APPENDIX B

Air Quality Technical Report

City of Escondido

Air Quality Technical Report
General Plan Update
Case No.: PHG 09-0010

December 8, 2011

Prepared for:

City of Escondido
Community Development Department
City Hall, First Floor
201 North Broadway
Escondido, California 92025

Prepared by:

3570 Carmel Mountain Road, Suite 300
San Diego, California 92130

CONTENTS

TABLES

FIGURE

1.0 Introduction

This report analyzes potential air quality impacts associated with implementation of the proposed City of Escondido General Plan Update, implementation of an update to the existing City of Escondido Downtown Specific Plan (Downtown Specific Plan Update) and creation and implementation of an Escondido Climate Action Plan (E-CAP). Collectively, these three plans are referred to as the proposed project. The project is located within the City of Escondido (City) and areas of the unincorporated San Diego County within the General Plan Update boundary. The analysis includes an evaluation of existing conditions in the General Plan area, an assessment of potential impacts associated with plan implementation, and the inclusion of measures to mitigate identified impacts.

2.0 Project Description

The General Plan is a statement of long-range public policy to guide the use of private and public lands within the City of Escondido, the City's Sphere of Influence (SOI) and some areas adjacent to the City's SOI. The Downtown Specific Plan provides a comprehensive plan for land use, development regulations, development incentives, design guidelines and other related actions aimed at implementing the strategic goals for the downtown area as set forth in the General Plan goals and policies. The E-CAP establishes goals and policies to reduce greenhouse gas (GHG) emissions by incorporating environmental responsibility into the City's daily management of residential, commercial and industrial growth, education, energy and water use, air quality, transportation, waste reduction, economic development, and open space and natural habitats. These project components are described in greater detail below.

General Plan Update

The General Plan Update includes modified boundaries that eliminate approximately 1,000 acres outside of the City boundaries from the adopted General Plan boundaries, an updated vision for the City, updated and refined quality of life standards, revisions to the existing General Plan elements, and creation of new General Plan elements, including a Growth Management Element. Implementation of the General Plan Update will not only result in land use ordinances that direct development, but will also set forth policies to manage growth and coordinate programs that complement each other rather than compete with each other. The General Plan Update is both general and comprehensive in that it provides broad guidelines for development in the City while addressing a wide range of issues that will affect the City's desirability as a place to live and work. The project area for the General Plan Update is illustrated in Figure 1 and referred to as the Study Area and Proposed Land Uses.

The term buildout refers to the maximum number of potential residential units and maximum amount of commercial, industrial and non-residential square footage allowable under implementation of the General Plan Update. The horizon year for the General Plan Update is 2035, by which time a large portion, but not all, of the planned development under the Plan will have occurred. Full buildout of the General Plan Update would not occur until all development allowed under the Plan is achieved, the exact timing of which is unknown. The 2035 planning horizon is considered to be a reasonable development scenario for the General Plan Update and buildout to this level has been estimated for all the study areas in the General Plan Update. The 2035 planning horizon estimates are used as the basis for the analysis of impacts in this report. Table 1, General Plan Update Buildout Conditions, identifies the 2035 planning horizon scenarios for the General Plan Update boundary, including implementation of the Downtown Specific Plan and E-CAP. This table identifies the residential and non-residential 2035 planning horizon

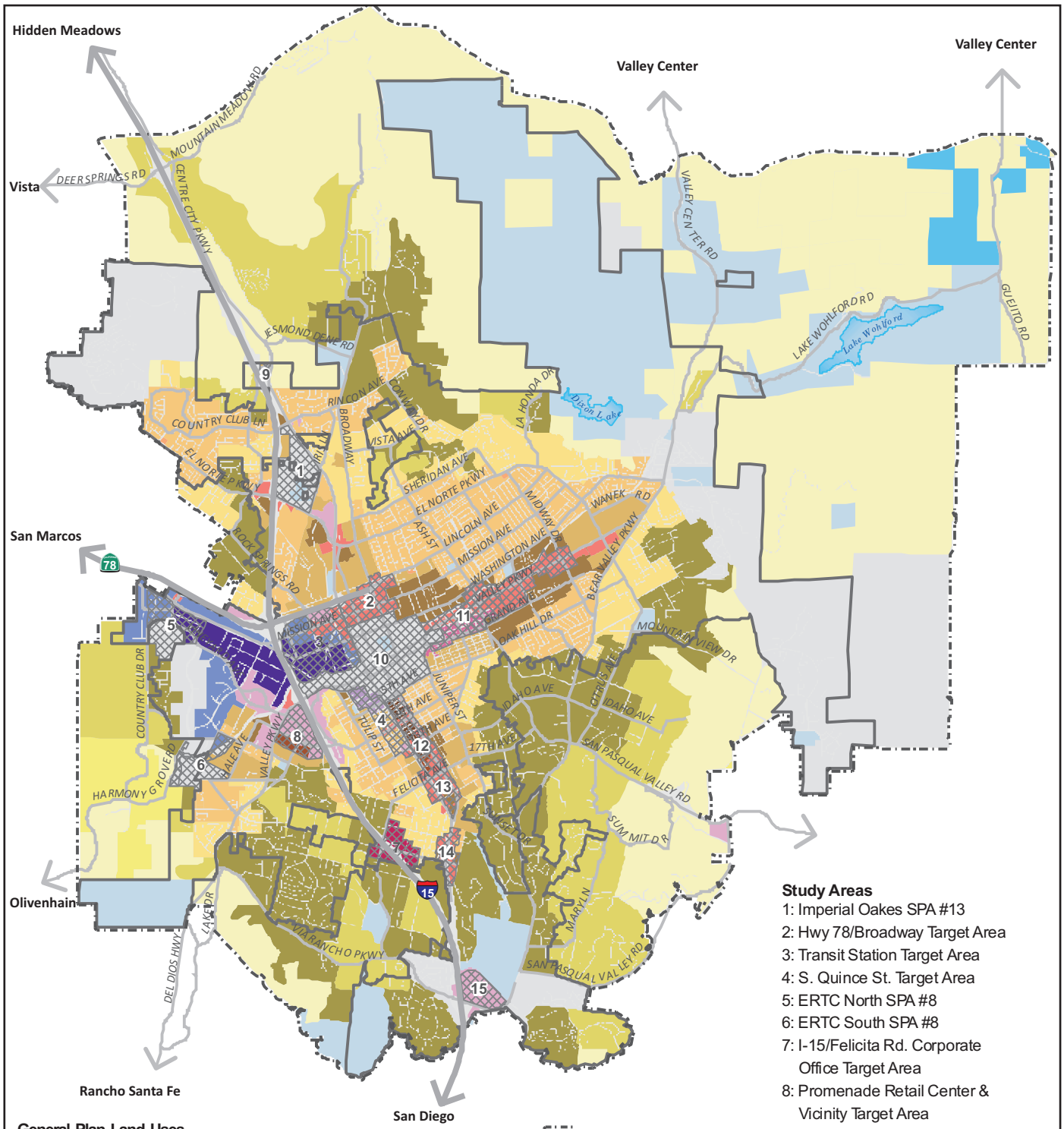
conditions under implementation of the proposed General Plan Update by study area, total City, and SOI. The 2035 planning horizon conditions for the General Plan Update boundary would consist of a total of 39,825 single family residential units, 24,883 multi-family residential units, 18,036,000 square feet (sf) of commercial/retail uses, 9,628,000 sf of office uses, and 15,467,000 sf of industrial/other uses. Within the General Plan Update boundary, the General Plan Update identifies 15 study areas, which are areas proposed for land use changes as compared to the existing General Plan. These areas are shown in Figure 1.

Downtown Specific Plan Update

As part of the proposed project, the City's Downtown Specific Plan is being updated. The Downtown Specific Plan Area (SPA) encompasses approximately 460 acres extending from Interstate 15 (I-15) and West Valley Parkway to the existing Palomar Hospital, between Washington and Fifth Avenues. The Downtown Specific Plan is a document that provides a comprehensive plan for land use, development regulations, development incentives, design guidelines and other related actions aimed at implementing the strategic goals for downtown Escondido as set forth in the General Plan Update goals and policies. In general, the Downtown Specific Plan update would add acreage to the previous SPA boundary, and expand the existing buildout of the SPA by adding up to an additional 1,350 - 3,275 dwelling units for a new maximum of up to 5,275 dwelling units. The Downtown SPA has been prepared in conjunction with the General Plan Update and the growth projections for the Downtown SPA are included in the growth projections for the General Plan Update. Therefore, references to air quality impacts related to growth under the General Plan Update include the growth accommodated by the Downtown SPA.

Escondido Climate Action Plan

The E-CAP is an implementation tool of the proposed General Plan Update that would be used to guide development in the City by focusing on attaining the various goals and policies of the General Plan Update as well as the GHG reduction goals outlined in the E-CAP. The E-CAP develops a baseline community-wide GHG emissions inventory, a methodology for tracking and reporting GHG emissions in the future, and recommendations for GHG reduction strategies as a foundation for these efforts. The purposes of the E-CAP are to: 1) Create a GHG baseline from which to benchmark GHG reductions; 2) Provide a plan that is consistent with and complementary to the GHG emissions reduction efforts being conducted by the state consistent with the requirements of AB 32; 3) Guide the development, enhancement, and implementation of actions that reduce GHG emissions; and 4) Provide a policy document with specific implementation measures meant to be considered as part of the planning process for future development projects. The City would provide all prospective applicants with the Screening Tables for New Development, developed as part of the implementation of the proposed E-CAP, which includes a list of GHG reduction measures that could be incorporated into a proposed project. Provided that the applicant meets the required allocation of GHG reduction measures, the prospective project would be consistent with the E-CAP. Some of the E-CAP measures would also serve to reduce emissions of criteria air pollutants, such as those that reduce vehicular trips. The E-CAP measures that would reduce criteria pollutant emissions generated by the General Plan Update land uses are listed below in Table 2, E-CAP Reduction Measures Summary. The E-CAP was prepared in conjunction with, and is intended to support, the General Plan Update land use designations. It does not propose any additional or different growth. E-CAP measures such as transit oriented development would be implemented as part of future development consistent with the General Plan Update land use plan and goals and policies. Therefore, references to air quality impacts related to growth under the General Plan Update include the potential impacts of the E-CAP.



General Plan Land Uses

Residential
- Rural I: 1du/ 4, 8, 20 acres
- Rural II: 1du/ 2, 4, 20 acres
- Estate I: 1 du/ 1, 2, 4, 20 acres
- Estate II: 1 du/ .5, 1, 20 acres
- Suburban: Up to 3.3 du/acre
- Urban I: Up to 5.5 du/acre
- Urban II: Up to 12 du/acre
- Urban III: Up to 18 du/acre
- Urban IV: Up to 24 du/acre
- Urban V: Up to 45 du/acre

Commercial
- General Commercial
- Neighborhood Commercial
- Office
- Planned Commercial
- Planned Commercial/ Mixed Use

Industrial
- Light Industrial
- General Industrial
- Industrial Office

- General Plan Boundary
- City Limits
- Highway
- Street
- Lakes

Other
- Public Land/Open Space
- Tribal Lands
- Specific Plan Area
- Land Use Study Areas

Study Areas
1: Imperial Oakes SPA #13
2: Hwy 78/Broadway Target Area
3: Transit Station Target Area
4: S. Quince St. Target Area
5: ERTC North SPA #8
6: ERTC South SPA #8
7: I-15/Felicita Rd. Corporate Office Target Area
8: Promenade Retail Center & Vicinity Target Area
9: Nutmeg St
10: Downtown SPA #9
11: E. Valley Pkwy Target Area
12: S. Escondido Blvd/Centre City Pkwy Target Area
13: S. Escondido Blvd/Felicita Rd. Target Area
14: Centre City Pkwy/Brotherton Rd. Target Area
15: Westfield Shoppingtown Target Area

