines indicate that siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day should be avoided when possible.

The nearest heavily traveled roadways to the Project Site are I-15 and SR-76. The TIS prepared for the Proposed Project indicates that year 2030 traffic volumes for I-15 and SR-76 in the Proposed Project vicinity are projected to be 251,000 ADT and 32,000 ADT, respectively (LOS Engineering 2009). Future traffic on SR-76 adjacent to the Proposed Project, which is currently characterized by a rural environment, is less than the 50,000 ADT guideline cited above for a rural roadway. I-15 is more than 1,500 feet from the nearest proposed development. Consequently, the Proposed Project lies well outside of the land use avoidance guidelines established by the CARB, thus impacts related to toxic air emissions would be less than significant.

Further, the CARB has worked on developing strategies and regulations aimed at reducing the risk from diesel particulate matter. The overall strategy for achieving these reductions is found in the “Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles” (State of California 2005b). A stated goal of the plan is to reduce the cancer risk statewide arising from exposure to diesel particulate matter 75 percent by 2010 and 85 percent by 2020. A number of programs and strategies to reduce diesel particulate matter that have been or are in the process of being developed include the Diesel Risk Reduction Program, which aims to reduce diesel particulate emissions over the next five to 15 years through improved automobile design and alternative fuel efficiency (State of California 2005b).

Air quality impacts would be significant if the Proposed Project generates objectionable odors or place sensitive receptors next to existing objectionable odors, which will affect a considerable number of persons or the public.

The proposed wastewater treatment plant is located adjacent to proposed residences. Odor control would be provided to reduce any potential impacts to the surrounding areas. The preliminary treatment building, equalization basins, and solids dewatering

facilities are common places where odors can be generated. These structures would be enclosed and the air would be conveyed to either wet scrubbers or activated carbon odor control units. Odor control units would be designed to treat odorous air from within treatment structures as not to emit matter causing unpleasant odors which are perceptible by the average person at or beyond the lot line of the treatment plant, per Section 6300 of the County of San Diego Zoning Ordinance. Since the treatment plant would be located within relative proximity to residential areas, odor treatment units would provide a dilution ratio of one volume of odorous air to eight volumes of clean air. The treatment structures for which odor control would be provided are the inlet pump station, preliminary treatment building, equalization basin, and solids handling building. Objectionable levels of odors are not expected within the other treatment structures. Wastewater treatment processes such as aeration and disinfection basins that are not enclosed within buildings would be covered even though the generation of odors from these processes is not expected.

In addition to the residential, educational, and open space uses, the Proposed Project also proposes to retain 49.3 acres of existing agricultural land. The SDAPCD rule 51 "nuisance law" that prohibits objectionable odors does not apply to agricultural uses. The Proposed Project is not anticipated to generate objectionable odors; therefore, impacts are less than significant.

7.0 Conclusions and Recommendations

7.1 Construction-Related Mitigation and Project Design Considerations

This analysis assumes that standard dust and emission control during grading operations would be implemented to reduce potential nuisance impacts and to ensure compliance with SDAPCD rules and regulations. Standard construction measures were considered to be a part of the project design considerations and are discussed in Section 6.1 Construction Related Air Quality Effects.

During the architectural coatings phase of construction of the Proposed Project, should the coatings used not meet low VOC content, impacts would be significant. To reduce impacts from construction and to meet the projected emissions shown in Table 6, the following mitigation is required:

> Residential interior coatings shall have a content less than or equal to 50 grams per liter, residential exterior coatings shall have a content less than

> or equal to 100 grams per liter, and non-residential exterior and interior coatings shall have a content less than or equal to 250 grams per liter.

Incorporation of this mitigation will ensure **construction emissions would be less than significant**.

As discussed above, should the construction fleet not meet T-BACT standards, health risks associated with construction-related activities would be significant. The following mitigation measure is required to reduce impacts:

> To ensure the use of T-BACT and mitigate for impacts, the Proposed Project will be required to have 10 percent of the construction fleet use any combination of diesel catalytic converters, diesel oxidation catalysts, diesel particulate filters and/or CARB certified Tier I, II, or III equipment.

Incorporation of this mitigation measure will ensure that direct and cumulative **construction impacts are less than significant**.

7.2 Operation-Related Project Design Considerations

As discussed above, emissions of ROG and PM_{10} are projected to exceed the applicable guidelines during operation of the Proposed Project. This is due to vehicle miles traveled in association with the Proposed Project. The calculation of operational emissions included the following project design considerations:

To promote walking, bicycle riding, or horseback riding as alternative forms of transportation to motorized vehicles, the following features shall be provided in the project design in order to meet the emission levels in Table 7:

- Complete sidewalk coverage in the project area
- Street trees to provide shade throughout the project area
- Internal trail system with connections to a regional system
- Bike routes with paved shoulders to most major destinations
- Mixed residential uses and routes that are visually interesting
- Pedestrian and bicyclist safety through lighting, signalization and signage, bike lanes (as appropriate), and crosswalks

In addition to these measures, future retail uses are proposed within the Campus Park project and future bus service would reduce vehicle trips.

The on-site WWTP is not expected to be a source of pollutant emissions; the WWTP is expected to be run on electricity with diesel generators standing by only in the case of emergency.

As shown in Table 7, emissions of ROG, CO, and PM_{10} would remain greater than the applicable thresholds despite incorporation of project design measures. Traffic-related impacts remain significant and unmitigable.

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