Source: City of Escondido 2011

ATKINS

0 .75 1.5 Miles

N

STUDY AREA AND PROPOSED LAND USES
FIGURE 1

Table 1 General Plan Update Buildout Conditions

Study Area	Existing Conditions	Adopted General Plan Full Buildout	General Plan Update Full Buildout	Buildout by 2035 (Horizon Year)	2035 Growth in New General Plan Above Existing Conditions	General Plan Update Full Buildout Above Adopted General Plan Full Buildout
Single Family Residences (dwelling units)						
Imperial Oakes SPA # 13	64	289	0	0	-64	-289
South Quince Street Target Area	140	150	150	150	10	0
ERTC North SPA #8	39	135	0	0	-39	-135
ERTC South SPA #8	20	200	0	0	-20	-200
1-15/Felicita Road Corporate Office Target Area	19	155	0	0	-19	-155
Nutmeg Street	0	10	0	0	0	-10
Other Study Areas	100	0	0	0	-100	0
Remainder of City (Non-Study Areas)	30,725	35,200	35,200	32,725	2,000	0
Total City	***31,107***	***36,139***	***35,350***	***32,875***	***1,768***	***-789***
Total SOI	***6,450***	***7,800***	***7,800***	***6,950***	***500***	***0***
Total City + SOI	***37,557***	***43,939***	***43,150***	***39,825***	***2,268***	***-789***
Multifamily Residences (dwelling units)						
Transit Station Target Area	160	160	960	800	640	800
South Quince Street Target Area	170	250	250	250	80	0
Nutmeg Street	0	0	50	50	50	50
Downtown SPA	674	2,000	5,275	4,000	3,326	3,275
Other Study Areas	2,988	4,270	7,270	5,298	2,310	3,000
Remainder of City (Non-Study Areas)	12,485	17,327	17,327	13,735	1,250	0
Total City	***16,477***	***24,007***	***31,132***	***24,133***	***7,656***	***7,125***
Total SOI	***0***	***0***	***0***	***0***	***0***	***0***
Total City + SOI	***16,477***	***24,007***	***31,132***	***24,883***	***7,656***	***7,125***
Total Housing Units (dwelling units)						
Imperial Oakes SPA # 13	64	289	0	0	-64	-289
Transit Station Target Area	160	160	960	800	640	800
South Quince Street Target Area	310	400	400	400	90	0
ERTC North SPA #8	39	135	0	0	-39	-135
ERTC South SPA #8	20	200	0	0	-20	-200
1-15/Felicita Road Corporate Office Target Area	19	155	0	0	-19	-155
Nutmeg Street	0	10	50	50	50	40
Downtown SPA	674	2,000	5,275	4,000	3,326	3,275
Other Study Areas	3,088	4,270	7,270	5,298	2,210	3,000
Remainder of City (Non-Study Areas)	43,210	52,527	52,527	46,460	3,250	0
Total City Residential	***47,584***	***60,146***	***66,482***	***57,008***	***9,424***	***6,336***
Total SOI Residential	***6,450***	***7,800***	***7,800***	***6,950***	***500***	***0***
Total Housing Units City + SOI	***54,034***	***67,946***	***74,282***	***63,958***	***9,924***	***6,336***
Commercial/Retail Units (square feet)						
Imperial Oakes SPA # 13	0	0	0	0	0	0
Transit Station Target Area	596,000	625,000	970,000	850,000	254,000	345,000
South Quince Street Target Area	165,000	179,000	538,000	300,000	135,000	359,000
ERTC North SPA #8	82,000	87,000	726,000	87,000	5,000	639,000
ERTC South SPA #8	0	0	0	0	0	0
1-15/Felicita Road Corporate Office Target Area	0	0	437,000	186,000	186,000	437,000
Nutmeg Street	0	0	0	0	0	0
Downtown SPA #9	2,053,000	2,466,000	9,442,000	3,600,000	1,547,000	6,976,000

Table 1 continued

Study Area	Existing Conditions	Adopted General Plan Full Buildout	General Plan Update Full Buildout	Buildout by 2035 (Horizon Year)	2035 Growth in New General Plan Above Existing Conditions	General Plan Update Full Buildout Above Adopted General Plan Full Buildout
Other Study Areas	5,805,000	6,602,000	15,667,000	8,363,000	2,558,000	9,065,000
Remainder of City (Non-Study Areas)	4,300,000	4,778,000	4,778,000	4,500,000	200,000	0
Total City	***13,001,000***	***14,737,000***	***32,558,000***	***17,886,000***	***4,885,000***	***17,821,000***
Total SOI	***0***	***300,000***	***300,000***	***150,000***	***150,000***	***0***
Total City + SOI	***13,001,000***	***15,037,000***	***32,858,000***	***18,036,000***	***5,035,000***	***17,821,000***
Office (square feet)						
Imperial Oakes SPA # 13	15,000	30,000	4,592,000	2,100,000	2,085,000	4,562,000
Transit Station Target Area	149,000	156,000	728,000	550,000	401,000	572,000
South Quince Street Target Area	18,000	20,000	60,000	60,000	42,000	40,000
ERTC North SPA #8	660,000	694,000	5,805,000	1,200,000	540,000	5,111,000
ERTC South SPA #8	4,000	4,000	156,000	78,000	74,000	152,000
1-15/Felicita Road Corporate Office Target Area	150,000	154,000	2,477,000	950,000	800,000	2,323,000
Nutmeg Street	0	0	0	30,000	30,000	0
Downtown SPA #9	969,000	1,025,000	3,921,000	1,250,000	281,000	2,896,000
Other Study Areas	1,430,000	1,716,000	5,552,000	2,664,000	1,234,000	3,836,000
Remainder of City (Non-Study Areas)	696,000	773,000	773,000	746,000	50,000	0
Total City	***4,091,000***	***4,572,000***	***24,064,000***	***9,628,000***	***5,537,000***	***19,492,000***
Total SOI	***0***	***0***	***0***	***0***	***0***	***0***
Total City + SOI	***4,091,000***	***4,572,000***	***24,064,000***	***9,628,000***	***5,537,000***	***19,492,000***
Industrial/Other (square feet)						
Imperial Oakes SPA # 13	60,000	120,000	1,148,000	550,000	490,000	1,028,000
Transit Station Target Area	2,234,000	2,346,000	3,638,000	2,800,000	566,000	1,292,000
South Quince Street Target Area	357,000	388,000	1,167,000	500,000	143,000	779,000
ERTC North SPA #8	82,000	87,000	726,000	87,000	5,000	639,000
ERTC South SPA #8	36,000	36,000	1,400,000	700,000	664,000	1,364,000
1-15/Felicita Road Corporate Office Target Area	129,000	129,000	129,000	129,000	129,000	0
Downtown SPA #9	31,000	50,000	203,000	91,000	60,000	153,000
Remainder of City (Non-Study Areas)	9,460,000	11,771,000	11,771,000	10,610,000	1,150,000	0
Total City	***12,389,000***	***14,927,000***	***20,182,000***	***15,467,000***	***3,078,000***	***5,255,000***
Total SOI	***0***	***0***	***0***	***0***	***0***	***0***
Total City + SOI	***12,389,000***	***14,927,000***	***20,182,000***	***15,467,000***	***3,078,000***	***5,255,000***
Nonresidential Summary						
Imperial Oakes SPA # 13	75,000	150,000	5,740,000	2,650,000	2,575,000	5,590,000
Transit Station Target Area	2,979,000	3,127,000	5,336,000	4,200,000	1,221,000	2,209,000
South Quince Street Target Area	540,000	587,000	1,765,000	860,000	320,000	1,178,000
ERTC North SPA #8	824,000	868,000	7,257,000	1,374,000	550,000	6,389,000
ERTC South SPA #8	40,000	40,000	1,556,000	778,000	738,000	1,516,000
1-15/Felicita Road Corporate Office Target Area	279,000	283,000	3,043,000	1,265,000	986,000	2,760,000
Nutmeg Street	0	0	0	30,000	30,000	0
Downtown SPA #9	3,053,000	3,541,000	13,566,000	4,941,000	1,888,000	10,025,000
Other Study Areas	7,235,000	8,318,000	21,219,000	11,027,000	3,792,000	12,901,000
Remainder of City (Non-Study Areas)	14,456,000	17,322,000	17,322,000	15,856,000	1,400,000	0
Total City Nonresidential	***29,481,000***	***34,236,000***	***76,804,000***	***42,981,000***	***13,500,000***	***42,568,000***
Total SOI Non-Residential	***0***	***300,000***	***300,000***	***150,000***	***150,000***	***0***
Total City + SOI Non-residential Total	***29,481,000***	***34,536,000***	***77,104,000***	***43,131,000***	***13,650,000***	***42,568,000***

Note: SPA = Specific Planning Area, ERTC = Escondido Research and Technology Center
Source: City of Escondido 2011

Table 2 E-CAP Reduction Measures Summary

E-CAP Reduction Topic	General Plan Element	General Plan Policies	E-CAP Reduction Measures	Reduction Measure Summary
Energy				
Energy Efficiency	Community Health & Services	2.26, 5.10	R2-E1: New Residential Energy Efficiency Requirements R2-E2: New Commercial Energy Efficiency Requirements R2-E5: Existing Residential Energy Retrofits R2-E6: Existing Commercial Energy Retrofits	R2-E1 and R2-E2: The Screening Tables for New Development contain many measures that go beyond the requirements of Title 24 and can be included in a new projects including, but not limited to energy efficient appliances, solar water heaters, and skylights.
	Land Use/ Community Form	1.8		
	Mobility	14.6-14.8, 14.10		R2-E5 and R2-E6: The City of Escondido will coordinate with local agencies such as the California Center for Sustainable Energy, San Diego Gas & Electric, and the San Diego Association of Governments (SANDAG) in order to educate homeowners and business owners about rebates and incentive programs available for energy upgrades and renewable energy installations.
	Resource Conservation	6.3		
Transportation				
Improved Pedestrian and Bicycle Access	Community Health & Services	1.11, 2.5-2.7, 2.11, 3.5, 5.4	R2-T2: Bicycle Master Plan	Implementation of an updated bicycle master plan for the city will ensure safe, adequate bike routes and encourage the replacement of vehicle trips with bicycle trips. This reduces the overall vehicle miles traveled (VMT) for the City thereby reducing emissions from transportation.
	Land Use/ Community Form	1.4, 1.9, 3.4, 4.3, 7.1, 7.4, 9.3		
	Mobility	1.1, 2.1, 2.4, 3.1-3.12, 4.1-4.8, 14.2		
	Resource Conservation	2.2-2.4, 6.2		
Improved Transit Access	Community Health & Services	3.5, 5.4, 1.9	R2-T3: Transit Improvements	The City of Escondido will continue to coordinate with the North County Transit District and SANDAG in order to provide timely and cost effective transit services. In particular, the City will work to expand the commuter rail system to desirable destinations and provide adequate facilities and connections to pedestrian and bicycle systems. For new projects, the City will include an option in the Screening Tables for New Development for a project to earn points for incorporating transit-supporting facilities into the project design.
	Land Use/ Community Form	1.4, 1.5, 3.4, 7.3, 7.4		
	Mobility	1.1, 2.1, 2.2, 2.4, 2.8, 5.1-5.10, 6.1-6.3		

Table 2 continued

E-CAP Reduction Topic	General Plan Element	General Plan Policies	E-CAP Reduction Measures	Reduction Measure Summary
Smart Growth	Community Health & Services	2.11	R2-T1: Land Use Based Trips and VMT Reduction Policies	By changing the focus of land use from automobile centered transportation, a reduction in vehicle miles traveled will occur. Escondido has incorporated many policies into the City's General Plan update that promote smart growth, complete streets, mixed use projects, and transit oriented development. These policies will help to promote walking and bicycling and reduce overall VMT.
	Land Use/ Community Form	1.1, 1.4, 1.5, 1.8, 1.9, 3.4, 3.9, 4.6, 7.2-7.4		
	Mobility	1.1, 2.3, 2.8, 14.2		
	Resource Conservation	6.2		
Other Transportation Reductions	Mobility	7.9, 8.2	R2-T4: Transportation Demand Management	Transportation Demand Management (TDM) programs work to reduce automobile travel by encouraging ride-sharing, carpooling, and alternative modes of transportation. The City of Escondido will implement this strategy by including a TDM strategy in the Screening Table for New Development; new businesses can earn points by offering programs, facilities and incentives to their employees that would promote carpooling, transit use, and use of other alternative modes.
	Resource Conservation	6.3, 6.5-6.10		
Area Source				
Area Source	Resource Conservation	2.9	R2-A1: Electric Landscaping Equipment	This measure reduces emissions by substituting electric landscaping equipment for the traditional gas-powered equipment. In the Screening Tables for new development, projects will be able to earn points for including accessible outdoor outlets in the project design.
Construction				
Construction	Resource Conservation	6.3, 6.8	R2-C1: Construction Emissions Reductions	This measure reduces emissions by limiting diesel engine idling, substituting electric or natural gas-powered equipment for gas or diesel-powered equipment, installing emissions reduction technology, and or encouraging the use of carpools or transit for the construction crew. In the Screening Tables for new development, projects will be able to earn points for implementing these measures.

3.0 Environmental Setting

Air pollution is a general term used to describe undesirable amounts of particulate or gaseous matter in the atmosphere. Air pollution can be natural or human-made. It occurs naturally during volcanic eruptions, forest fires, and dust storms and has been an occasional problem for humans over time. However, during the past 100 years, air pollution created by humans has become a persistent public health problem.

3.1 Climate and Meteorology

Regional climate and local meteorological conditions influence ambient air quality. The City of Escondido and surrounding area is located in the San Diego Air Basin (SDAB). The climate of the SDAB is dominated by a semi-permanent high pressure cell located over the Pacific Ocean. This cell influences the direction of prevailing winds (westerly to northwesterly) and maintains clear skies for much of the year. In Escondido, the normal daily maximum temperature is 87 degrees Fahrenheit (°F) in July, and the normal daily minimum temperature is 39° F in December, according to the Western Regional Climate Center (WRCC 2010). The normal precipitation in Escondido is about 16 inches annually, occurring primarily from November through March.

The high pressure cell also creates two types of temperature inversions that may act to degrade local air quality. Subsidence inversions occur during the warmer months as descending air associated with the Pacific high pressure cell comes into contact with cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. The other type of inversion, a radiation inversion, develops on winter nights when air near the ground cools through radiation and the air aloft remain warm. The shallow inversion layer formed between these two air masses can also trap pollutants.

In addition, ambient air quality in the SDAB is affected by air quality in the South Coast Air Basin (the metropolitan areas of Los Angeles, Orange, San Bernardino, and Riverside Counties). Air pollutants, specifically the components of smog, discussed below in Section 3.3, Air Pollutants, are transported to San Diego during relatively mild Santa Ana weather conditions. Winds blowing toward the southwest transport the polluted air from the South Coast Air Basin over the ocean. The sea breeze brings it onshore into San Diego County. During strong Santa Ana conditions, pollutants are pushed far out to sea and do not affect the SDAB. When the transported smog is at ground level, the highest ozone concentrations are measured at coastal and near-coastal monitoring sites. However, when the blown-in smog cloud is elevated, coastal sites may be passed over, and the transported ozone is measured further inland such as in the City (SDAPC 2011). Although this phenomenon may complicate regional air quality planning for the SDAPCD, it does not influence the findings of this technical report. Smog from other air basins is not distinguished from locally generated smog at the ambient air quality monitoring stations; therefore, it has been accounted for in the discussion of ambient air quality below in Section 5.0, Existing Air Quality.

3.2 Measuring Air Quality

Air quality at a given location can be described by units of concentration that are generally expressed in parts per million (ppm) or micrograms per cubic meter (µg/m3). The significance of a pollutant concentration is typically determined by comparing the concentration to ambient air quality standards

(AAQS), described below in Section 4.0, Regulatory Framework. The standards represent the allowable atmospheric concentrations at which the public health and welfare are protected, and include a reasonable margin of safety to protect the more sensitive receptors in the population. Sensitive receptors include day care centers, schools, retirement homes, hospitals, medical patients in residential homes, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality.

3.3 Air Pollutants

Historically, air quality laws and regulations have divided air pollutants into two broad categories: "criteria air pollutants" and "toxic air contaminants" (TACs). Criteria air pollutants are a group of common air pollutants regulated by the federal and state governments by means of ambient standards based on criteria regarding health and/or environmental effects of pollution (County of San Diego 2007). TACs (air toxics or toxic air pollutants) are often referred to as "non-criteria" air pollutants because AAQS have not been established for them. Under certain conditions, TACs may cause adverse health effects, including cancer and/or acute and chronic noncancerous effects.

Criteria Pollutants

The criteria air pollutants pertinent to the project analysis in this report are carbon monoxide, nitrogen oxides, ozone, particulate matter, and sulfur dioxide. The following describes the health effects for each criteria air pollutant based on information published by the EPA (2011) and CARB (2010).

Carbon monoxide (CO) is a colorless, odorless, poisonous gas, produced by incomplete burning of carbon-based fuels, including gasoline, oil, and wood. Carbon monoxide is also produced from incomplete combustion of many natural and synthetic products. For instance, cigarette smoke contains carbon monoxide. When carbon monoxide gets into the body, it combines with chemicals in the blood and prevents the blood from providing oxygen to cells, tissues, and organs. Because the body requires oxygen for energy, high-level exposures to carbon monoxide can cause serious health effects.

Nitrogen oxide (NO_x) is a general term pertaining to compounds, including nitric oxide, nitrogen dioxide, and other oxides of nitrogen. NO_x are produced from burning fuels, including gasoline, diesel, and coal. NO_x react with volatile organic compounds (VOCs) to form smog. NO_x are also major components of acid rain.

Ozone is a corrosive gas composed of three oxygen atoms linked together. Ozone exists in two layers of the atmosphere. It occurs naturally in the stratosphere (upper atmosphere) where it absorbs and provides a protective shield against the sun's damaging ultraviolet radiation. Ozone also exists in the troposphere (lower atmosphere), and even near ground level, where it can cause health effects in humans including respiratory and eye irritation and decreases in lung function and capacity. Ozone is not emitted directly in the air, but at ground level is formed by chemical reactions of "precursor" pollutants – NO_x and VOCs – in the presence of sunlight. Ozone levels are higher during the spring and summer months.

Particulate matter (PM) includes dust, soot, and other tiny bits of solid materials that are released into and move around in the air. Particulates are produced by many sources, including burning of diesel fuels by trucks and buses, incineration of garbage, mixing and application of fertilizers and pesticides, road

construction, industrial processes such as steel making, mining operations, agricultural burning (field and slash burning), and operation of fireplaces and woodstoves. Particulate pollution can cause eye, nose, and throat irritation and other health problems. Particulate matter is measured in microns, which are one millionth of a meter in length (or one-thousandth of a millimeter). PM_{10} is small (respirable) particulate matter measuring 10 microns in diameter, while $PM_{2.5}$ is fine particulate matter no more than 2.5 microns in diameter.

Sulfur dioxide (SO_2) is a pungent, colorless gas formed primarily by the combustion of sulfur-containing fossil fuels, especially coal and oil. Some industrial processes, such as production of paper and smelting of metals, produce sulfur dioxide. Sulfur dioxide emissions have not been a problem in the SDAB because of the low sulfur fuels used in the region (SDAPCD 2007).

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are a category of air pollutants that have been shown to have an impact on human health but are not classified as criteria pollutants. Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including construction activities; area sources such as architectural coatings for maintenance purposes; fuel combustion emissions from landscape maintenance equipment; energy use from space and water heating; stationary sources such as diesel emergency generators and laboratories; and mobile sources. Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) non-carcinogenic, and long-term (chronic) non-carcinogenic.

Odors

The major elements involved in odor emissions are deductibility, recognition, intensity, character, and hedonic tone. Deductibility is the lowest concentration of an odor that will elicit a sensory response; at this concentration, there is an awareness of the presence of an added substance, but not necessarily an odor sensation. Recognition, however, is the minimum concentration that is recognized as having a characteristic odor quality by a segment of the population. Intensity refers to the perceived strength of the odor sensation, and character is how the substance smells (e.g., fishy, rancid, hay, sewer, turpentine, ammonia, etc.). Hedonic tone is a judgment of the relative pleasantness or unpleasantness of the odor, and is influenced by factors such as subjective experience and frequency of occurrence. The apparent presence of an odor in ambient air depends on the properties of the substance emitted, its concentration in emissions, and dilution of emissions between the emissions point and the receptor (person).

Certain amounts of odor emissions are generated from on-going construction activities in Escondido and the surrounding area, including unburned hydrocarbons in tailpipe exhaust emissions from construction vehicles and equipment and road improvements requiring the use of asphalt. The CARB's Air Quality and Land Use Handbook also includes a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. One wastewater treatment plant operates in the City, the Hale Avenue Resources Recovery Facility, located at 1521 South Hale Avenue. No landfills, recycling facilities, or petroleum refineries are located in the City of Escondido, but a solid waste transfer facility is located at 1044 West Washington Avenue. Livestock operations are located within the General Plan Update boundary in the agricultural areas, including the Watson Farms Llama Ranch located at 1984 Greenview Road and several chicken farms. Agricultural land uses in the planning

area are generally located outside the City's urban core, on the outskirts and outside of the City limits. These land uses are existing potential sources of nuisance odors.

4.0 Regulatory Framework

4.1 Federal

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the EPA to establish National Ambient Air Quality Standards (NAAQS) with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that carbon dioxide is an air pollutant covered by the CAA; however, no NAAQS have been established for carbon dioxide. Current NAAQS are listed below in Table 3, State and National Ambient Air Quality Standards.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The EPA has classified air basins (or portions thereof) as being in "attainment," "nonattainment," or "unclassified" for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 4, San Diego Air Basin Attainment Status, below lists the federal attainment status of the SDAB for the criteria pollutants. The EPA classifies the SDAB as being in attainment for carbon monoxide, NO_2, lead, $PM_{2.5}$ and SO_2, and unclassifiable for PM_{10} with respect to federal air quality standards. The SDAB is in non-attainment for the state and federal ozone standards and the state PM_{10} and $PM_{2.5}$ standards.

National Emissions Standards for Hazardous Air Pollutants Program

Under federal law, 188 substances are listed as Hazardous Air Pollutants (HAPs). Major sources of specific HAPs are subject to the requirements of the National Emissions Standards for Hazardous Air Pollutants (NESHAPS) program. The EPA is establishing regulatory schemes for specific source categories, and requires implementation of Maximum Achievable Control Technologies (MACTs) for major sources of HAPs in each source category. State law has established the framework for California's toxic air contaminant identification and control program, which is generally more stringent than the federal program, and is aimed at HAPs that are a problem in California. The state has formally identified more than 200 substances as TACs, and is adopting appropriate control measures for each. Once adopted at the state level, each district will be required to adopt a measure that is equally or more stringent.

Table 3 State and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]	Federal Standards [2]	
		Concentration[3]	Primary [3, 4]	Secondary [3, 5]
Ozone (O_3)	1-hour	0.09 ppm (180 µg/m^3)	--	Same as Primary Standards
	8-hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	
Respirable Particulate Matter (PM_{10})	24-hour	50 µg/m^3	150 µg/m^3	Same as Primary Standards
	Annual Arithmetic Mean	20 µg/m	--	
Fine Particulate Matter ($PM_{2.5}$)	24-hour	No Separate State Standard	35 µg/m	Same as Primary Standards
	Annual Arithmetic Mean	12 µg/m	15 µg/m	
Carbon Monoxide (CO)	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	53 ppb (100 µg/m^3)[6]	Same as Primary Standard
	1-hour	0.18 ppm (470 mg/m^3)	100 ppb (188 µg/m^3)[6]	None
Sulfur Dioxide (SO_2)	24-hour	0.04 ppm (105 µg/m^3)	--	--
	3-hour	--	--	0.5 ppm (1300 µg/m^3)[7]
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)[7]	--
Lead[8]	30-Day Average	1.5 µg/m^3	--	--
	Calendar Quarter	--	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-Month Average[9]	--	0.15 µg/m^3	
Visibility Reducing Particles	8-hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more due to particles.	No Federal Standards	
Sulfates	24-hour	25 µg/m^3	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	No Federal Standards	
Vinyl Chloride[8]	24-hour	0.01 ppm (26 µg/m^3)	No Federal Standards	

[1] California standards for ozone, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride standards are not to be equaled or exceeded.

[2] National standards, other than 1-hour ozone, 8-hour ozone, 24-hour PM_{10}, 24-hour $PM_{2.5}$, and those based on annual averages, are not to be exceeded more than once a year. The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the annual fourth-highest daily maximum 8-hour concentrations is below 0.08 ppm. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile 24-hour concentrations is below 150 µg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of the 98th percentile 24-hour concentrations is below 65 µg/m^3.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parenthesis are based on a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar). All measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

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

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

[6] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the EPA standards are in units of parts per billion (ppb). California standards are in units of ppm. To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively

[7] On June 2, 2010, the EPA established a new 1-hour SO2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new FRM have adequately permeated state monitoring networks. The EPA also revoked both the existing 24-hour SO2 standard of 0.14 ppm and the annual primary SO2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO2 standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA. Note that the new standard is in units of parts per billion (ppb). California standards are in units of ppm. To directly compare the new primary national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[8] The CARB had identified lead and vinyl chloride as TACs 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.

Source: CARB 2010

Table 4 San Diego Air Basin Attainment Status

Pollutant	Averaging Time	California Standards	Federal Standards
Ozone	1-hour	**Nonattainment**	No Federal Standard
	8-hour		**Nonattainment**
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	**Nonattainment**	No Federal Standard
	24-hour		Unclassified[(1)]
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	**Nonattainment**	Attainment
	24-hour	No State Standard	Attainment
Carbon Monoxide (CO)	1-hour	Attainment	Attainment
	8-hour	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	No State Standard	Attainment
	1-hour	Attainment	No Federal Standard
Lead	Calendar Quarter	No State Standard	Attainment
	30-Day Average	Attainment	No Federal Standard
	Rolling 3-Month Average	No State Standard	Attainment
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	No State Standard	Attainment
	24-hour	Attainment	Attainment
	1-hour	Attainment	No Federal Standard
Sulfates	24-hour	Attainment	No Federal Standard
Hydrogen Sulfide	1-hour	Unclassified	No Federal Standard
Visibility Reducing Particulates	8-hour (10:00 a.m. to 6:00 p.m., PST)	Unclassified	No Federal Standard

(1) Unclassified; indicates data are not sufficient for determining attainment or nonattainment.
Source: EPA 2011, CARB 2009

4.2 State

California Clean Air Act

The California Clean Air Act (CCAA) allows states to adopt AAQS and other regulations provided that they are at least as stringent as federal standards. The CARB, a part of the California EPA (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the California AAQS (CAAQS). The CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

In addition to standards set for the six criteria pollutants, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles (see Table 3, State and National Ambient Air Quality Standards, above). These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Further, in addition to primary and secondary AAQS, the

state has established a set of episode criteria for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. Table 4, San Diego Air Basin Attainment Status, above lists the state attainment status of the SDAB for the criteria pollutants.

California State Implementation Plan

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The EPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA. The most recent version of the SIP for San Diego County is the Eight-Hour Ozone Attainment Plan, adopted in May 2007, which provides plans for attaining and maintaining the 8-hour NAAQS for ozone. This plan accommodates emissions from all sources, including natural sources, through implementation of control measures, where feasible, on stationary sources to attain the standards. Mobile sources are regulated by the EPA and the CARB, and the emissions and reduction strategies related to mobile sources are considered in the SIP. The SIP does not address impacts from sources of PM_{10} or $PM_{2.5}$, although it does include control measures (rules) to regulate stationary source emissions of those pollutants. Additionally, the 2004 Revisions to the California SIP for carbon monoxide were adopted on July 22, 2004. The original SIP for carbon monoxide was adopted in 1996. The SIP for carbon monoxide demonstrates how the SDAB would continue to maintain compliance with federal carbon monoxide standards.

New Source Review

Federal and state law requires that air districts in non-attainment areas conduct a New Source Review (NSR) prior to permitting “major” sources, or modifying existing “major” sources. The purpose of NSR is to allow continued industrial growth in non-attainment areas and, at the same time, ensure that new and modified sources do not aggravate existing air quality problems and/or negate emissions reductions from other sources. In the SDAB, the SIP requires non-major sources to undergo NSR. Under NSR, all existing and new stationary sources of emissions are required to conduct a best available control technology (BACT) analysis to evaluate the feasibility of implementing emission control devices. In some instances, new sources have to offset their own emission increases using Emission Reduction Credits (ERCs). In general, technological feasibility, economic, environmental, and energy issues must be taken into account when determining the applicable appropriate control technology.

California Air Toxics “Hot Spots” Information and Assessment Act (AB 2588)

The California Air Toxics “Hot Spots” Information and Assessment Act (AB 2588) is a state-wide program enacted in 1987. The California Air Toxics “Hot Spots” Information and Assessment Act (AB 2588) requires facilities that exceed recommended Office of Environmental Health Hazard Assessment (OEHHA) levels to reduce risks to acceptable levels. AB 2588 requires hundreds of facilities in San Diego County to quantify

the emissions of TACs, and in some cases conduct a HRA, and notify the public, while developing risk reduction strategies.

Typically, land development projects generate diesel emissions from construction vehicles during the construction phase, as well as some diesel emissions from small trucks during the operational phase. Diesel exhaust is mainly composed of particulate matter and gases, which contain potential cancer-causing substances. Emissions from diesel engines currently include over 40 substances that are listed by EPA as HAPs and by the CARB as TACs. On August 27, 1998, the CARB identified particulate matter in diesel exhaust as a TAC, based on data linking diesel particulate emissions to increased risks of lung cancer and respiratory disease.

In September 2000, CARB adopted a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan is to reduce diesel particulate matter (DPM) emissions and the associated health risk by 75 percent in 2010 and by 85 percent by 2020. As part of this plan, CARB identified Airborne Toxic Control Measures (ATCM) for mobile and stationary emissions sources. Each ATCM is codified in the California Code of Regulations, including the ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling, which puts limits on idling time for large diesel engines (13 CCR Chapter 10 Section 2485).

Senate Bill 1889, Accidental Release Prevention Law/California Accidental Release Prevention Program

Senate Bill (SB) 1889 required California to implement a new federally-mandated program governing the accidental airborne release of chemicals promulgated under Section 112 of the Clean Air Act. Effective January 1, 1997, the California Accidental Release Prevention Law (CalARP) replaced the previous California Risk Management and Prevention Program and incorporated the mandatory federal requirements. CalARP addresses facilities that contain specified hazardous materials, known as regulated substances, that if involved in an accidental release, could result in adverse offsite consequences. CalARP defines regulated substances as chemicals that pose a threat to public health and safety or the environment because they are highly toxic, flammable, or explosive.

4.3 Regional/Local

San Diego County Regional Air Quality Strategy

The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations for San Diego County. The SDAPCD regulates most air pollutant sources, except for motor vehicles, marine vessels, aircraft, and agricultural equipment, which are regulated by the CARB or the EPA. State and local government projects, as well as projects proposed by the private sector, are subject to SDAPCD requirements if the sources are regulated by the SDAPCD. Additionally, the SDAPCD, along with the CARB, maintains and operates ambient air quality monitoring stations at numerous locations throughout San Diego County, including one in Escondido. These stations are used to measure and monitor criteria and toxic air pollutant levels in the ambient air.

The SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the AAQS in the SDAB. The San Diego County Regional Air Quality Strategy (RAQS) was initially adopted in 1991, and is updated on a triennial

basis. The RAQS was updated in 1995, 1998, 2001, 2004, and most recently in April 2009. The RAQS outlines the SDAPCD's plans and control measures designed to attain the state air quality standards for ozone. The SDAPCD has also developed the SDAB's input to the SIP, which is required under the Federal CAA for pollutants that are designated as being in non-attainment of NAAQS for the basin.

The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth, to project future emissions and then establish the strategies necessary for the reduction of emissions through regulatory controls. The RAQS and SIP utilized the 2030 Regional Transportation Plan (RTP) prepared by SANDAG to project future growth in the SDAB. As such, projects that propose development that is consistent with the growth anticipated by the RTP would be consistent with the RAQS. In the event that a project would propose development which is less intensive than anticipated within the RAQS, the project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated in the growth projections, the project could be in conflict with the RAQS and SIP, and could have a potentially significant impact on air quality.

The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The SIP also includes rules and regulations that have been adopted by the SDAPCD to control emissions from stationary sources. These SIP-approved rules may be used as a guideline to determine whether a project's emissions would have the potential to conflict with the SIP and thereby hinder attainment of the NAAQS for ozone.

Measures to Reduce Particulate Matter in San Diego County

In December 2005 the SDAPCD adopted the Measures to Reduce Particulate Matter in San Diego County. This document identifies fugitive dust as the major source of directly emitted particulate matter in the County, with mobile sources and residential wood combustion as minor contributors. Data on $PM_{2.5}$ source apportionment indicates that the main contributors to $PM_{2.5}$ in the County are combustion organic carbon, and ammonium sulfate and ammonium nitrate from combustion sources. The main contributors to PM_{10} include resuspended soil and road dust from unpaved and paved roads, construction and demolition sites, and mineral extraction and processing. Based on the report's evaluation of control measures recommended by the CARB to reduce particulate matter emissions, the SDAPCD adopted Rule 55, the Fugitive Dust Rule, in June 2009. The SDAPCD requires that construction activities implement the measures listed in Rule 55 to minimize fugitive dust emissions. Rule 55 requires the following:

1) No person shall engage in construction or demolition activity in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60 minute period; and

2) Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall be minimized by the use of any of the equally effective track-out/carry-out and erosion control measures listed in Rule 55 that apply to the project or operation. These measures include: track-out grates or gravel beds at each egress point; wheel-washing at each egress during muddy conditions; soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; watering for dust control; and using secured tarps or cargo covering, watering, or treating of transported material for outbound transport trucks. Erosion control measures must be

removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations.

Other SDAPCD Rules and Regulations

As discussed above is the discussion of the RAQS, state law provides that local air districts such as the SDAPCD have primary responsibility for controlling emissions from non-mobile (stationary) sources. The stationary source control measures identified in the RAQS and SIP have been developed by the SDAPCD into regulations through a formal rulemaking process. Rules are developed to set limits on the amount of emissions from various types of sources and/or by requiring specific emissions control technologies (ECTs). Following rule adoption, a permit system is used to impose controls on new and modified stationary sources and to ensure compliance with regulations by prescribing specific operating conditions or equipment on a source.

SDAPCD Regulation XIV (Title V Operating Permits) contains the requirements for implementing the Title V permit program. The Title V Operating Permit Program requires all major sources of criteria air contaminants, all major sources of hazardous air pollutants, all sources that emit more than 100 tons per year of any regulated air contaminant and certain other specified sources to obtain Title V permits. Permits are issued pursuant to Regulation XIV and incorporate state and local District requirements that are contained in existing SDAPCD permits for these sources. Examples of operations that require permits are surface coating operations, adhesive materials application, automotive refinishing operations, dry cleaning operations, fiberglass or plastic product manufacturing, and gas stations (SDAPCD 2011).

The SDAPCD also implements NSR in the SDAB. Prior to the installation of new, modified, relocated, or replacement equipment which results in an increase of air pollution emissions, the SDAPCD requires that the equipment must obtain Authority to Construct and be evaluated in accordance with applicable NSR rules. A Permit to Operate from SDAPCD would be required to authorize operation or use of the equipment. If such equipment would exceed air pollutant thresholds, it must use the BACT to reduce emissions. BACT definitions and requirements are outlined in SDAPCD Rule 20.1, NSR – General Provisions (SDAPCD 2011).

It is difficult to ensure that new or modified sources do not interfere with attainment or maintenance of the established air quality standards for ozone. Since ozone is a secondary pollutant (i.e., ozone is not directly emitted, but results from complex chemical reactions in the atmosphere from precursor pollutants), control of the precursors is required. Therefore, control of emissions of VOCs and NO_X, the ozone precursors, is essential. The SDAPCD adopted Rule 67, Architectural Coatings, in December 2001, which establishes VOC content limits for architectural coatings.

Additionally, SDAPCD Rule 1210, Toxic Air Contaminant Public Health Risks – Public Notification and Risk Reduction, implements the public notification and risk reduction requirements of the state Air Toxics “Hot Spots” Act, and requires facilities to reduce risks to acceptable levels within five years. Rule 1200, Toxic Air Contaminants – New Source Review, establishes acceptable risk levels, and emission control requirements for new and modified facilities that may emit additional TACs. Rule 51, Nuisance, also prohibits nuisances, including objectionable odors.

City of Escondido Environmental Quality Regulations

The Environmental Quality Regulations (EQRs), as established in the City's Municipal Code Chapter 33 Article 47, implement CEQA and CEQA guidelines by applying the provisions and procedures contained in CEQA to development projects proposed within the City of Escondido. The EQRs establish screening thresholds to determine if additional analysis is required to determine whether a project would result in significant impacts. Section 33-924(G) pertains to air quality impacts. A project would require a technical study if it would exceed the thresholds identified below in Table 5, City of Escondido Daily Emission Screening Level Criteria. However, a project that exceeds these criteria does not necessarily have a significant impact on the environment. The EQRs for air quality only determine whether further analysis would be required to determine the potential significant impacts of the project. It was reasonably assumed that the proposed project would exceed the screening level criteria identified in the EQRs; therefore, this technical study has been prepared for the proposed project.

Table 5 City of Escondido Daily Emission Screening Level Criteria

Pollutant	Environmental Quality Ordinance Criteria (pounds/day)
Carbon monoxide	550
Volatile organic compounds	55
Oxides of nitrogen	55
Fine particulate matter	150
SOx	250
Lead	3.2

Source: Article 47 of the City of Escondido Municipal Code

5.0 Existing Air Quality

5.1 Air Quality Monitoring Data

The SDAPCD operates a network of ambient air monitoring stations throughout San Diego County. The purpose of the monitoring stations is to measure ambient concentrations of air pollutants and determine whether the ambient air quality meets the NAAQS and the CAAQS. The City of Escondido contains an ambient air quality monitoring station on East Valley Parkway, which measures all air pollutants except sulfur dioxide. The San Diego (Beardsley Street) station is the closest station to the project area that measures sulfur dioxide. Table 6, Air Quality Monitoring Data, below presents a summary of the ambient pollutant concentrations monitored at the Escondido and San Diego stations during the last three years (2008 through 2010). The corresponding NAAQS and CAAQS are presented above in Table 3, State and National Ambient Air Quality Standards. The SDAB is currently designated as a state standard nonattainment area for PM_{10}, $PM_{2.5}$, 1-hour and 8-hour ozone, and the Federal 8-hour standard for ozone.

As shown below in Table 6, Air Quality Monitoring Data, the 1-hour ozone concentration exceeded the state standard nine times during 2008 and two times in 2010. The 8-hour ozone concentration exceeded both the state and federal standard in 2008, 2009, and 2010. The daily PM_{10} concentration exceeded the state standard in 2008 and 2009, but not in 2010. The federal standard was not exceeded during this

period. The federal 24-hour $PM_{2.5}$ standard was violated three times in 2008 and two times in 2009 and 2010.

Neither the state nor federal standards for CO, NO_2, or SO_2 were exceeded at any time during years 2008 through 2010. The federal annual average NO_2 standard has not been exceeded since 1978 and the state 1-hour standard has not been exceeded since 1988 (SDAPCD 2007). With one exception during October 2003, the SDAB has not violated the state or federal standards for CO since 1990 (SDAPCD 2007).

Table 6 Air Quality Monitoring Data

Pollutant	Monitoring Station	2008	2009	2010
Ozone				
Maximum 1-hour concentration (ppm)	Escondido-East Valley Parkway	0.116	0.093	0.105
Days above 1-hour state standard (>0.09 ppm)		9	0	2
Maximum 8-hour concentration (ppm)		0.098	0.080	0.084
Days above 8-hour state standard (>0.07 ppm)		23	9	5
Days above 8-hour federal standard (>0.075 ppm)		13	1	3
Carbon Monoxide				
Maximum 8-hour concentration (ppm)	Escondido-East Valley Parkway	2.81	3.24	2.46
Days above state or federal standard (>9.0 ppm)		0	0	0
Respirable Particulate Matter (PM_{10})				
Peak 24-hour concentration ($\mu g/m^3$)	Escondido – East Valley Parkway	84.0	74.0	43.0
Days above state standard (>50 $\mu g/m^3$)		1	1	0
Days above federal standard (>150 $\mu g/m^3$)		0	0	0
Fine Particulate Matter ($PM_{2.5}$)				
Peak 24-hour concentration ($\mu g/m^3$)	Escondido – East Valley Parkway	44.0	78.4	52.2
Days above federal standard (>35 $\mu g/m^3$)		3	2	2
Nitrogen Dioxide				
Peak 1-hour concentration (ppm)	Escondido – East Valley Parkway	0.081	0.073	0.64
Days above state 1-hour standard (0.18 ppm)		0	0	0
Sulfur Dioxide				
Maximum 24-hour concentration (ppm)	San Diego Beardsley Street	0.007	0.006	0.02
Days above 24-hour state standard (>0.04 ppm)		0	0	0
Days above 24-hour federal standard (>0.14 ppm)		0	0	0

PPM = parts per million, $\mu g/m^3$ = micrograms per cubic meter
Source: CARB 2011

5.2 Toxic Air Contaminants in the San Diego Air Basin

As described above in Section 3.3, Air Pollutants, TACs can have serious adverse health effects and are controlled under a different regulatory process than criteria pollutants. Of particular concern are cancer-causing pollutants. Because no safe level of emissions can be established for TACs regionwide, the regulation of TACs is based on the levels of cancer risk and other health risks posed to persons who may be exposed.

Based on 2010 estimates from the SDAPCD, inventoried stationary sources of TACs in the region emit more than 1.9 million pounds of TACs annually (SDAPCD 2011). These sources include industrial, commercial, and governmental facilities. Although TAC emissions from stationary sources in San Diego County, including Escondido, have been reduced by approximately 83 percent since 1989, large amounts of toxic compounds are still emitted into the air from a wide variety of sources including motor vehicles, industrial facilities, household products, area sources, and natural processes. Motor vehicles and natural sources emit more than 31 million pounds per year (SDAPCD 2009). Prioritizing and reducing these emissions further will require a continued, cooperative effort by the public, industry, environmental groups, CARB, and SDAPCD.

Two facilities in Escondido were required to prepare Health Risk Assessments to submit to the SDAPCD due to their potential to emit TACs: 1) the Palomar Medical Center, and 2) Goal Line Operations, which is an electronic power supply company. The HRAs for these facilities, both prepared in 2003, determined that neither facility would exceed the standards for cancer or non-cancer risk (SDAPCD 2009).

DPM is also emitted from mobile sources such as traffic and temporary construction equipment. DPM contributes significantly to ambient cancer risk levels. Based on CARB estimates, DPM emissions could add an additional 157 in one million to the ambient health risk levels in San Diego County, down from 545 in one million in 1989 (SDAPCD 2011).

6.0 Impacts and Mitigation

6.1 Air Quality Plans

Standards of Significance

Based on Appendix G of the CEQA Guidelines and existing City policies and regulations, the proposed project would result in a significant impact if it would conflict with or obstruct implementation of the RAQS and applicable portions of the SIP.

Impact Analysis

The SDAPCD relies on information from CARB and SANDAG, including projected growth, mobile, area and all other source emissions, in order to predict future emissions and develop appropriate strategies for the reduction of source emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans

developed by the incorporated cities and the County of San Diego. As such, projects that propose development that is consistent with the growth anticipated by SANDAG would be consistent with the RAQS and the SIP.

The basis for these plans is the distribution of population in the region as projected by SANDAG. The RAQS and SIP utilized the 2030 RTP to project future growth in the SDAB. The RTP projected the City of Escondido would be developed with 53,087 dwelling units by the year 2030, or approximately 255 dwelling units per year between 2004 and 2030. Assuming this projected growth rate would continue, the RTP would estimate 54,632 dwelling units for the City by 2035. The General Plan boundary also includes the SOI and a portion of the unincorporated County. As shown above in Table 1, General Plan Update Buildout Conditions, there are 6,450 existing dwelling units in this area, approximately four percent of the 172,443 dwelling units projected in the RTP for the unincorporated County in 2010. It is assumed that the number of homes projected in the RTP for the area within the General Plan Update planning area boundary would continue to represent four percent of total unincorporated housing or 9,434 dwelling units by the year 2030. Based on an assumed growth rate of 150 dwelling units per year, the RTP would project 10,184 dwelling units for the unincorporated areas within the General Plan Update boundary by 2035. Therefore, the RTP projects approximately 62,521 dwelling units for the General Plan Update planning area by 2030, and approximately 64,816 dwelling units in the General Plan Update planning area boundary by 2035. The growth projections are summarized below in Table 7.

Table 7 Growth Projections for the General Plan Update Planning Area

	2030 Regional Transportation Plan		Proposed General Plan Update	
	2030	**2035**	**2030**	**2035**
City of Escondido	53,087	54,632[(1)]	55,134[(2)]	57,008
Unincorporated Area Within General Plan Update Boundary	9,434[(3)]	10,184[(4)]	6,840[(2)]	6,950
Total Housing Units	**62,521**	**64,816**	**61,974[(2)]**	**63,958**

(1) Assumes a growth rate of 255 units per year between 2004 (46,467 units) and 2030 (53,087 units) would continue through 2035.

(2) Assumes the same number of homes would be developed each year between 2010 and 2035. Based on the housing unit projections above in Table 1, General Plan Update Buildout Conditions.

(3) Assumes housing units within the General Plan Update boundary would account for 4% of unincorporated housing in 2030 (235,861 units), because the existing housing units (6,450 units), represent approximately 4% of the 2010 RTP projection for the unincorporated area (160,271 units).

(4) Assumes the same number of homes (150 units) would be developed each year between 2010 and 2030 projections, and that the trend would continue through 2035.

Source: SANDAG 2007

The proposed General Plan Update would accommodate up to 63,958 dwelling units by 2035, the planning horizon year for the proposed project. There are 54,034 dwelling units in the General Plan boundary under existing (2010) conditions. Assuming an equal growth rate each year, the proposed General Plan Update would accommodate approximately 61,974 dwelling units by year 2030. Therefore, although the proposed General Plan Update would accommodate new growth in the planning area, the overall increase in housing units and corresponding population would be consistent with the projections identified for the City in the RTP, which are the SANDAG growth projections utilized for the applicable air quality plans. As such, the proposed General Plan Update would be consistent with the RAQS and SIP. The proposed project's impacts related to conflicts with the RAQS and SIP would be less than significant.

Federal, State, and Local Regulations and Existing Regulatory Processes

Future development occurring under the General Plan Update, including development in the Downtown SPA or that implements E-CAP measures, would be required to be consistent with the emission reduction strategies in the RAQS and SIP in order to comply with SDAPCD rules and regulations and obtain required SDAPCD permits. All future development projects under the General Plan Update would be required to demonstrate consistency with the RAQS and the SIP during the environmental review process and identify mitigation measures for any potentially significant conflicts in order for the project to be approved by the City.

In addition to the RAQS and SIP, development under the General Plan Update would be required to comply with local air quality regulations. Future construction projects would be required to comply with Rule 55, the Fugitive Dust Rule, which mandates control of fugitive dust emissions during construction. Rule 55 prohibits construction or demolition activity that would discharge visible dust emissions into the atmosphere beyond the property line for a period of more than 3 minutes in any 60-minute period. Rule 55 also requires minimization of visible roadway dust as a result of active operations that generate fugitive dust.

Proposed General Plan Update Goals and Policies

Quality of Life Standard #9 in the General Plan Update pertains to Air Quality. The standard states:

"The city shall establish a Climate Action Plan with feasible and appropriate local policies and measures aimed at reducing regional greenhouse gas emissions including, but not limited to, reducing the number of vehicular miles traveled, supporting public transportation, participating in the development of park-and-ride facilities, coordinating land-use approvals, accommodating facilities for alternative fuel vehicles, maintaining and updating the City's traffic signal synchronization plan, promoting local agriculture, increasing landscaping standards, promoting landscaping programs, and encouraging non-polluting alternative energy systems."

This Quality of Life Standard is primarily dependent on the adoption of the proposed E-CAP described below in the discussion of proposed E-CAP policies.

The General Plan Update Resource Conservation Element also includes the following policy related to regional air planning:

- Air Quality and Climate Protection Policy 7.1: Participate in regional planning efforts and coordinate with the SDAPCD and SANDAG in their efforts to reduce air quality impacts and attain state and federal air quality standards.

Proposed Climate Action Plan Reduction Measures

The E-CAP is aimed at reducing regional GHG emissions; however some of the measures included in the E-CAP to reduce GHG emissions would also reduce criteria pollutant emissions, including the following measures: R2-T1: Land Use Based Trips and VMT Reduction Policies; R2-T3: Transit Improvements; R2-T4: Transportation Demand Management; R2-E1: New Residential Energy Efficiency Requirements; R2-E2: New Commercial Energy Efficiency Requirements; R2-E5: Existing Residential Energy Retrofits; R2-E6: Existing Commercial Energy Retrofits; R2-A1: Electric Landscaping Equipment; and R2-C1: Construction Emissions Reductions. These policies are listed above in Table 2, E-CAP Reduction Measures Summary. Reducing vehicle trips would reduce vehicular emissions of criteria air pollutants. Encouraging energy conservation and non-polluting

energy systems would reduce area source criteria pollutant emissions. Minimizing the use of gas or diesel-powered construction equipment, reducing construction worker trips, and encouraging the use of emission control technology would also reduce construction criteria pollutant emissions.

Summary

The proposed General Plan Update includes land use designations that would accommodate new growth in the General Plan Update planning area boundary; however, the growth accommodated by the proposed project is consistent with the SANDAG projections accounted for in the RAQS and SIP. Future development would be required to demonstrate compliance with the strategies and measures adopted as part of the RAQS and SIP during the City's environmental review process, as well as with the requirements of the City and/or SDAPCD to reduce emissions of particulate matter. Therefore, implementation of the proposed project would result in a less than significant impact associated with conflicts to applicable air quality plans.

Mitigation Measures

None required.

6.2 Conformance to Federal and State Ambient Air Quality Standards

Standards of Significance

Based on Appendix G of the CEQA Guidelines, an impact is considered significant if implementation of the proposed project would violate any air quality standard or contribute substantially to an existing or projected air quality violation including pollutant emissions for which the region is in federal or state nonattainment.

As discussed under Regulatory Framework, the City has adopted screening level thresholds to determine whether an air quality technical report should be prepared for a project; however, the City has not adopted significance thresholds by which to evaluate the significance of air quality impacts once a report has been deemed necessary. In lieu of any set quantitative air quality significance thresholds, the SDAPCD's Regulation II, Rule 20.2, Table 20-2-1, "Air Quality Impact Analysis (AQIA) Trigger Levels" are used to determine the potential significance of air quality impacts. These AQIA trigger levels generally apply to new or modified stationary sources of air pollutants, which include only one source of air pollutant emissions. For CEQA purposes, the thresholds can be used to demonstrate that a project's total emissions from all sources would not result in a significant impact to air quality (County of San Diego 2007). For $PM_{2.5}$, the EPA "Proposed Rule to Implement the Fine Particle NAAQS" published in 2005, which quantifies significant emissions as 10 tons per year (55 pounds per day), is used as the significance threshold. The thresholds listed below in Table 8, SDAPCD Screening Level Thresholds and City Daily Emission Criteria, are used in this analysis to determine whether the proposed project has the potential to violate an air quality standard or contribute substantially to an existing or projected air quality violation.

Table 8 SDAPCD Screening Level Thresholds and City Daily Emission Criteria (pounds/day)

Pollutant	SDAPCD Threshold[(1)]
Carbon monoxide	550
Volatile organic compounds	75[(1)]
Oxides of nitrogen	250
Fine particular matter	55[(2)]
Respirable Particulate Matter	100
SOx	250

(1) Threshold for VOCs based on the threshold of significance for VOCs from the South Coast Air Quality Management District for the Coachella Valley.
(2) EPA "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards" published September 2005.
Source: County of San Diego 2007

Impact Analysis

Implementation of the proposed project would result in both construction and operational air pollutant emissions. Construction emissions include those associated with the construction of new land uses, demolition of old buildings and structures for redevelopment, and construction of infrastructure improvements to support new land uses. Operational emissions include those associated with traffic generated by new development and operation of land uses, including residential, commercial, office, and industrial development, that would be accommodated by the proposed plan.

Construction Emissions

Construction activities would result in temporary increases in air pollutant emissions. These emissions would be generated in the form of fugitive dust emissions from earth disturbance during site grading and building demolition, and exhaust emissions from operation of heavy equipment and vehicles during construction. Paving activities would emit VOCs during off-gassing.

Daily air pollutant emissions during construction were estimated using the assumed worst-case activity data and the emission factors included in the Urban Emissions (URBEMIS) 2007 model. Table 9, Annual Construction Assumptions for General Plan Update Development, summarizes the 2035 planning horizon assumptions for construction activities associated with the General Plan Update. For the purposes of modeling a worst-case construction scenario, it was assumed that development associated with the General Plan Update would take place over a 25-year period between the 2010 baseline conditions and the 2035 planning horizon, with an equal amount of construction occurring each year. At 2035, a total of 9,924 new residential units and 13,650,000 sf of new non-residential development could be accommodated within the General Plan Update planning area boundary. Additionally, existing land uses would be demolished and redeveloped. To account for construction emissions from redevelopment as well as new development, a citywide average of approximately 15 percent of existing development is assumed to be demolished and reconstructed over the same time period. Some study areas would likely experience higher redevelopment intensity, while other areas outside of the study areas would remain relatively unchanged. Using this approach, it is assumed that 316 single family dwelling units, 405 multi-family units, 279,406 sf of commercial/retail development, 246,026 sf of office development, and 197,454 sf of industrial development would be constructed every year for 25 years between 2010 and 2035. Model defaults were used to estimate emissions associated with construction equipment. Construction

emission estimates include site watering twice per day in compliance with SDAPCD Rule 55, Fugitive Dust Rule, and low VOC architectural coatings in compliance with SDAPCD Rule 67, Architectural Coatings.

Table 9 Annual Construction Assumptions for General Plan Update Development

Category	Assumption
Total New Development	9,924 residential units and 13,650,000 sf non-residential development
Total Redevelopment	8,105 residential units and 4,422,150 sf non-residential development
Phasing	25 years (2010-2035)
Annual New Construction per Phase	397 residential units and 546,000 sf non-residential development
Annual Redevelopment per Phase	324 residential units and 176,886 sf non-residential development
Percent of Existing Development to be Demolished	15%
Assumed Emissions Reduction Measures	SDAPCD Rule 55 (dust-minimizing practices) and Rule 67 (low-VOC coatings)

Source: Atkins 2011

Table 10, Construction Daily Maximum Air Pollutant Emissions, presents a summary of estimated maximum daily air pollutant emissions for each construction phase associated with estimated annual construction under the General Plan Update. It is assumed that each phase of construction would generally occur consecutively, with some overlap between the paving and coating phases.

Table 10 Construction Daily Maximum Air Pollutant Emissions

Construction Phase	Maximum Daily Emissions (pounds/day)					
	CO	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Demolition	38	8	79	0	63	15
Fine Grading[(1)]	81	17	188	0	**416**	93
Trenching	9	2	14	0	1	1
Building	143	9	49	0	3	3
Paving	14	6	24	0	2	2
Architectural Coating[(2)]	7	**608**	0	0	0	0
Significance Threshold	**550**	**75**	**250**	**250**	**100**	**55**
Significant Impact?	No	***Yes***	No	No	***Yes***	No

(1) Includes watering twice daily in compliance with SDPACD Rule 55. Assumes that the entire development acreage would be graded, and approximately 10 percent of the area would be excavated to a depth of 5 feet and exported offsite.

(2) Includes use of low VOC coatings.

Emission quantities are rounded to the nearest whole number. Exact values are provided in the Appendix.

Source: URBEMIS 2007, version 9.2.4. See Appendix for model output.

The estimate of construction emissions indicates that development allowed under the General Plan Update would result in significant emissions of VOCs and PM_{10} during construction. Therefore, a potentially significant impact would occur. However, it is useful to keep in mind that these results reflect the assumption of equal amounts of development occurring each year. Realistically, construction emissions for all pollutants may be greater or lower depending on how development is implemented.

Operational Emissions

Development under the General Plan Update, including development under the Downtown Specific Plan Update or development of facilities that implement E-CAP measures, would result in operational emissions of air pollutants from stationary and vehicular sources, as described below. Impacts associated with implementation of the proposed General Plan Update are based on the net increase in development between existing conditions (2010 baseline) and the 2035 planning horizon of the General Plan Update. Existing development within the General Plan Update boundary consists of 37,557 single family residences, 16,477 multi-family residences, 13,001,000 sf of commercial/retail development, 4,091,000 sf of office development, and 12,389,000 sf of industrial development. Existing operational emissions are shown below in Table 11. The 2035 planning horizon of the General Plan Update would accommodate an additional 2,268 single family residences, 7,656 multi-family residences, 5,035,000 sf of commercial/retail development, 5,537,000 sf of office development, and 3,078,000 sf of industrial development. The CARB's URBEMIS 2007 air quality model was used to estimate operational emissions associated with area and vehicular sources. Vehicular emissions associated with the General Plan Update are based on the Traffic Impact Analysis prepared by the Linscott, Law and Greenspan Engineers (LLG 2011). The net change in emissions was calculated by subtracting the emissions associated with existing development from the total emissions associated with the 2035 planning horizon of the General Plan Update. The estimated emissions for the 2035 planning horizon include implementation of proposed E-CAP measures, including reduced vehicle trips, reduced energy use, and requirements for landscape energy. The net increase in estimated operational air pollutant emissions from the 2035 planning horizon of the General Plan Update is shown below in Table 12.

Area Sources. Area sources of air pollutant emissions associated with the 2035 planning horizon of the General Plan Update include fuel combustion emissions from space and water heating, fuel combustion emissions from landscape maintenance equipment, VOC emissions from periodic repainting of interior and exterior surfaces, and energy usage. It is assumed the architectural coatings such as paint would have a low VOC content, consistent with SDAPCD Rule 67, Architectural Coatings. Additionally, implementation of the following proposed E-CAP measures would reduce area source emissions for the 2035 planning horizon: R2-E1 and E2-2, which would reduce natural gas emissions from new development; R2-E5 and R2-E6, which would reduce natural gas emissions from existing development; and R2-A1, which would reduce electric landscaping equipment emissions. Emissions reductions are based on the emissions reduction calculations in the E-CAP and are provided in the Appendix.

Table 11 Operational Daily Maximum Air Pollutant Emissions – Existing (2010)

	Maximum Daily Emissions (pounds/day)					
Emission Source	**VOC**	**NO_x**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Area Sources						
Natural Gas	57	749	382	0	1	1
Landscape	304	19	1,683	0	4	4
Consumer Products	2,644	--	--	--	--	--
Architectural Coatings[(1)]	736	--	--	--	--	--
Area Source Total	*3,741*	*768*	*2,065*	*0*	*5*	*5*
Vehicular Sources	4,150	4,539	38,226	24	3,652	728
Total Existing	**7,891**	**5,307**	**40,291**	**24**	**3,657**	**733**

(1) Includes the use of low VOC coatings.
Emission quantities are rounded to the nearest whole number. Exact values are provided in the Appendix.
Source: URBEMIS 2007, version 9.2.4.

Table 12 Operational Daily Maximum Air Pollutant Emissions – General Plan Update Planning Horizon (2035)

Emission Source	Maximum Daily Emissions (pounds/day)					
	VOC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Sources						
Natural Gas	70	926	493	0	2	2
Landscape	322	20	1,784	0	5	5
Consumer Products	3,166	--	--	--	--	--
Architectural Coatings(1)	887	--	--	--	--	--
Area Source Total	*4,445*	*946*	*2,227*	*0*	*7*	*7*
Vehicular Sources(2)	3,187	3,153	26,098	37	5,929	1,616
E-CAP Measure Reductions(3)	-347	-597	-2,807	-4	-599	-164
Total General Plan Update 2035 Planning Horizon	**7,285**	**3,502**	**25,518**	**33**	**5,337**	**1,459**
Existing Conditions (2010 baseline)	*7,891*	*5,307*	*40,291*	*24*	*3,657*	*733*
Net Change from Baseline	**-606**	**-1,805**	**-14,773**	**9**	**1,680**	**726**
Significance Threshold	75	250	550	250	100	55
Significant Impact?	*No*	*No*	*No*	*No*	***Yes***	***Yes***

(1) Includes the use of low VOC coatings.

(2) Vehicular emissions would decrease over time due to increasingly stringent emissions requirements. A vehicle model year of 2020 was used for the analysis to average the near-term vehicular emission that would be similar to existing conditions (2010) with the reduced vehicular emissions that would be anticipated in 2035.

(3) Assumes an approximately 10 percent reduction in total vehicular emissions, a 30 percent reduction in net natural gas emissions, a 30 percent reduction in existing natural gas emissions, and a 1 percent reduction in total landscaping emissions. See Appendix for individual measure reductions.

Emission quantities are rounded to the nearest whole number. Exact values are provided in the Appendix.
Source: URBEMIS 2007, version 9.2.4.

Vehicular Sources. Increased volumes of vehicles associated with the operation of the 2035 planning horizon of the General Plan Update would contribute to regional emissions of NO_x, VOC, CO, sulfur oxide (SO_x), $PM_{2.5}$ and PM_{10}. Criteria pollutant emissions were calculated using URBEMIS 2007 model based on the traffic analysis data for the General Plan Update and the VMT assumptions used in the E-CAP attributable to existing conditions and the 2035 planning horizon land uses. The traffic analysis data includes the reduction in vehicle trips attributable to the proposed E-CAP mitigation measure R2-T1. Additionally, implementation of the following proposed E-CAP measures would reduce vehicular source emissions: R2-T2: Bicycle Master Plan, R2-T3: Transit Improvements, and R2-T4: Transportation Demand Management. Emission reductions are based on the emissions reduction calculations in the proposed E-CAP and are provided in the Appendix. As shown above in Table 12, Operational Daily Maximum Air Pollutant Emissions – General Plan Update Planning Horizon (2035), the vehicular sources are the largest source of pollutant emissions.

Total Operational Emissions. As shown above in Table 12,, build-out of the General Plan Update would result in increased SO_x, PM_{10} and $PM_{2.5}$ emissions between 2010 and 2035. Area source emissions of VOCs, NO_X, and CO would also result from build-out of the plan. However, the combination of changes to land use type in conjunction with the E-CAP measures and the anticipated increases in vehicle efficiencies between 2010 and 2035 would result in a reduction in VOC, NO_X, and CO emissions from vehicles

compared to existing conditions even though there is an overall increase in vehicle use and VMT. Land uses are proposed that would reduce vehicle trips and VMT by emphasizing smart growth principles, particularly in the downtown area, along East Valley Parkway, and along South Escondido Boulevard. Smart growth principles include preserving urban centers, ensuring adequate infrastructure, establishing urban growth limits, encouraging mixed use, developing for "human scale," encouraging high density development near transit, and protecting environmental resources. Smart growth seeks to expand transportation options to include walking, biking, and public transit in addition to driving. The Mobility and Infrastructure Element also incorporates goals and policies related to the concept of complete streets. Complete streets include streets equipped with facilities and designs that enable safe access for users (i.e. pedestrians, bicyclists, transit riders, and motorists) of all ages and abilities.

Implementation of the General Plan Update would not result in significant VOC, NO_X, CO, and SO_2 emissions because emissions of VOC, NO_x, and CO would be reduced at the 2035 planning horizon of the plan compared to existing conditions, and emissions of SO_2 would not exceed the significance threshold. However, at the 2035 planning horizon the proposed project would result in an increase in PM_{10} and $PM_{2.5}$ emissions that would exceed the significance thresholds. Currently, no information pertaining to the land use and overall size of individual projects under the General Plan Update is available. As such, individual operational emissions cannot be quantified at the planning level. Projects proposed under the General Plan Update would be required to determine whether an individual project would substantially increase particulate matter emissions to a level that would exceed the significance thresholds as part of the CEQA process. Therefore, impacts related to emissions of PM_{10} and $PM_{2.5}$ during project operation are potentially significant.

Federal, State and Local Regulations and Existing Regulatory Processes

The main contributor to criteria pollutant emissions for the General Plan Update is vehicular emissions. Implementation of programs to reduce emissions from vehicles is the responsibility of the CARB, and the CARB has implemented and continues to implement programs such as increasingly stringent emission standards and smog check programs. The CARB has also implemented programs such as the ATCM that restricts idling for greater than five minutes for heavy-duty vehicles. The SDAPCD has adopted Rule 67, Architectural Coatings, which governs the VOC content of architectural coatings and requires coatings to meet increasingly stringent VOC levels, and Rule 55, Fugitive Dust Rule, which requires dust minimizing measures during project construction. All future development that would use architectural coatings would be required to comply with Rule 67. Future development that involves ground disturbing activities during construction would be required to comply with Rule 55.

Proposed General Plan Update Goals and Policies

The proposed General Plan Update includes goals and policies that would reduce emissions associated with future development. The Resource Conservation Element includes the following goals and policies related to reducing criteria pollutant emissions:

- Air Quality and Climate Protection Goal 7: Improved air quality in the City and the region to maintain the community's health and reduce greenhouse gas emissions that contribute to climate change.
- Air Quality and Climate Protection, Policy 7.1: Participate in regional planning efforts and coordinate with the SDAPCD and SANDAG in their efforts to reduce air quality impacts and attain state and federal air quality standards.

- Air Quality and Climate Protection Policy 7.2: Reduce regional greenhouse gas emissions through the following measures including, but not limited to:
    a) Implementing land use patterns that reduce automobile dependence;
    b) Reducing the number of vehicular miles traveled through implementation of Transportation Demand Management programs, jobs-housing balance, and similar techniques;
    c) Supporting public transportation improvements;
    d) Encouraging the use of alternative modes of transportation by expanding public transit, bicycle, and pedestrian networks and facilities;
    e) Participating in the development of park-and-ride facilities;
    f) Maintaining and updating the City's traffic signal synchronization plan;
    g) Promoting local agriculture;
    h) Promoting the use of drought-tolerant landscaping; and
    i) Encouraging the use of non-polluting alternative energy systems.
- Air Quality and Climate Protection Policy 7.3: Require that new development projects incorporate feasible measures that reduce construction and operational emissions.
- Air Quality and Climate Protection Policy 7.5: Consider the development of park and ride facilities within the city in coordination with Caltrans.
- Air Quality and Climate Protection Policy 7.6: Restrict the number and location of drive-through facilities in the City and require site layouts that reduce the amount of time vehicles wait for service.
- Air Quality and Climate Protection Policy 7.7: Encourage businesses to alter local truck delivery schedules to occur during non-peak hours, when feasible.
- Air Quality and Climate Protection Policy 7.9: Encourage City employees to use public transit, carpool, and use alternate modes of transportation for their home to work commutes.
- Air Quality and Climate Protection Policy 7.8: Purchase low-emission vehicles for the City's fleet and use clean fuel sources for trucks and heavy equipment, when feasible.
- Air Quality and Climate Protection Policy 7.10: Educate the public about air quality, its effect on health, and efforts the public can make to improve air quality and reduce greenhouse gas emissions.

Proposed Climate Action Plan Reduction Measures

Additionally, as discussed above, some of the measures included in the proposed E-CAP to reduce GHG emissions would also reduce criteria pollutant emissions, including the following measures provided above in Table 2: R2-T1: Land Use Based Trips and VMT Reduction Policies; R2-T3: Transit Improvements; R2-T4: Transportation Demand Management; R2-E1: New Residential Energy Efficiency Requirements; R2-E2: New Commercial Energy Efficiency Requirements; R2-E5: Existing Residential Energy Retrofits; R2-E6: Existing Commercial Energy Retrofits; R2-A1: Electric Landscaping Equipment; and R2-C1: Construction Emissions Reductions. Reducing vehicle trips would reduce vehicular emissions of criteria pollutants and encouraging energy conservation and non-polluting energy systems would reduce area source criteria pollutant emissions. Minimizing the use of gas or diesel-powered construction equipment, reducing construction worker trips, and

encouraging the use of emission control technology would reduce construction criteria pollutant emissions. Specifically, measure R2-C1 would reduce the emission of ozone precursors (NO_x and VOCs).

Summary

Estimated annual construction under the General Plan Update would result in significant emissions of VOCs and PM_{10} during construction. This estimate assumes equal amounts of development occurring each year. Realistically, yearly construction emissions for all pollutants may be greater or lower depending on how development is implemented. Based on the conservative planning-level assumptions of this analysis, impacts related to construction emissions would be potentially significant.

Operational emissions of criteria pollutants associated with future development under the General Plan Update would exceed the significance thresholds for PM_{10} and $PM_{2.5}$. Future development under the General Plan Update would be required to comply with CARB motor vehicle standards, SDAPCD regulations from stationary sources and architectural coatings, and the General Plan Update goals and policies. While the proposed General Plan Update goals and policies are intended to reduce impacts associated with air quality violations, these measures cannot guarantee that operational emissions would be reduced to a less than significant level. Therefore, the proposed project would result in a potentially significant impact associated with air quality violations during construction and operation.

Mitigation Measures

Implementation of the following mitigation measures would be required to reduce construction and operational emissions associated with the proposed project. Mitigation measure Air-1 requires implementation of best management practices (BMPs) to reduce construction emissions. Mitigation measure Air-2 requires the preparation of an air quality impact assessment for projects with the potential to generate significant air pollutant emissions during construction or operation. While implementation of these measures would reduce air pollutant emissions, they cannot guarantee that construction or operational emissions would be lessened to below a level of significance. Therefore, even with implementation of mitigation, impacts from operation of the proposed project would remain significant and unavoidable.

Air-1 **Construction Dust Control Measures.** During grading activities for any future development within the General Plan Update planning area boundary, the onsite construction superintendent shall ensure implementation of standard best management practices to reduce the emissions of fugitive dust, including but not limited to the following actions:

i. Water any exposed soil areas a minimum of twice per day, or as allowed under any imposed drought restrictions. On windy days or when fugitive dust can be observed leaving the construction site, additional water will be applied at a frequency to be determined by the onsite construction superintendent.

ii. Temporary hydroseeding with irrigation will be implemented on all graded areas on slopes, and areas of cleared vegetation will be revegetated as soon as possible following grading activities in areas that will remain in a disturbed condition (but will not be subject to further construction activities) for a period greater than three months during the construction phase.

iii. Operate all vehicles on the construction site at speeds less than 15 miles per hour.

iv. Cover all stockpiles that will not be utilized within three days with plastic or equivalent material, to be determined by the onsite construction superintendent, or spray them with a non-toxic chemical stabilizer.

v. If a street sweeper is used to remove any track-out/carry-out, only PM_{10}-efficient street sweepers certified to meet the most current South Coast Air Quality Management District Rule 1186 requirements shall be used. The use of blowers for removal of track-out/carry-out is prohibited under any circumstances.

Air-2 Air Quality Impact Assessment. An Air Quality Impact Assessment (AQIA) shall be prepared for projects within the General Plan Update boundary that exceed one of the air quality study trigger criteria in Table 13, AQIA Trigger Criteria.

Table 13 AQIA Trigger Criteria

Land Use	Project Size that would Trigger an AQIA[3]	Single Family Dwelling Unit Equivalent[4]
Single Family Residential[1]	300 DU	1 DU/1 DU
Apartments: 6-20 DU/acre[1]	370 DU	1 DU/1.23 DU
Apartments: – > 20 DU/acre[1]	420 DU	1 DU/1.4 DU
Condominiums[1]	370 DU	1 DU/1.23 DU
Mobile Home Park[1]	400 DU	1 DU/1.33 DU
Supermarket[2]	25,000 sf	1 DU/83.33 sf
Restaurant, Fast Food w/drive through[2]	6,500 sf	1 DU/21.67 sf
Restaurant, Quality Sit Down[2]	43,000 sf	1 DU/143.33 sf
Neighborhood/County Park (undeveloped)[2]	880 acres	1 DU/2.93 acre
Motel[2]	480 rooms	1 DU/1.6 room
Standard Commercial Office (<100,000 sf per office site)[2]	190,000 sf	1 DU/633.33 sf
Neighborhood shopping center[2]	35,000 sf	1 DU/116.67 sf

(1) Limited by VOC emissions; for these residential units it is assumed that 5 percent of the units have active fireplaces burning 0.25 cord of wood over a period of 82 days and 10 percent of the units have active natural gas fireplaces that are used for 3 hours per day over a period of 90 days (note: hours per day and days per year are the URBEMIS defaults).

(2) Limited by CO emissions

(3) DU = dwelling unit, sf = square feet, DU/acre = dwelling units per acre

(4) Single family units per land use unit of measure

Source: County of San Diego 2007b

Significance After Mitigation

The measures listed above would reduce construction and operational emissions of criteria pollutants; however, it cannot be guaranteed that these measures would reduce impacts to below a level of significance. Therefore, emissions are significant and unavoidable.

6.3 Impacts to Sensitive Receptors

Significance Criteria

Based on Appendix G of the CEQA Guidelines and existing City policies and regulations, the proposed project would result in a significant impact if it would directly impact a sensitive receptor and result in a cancer risk of greater than 1 in one million without implementation of Toxics Best Available Control Technology (T-BACT), 10 in one million with implementation of T-BACT, or a health hazard index of one or more, consistent with the SDAPCD Rule 1210, Toxic Air Contaminant Public Health Risks – Public Notification and Risk Reduction.

Impact Analysis

Sensitive receptors include day care centers, schools, retirement homes, hospitals, and medical patients in residential homes or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. The two primary emissions of concern regarding health effects for land development projects are carbon monoxide and TACs.

Carbon Monoxide Hot Spots

Areas with high vehicle density, such as congested intersections and parking garages, have the potential to create high concentrations of CO, known as CO hot spots. An air quality impact is considered significant if CO emissions create a hot spot where either the California one-hour standard of 20 ppm or the federal and state eight-hour standard of 9.0 ppm is exceeded. This typically occurs at severely congested intersections (level of service [LOS] E or worse).

The Traffic Impact Analysis (LLG 2011) prepared for the proposed project evaluated the intersections in the General Plan Update boundary that would carry the majority of project traffic. These intersections were evaluated under existing conditions and 2035 future conditions. To estimate the most conservative and congested condition for the hot spot analysis, CO concentrations were analyzed at the four intersections that would experience the greatest amount of delay under future conditions. These four intersections are:

- Escondido Boulevard/Felicita Road
- Centre City Parkway/Felicita Road
- I-15 Southbound Ramp/Via Rancho Parkway/Del Lago
- El Norte Parkway/Centre City Parkway

The California Line Source (CALINE 4) model was used to estimate the potential CO impact at the above intersections during the most congested peak hour, as specified by Caltrans CO modeling protocol (Caltrans 1997). Receptor locations were set 30 feet from the roadway centerline at the intersection, although actual receptor locations would generally be at a greater distance. Carbon monoxide emission factors were generated using the EMFAC 2007 model. An ambient CO concentration of 3.24 ppm was used to reflect ambient conditions, based on the data gathered at the Escondido air quality monitoring station. Table 14 displays the estimated CO concentrations at the affected intersections.

Table 14 Estimated Carbon Monoxide Concentrations

Intersection	1-Hour CO Concentration (ppm)	8-Hour CO Concentration (ppm)[1]	Impact?
Escondido Boulevard/Felicita Road	8.14	5.7	No
Centre City Parkway/Felicita Road	8.04	5.6	No
I-15 Southbound Ramp/Via Rancho Parkway/Del Lago	7.84	5.5	No
El Norte Parkway/Centre City Parkway	7.94	5.6	No
Significance Threshold	20.0 (State)/35.0 (Federal)	9.0 (State and Federal)	

[1] The 8-Hour concentration is based on a persistence factor of 0.7 for urban uses (Caltrans 1997).
Source: CALINE 4

The highest estimated 1-hour carbon monoxide concentration is 8.14 ppm at the Escondido Boulevard/Felicita Road intersection. This would not exceed the state 1-hour standard of 20 ppm or the federal 1-hour standard of 35 ppm. Based on an urban persistence factor of 0.7 (for an urban area), the maximum cumulative 8-hour carbon monoxide concentration at this intersection would be 5.7 ppm, which is below the 9 ppm state and federal 8-hour standards. Therefore, potential carbon monoxide impacts would be less than significant.

Toxic Air Contaminants

According to the San Diego County Guidelines for Determining Significance – Air Quality (County of San Diego 2007), for typical land use projects that do not propose stationary sources of emissions regulated by SDAPCD, DPM is the primary TAC of concern. The CARB's Air Quality and Land Use Handbook lists several potential sources of substantial DPM emissions that currently exist or may be developed under the General Plan Update including: 1) freeways or urban roads with 100,000 vehicles per day; 2) commercial facilities that require heavy-truck deliveries or include drive-through facilities; 3) extraction operations or cement manufacturing; 4) power plants; 5) recycling and garbage transfer stations; 6) industrial land uses that require heavy-truck trips; and 7) farming operations. The General Plan Update would also accommodate new sources of other TACs such as industrial land uses, and may accommodate new sensitive receptors in areas with existing sources of TACs. TACs from industrial uses vary between individual operations, but generally include metals, solvents, dioxin, benzene, or formaldehyde. Sources of other TACs currently found in the General Plan boundary or that may be accommodated by the General Plan Update include dry cleaning facilities using perchloroethylene, gas stations, industrial processes, automotive repair shops, waste water treatment plants, medical facilities, medical and other laboratory research and development operations, and agricultural operations.

Three carcinogenic TACs constitute the majority of known health risks from vehicular traffic. These include DPM from trucks, and benzene and 1.3-butadiene from passenger vehicles. According to the traffic volumes provided in the Traffic Impact Analysis (LLG 2011), none of the roadways within the General Plan Update boundary would exceed 100,000 trips per day. However, Interstate (I) 15 traverses the entire plan area from north to south, and State Route (SR) 78 is a major highway through the western portion of the City, from west of I-15 east to North Broadway. According to the Air Quality and Land Use Handbook, sensitive receptors should not be located within 500 feet of a freeway. Areas along I-15 and SR-78 are currently developed with commercial, industrial, and residential land uses, and similar land use designations are proposed in the General Plan Update. Therefore, sensitive receptors may be accommodated in close proximity to a freeway. The Transit Station Target Area is located near the intersection of I-15 and SR-78 and would accommodate a

maximum of 640 new multi-family units by 2035. The Nutmeg Street Study Area is located adjacent to I-15 and would accommodate 50 new multi-family units by 2035. Therefore, implementation of the General Plan Update would have the potential to locate new residences within 500 feet of a freeway, which would result in a potentially significant impact.

The Palomar Energy Center power plant is currently located in the industrialized area of Escondido's Research and Technology Center (ERTC) North SPA. Air pollutants of concern from power plants include benzene, formaldehyde, and particulate matter. Under the General Plan Update, the ERTC North SPA would be developed with new commercial, office, and industrial uses. The General Plan Update proposes to decrease the amount of existing housing in the ERTC study area. Therefore, the General Plan Update does not propose new sensitive land uses in close proximity to the Palomar Energy Center. Additionally, according to SDG&E, the power plant's air permit is very strict and has some of the lowest emission limits in the state and nation (SDG&E 2011).

Recycling and garbage transfer stations are sources of DPM due to the frequency of truck trips to these facilities. Escondido Disposal, Inc. currently operates a transfer station in the City at 1044 West Washington Avenue in an existing industrial area. This area is the Transit Station Target Area under the General Plan Update and is proposed for new mixed use development, including multi-family residences, commercial land use, offices, and industrial land use. Residential uses are proposed to be part of regional commercial attraction and would likely be sited away from industrial uses, including the transfer facility. However, the General Plan Update would accommodate new sensitive receptors in a planning area that contains an existing source of TAC emissions. This impact would be potentially significant.

Dry cleaning facilities, gas stations, and automotive repair facilities are currently located throughout the General Plan Update boundary, and would continue to be accommodated in commercial and retail areas under the General Plan Update. Many dry cleaning facilities use perchloroethylene (Perc), the most common solvent used in the industry. Perc dry cleaners are required to comply with CARB and SDAPCD regulations, but some emissions still occur (CARB 2005). Refueling at gas stations releases benzene, a potent carcinogen, into the air. Automotive repair shops are a source of solvents that are potential TACs. The Air Quality and Land Use Handbook recommends that new sensitive receptors be located more than 300 feet from any dry cleaning operations, and more the 500 feet from operations using more than one machine. The vast majority of dry cleaners in California have only one machine (CARB 2005). Sensitive land uses should not be sited in the same building as a dry cleaning facility. These siting distances apply only to facilities where clothes are cleaned. They do not apply to storefronts or other facilities that serve as pick-up or drop-off locations for offsite cleaning facilities. A 50-foot separation between the nearest sensitive receptor and a gas station is recommended for typical gas dispensing facilities, but a separation of 300 feet is recommended for large gas stations with a throughput of 3.6 million gallons per year or greater. The handbook does not recommend a separation distance for automotive repair facilities. Potential impacts would need to be addressed on a case-by-case basis. The smart growth principles of the General Plan Update emphasize residential land uses in close proximity to neighborhood-serving retail and commercial uses, which could include dry cleaning facilities, gas stations, and automotive repair facilities. Therefore, sensitive receptors would potentially be located in close proximity to dry cleaning facilities, gas stations, and automotive repair facilities and vice versa. A potentially significant impact could occur.

The major medical facility in the General Plan Update boundary is the Palomar Medical Center in the Downtown Specific Plan Area (SPA). Its replacement, Palomar Medical Center West, is currently under construction south of the ERTC North SPA. Medical and laboratory uses can generate TACs. The General Plan Update would accommodate new research and development land uses in the Transit Station Target Area,

South Quince Street Target Area, I-15/Felicita Road Corporate Office Target Area, Imperial Oakes SPA #13, and the ERTC North SPA. The Downtown SPA and Transit Station Target Area would accommodate new multi-family residential development as well as non-residential land uses. The South Quince Street Target Area would accommodate new single family and multi-family development. Residential land uses in these areas may be incompatible with existing and proposed medical, research and development and laboratory uses. The existing and future medical and laboratory land uses would be required to comply with all applicable regulations pertaining to the handling of hazardous materials and may require permitting by the SDAPCD if the facility would be a source of TAC emissions (CARB 2005). However, potential risks to existing sensitive receptors and the siting of future land uses would need to be determined on a case-by-case basis. Impacts related to medical and research and development facilities in residential areas would be potentially significant. The ERTC North SPA, I-15/Felicita Road Corporate Office Target Area, and Imperial Oaks SPA #13 would accommodate new non-residential land uses. These areas are not proposed to accommodate new sensitive receptors and would not result in the exposure of new sensitive receptors to potential TAC emissions from Palomar Medical Center West.

Industrial land uses generate DPM from truck trips for supply delivery and product distribution. Individual industrial and manufacturing processes may involve chemical solvents, machinery, or other sources of TACs. Industrial land uses are currently found throughout the core of the City. New industrial land uses would be accommodated in the Downtown SPA, Transit Station Target Area, South Quince Street Target Area, Imperial Oakes SPA #13, ERTC North SPA, ERTC South SPA, and outside of the study area boundaries. The Downtown SPA, Transit Station Target Area, South Quince Street Target Area, and areas outside of the study areas would accommodate new residential development which may be incompatible with existing and proposed industrial land uses. Industrial and manufacturing land uses that would result in TACs require permitting from the SDAPCD; however, permitting may not eliminate health risks to nearby sensitive receptors. Additionally, permitting would not cover DPM from truck trips. The TACs and number of truck trips would vary between individual industrial developments; therefore, potential risks to existing sensitive land uses and the siting of future sensitive receptors would need to be determined on a case-by-case basis. Impacts related to industrial land uses would be potentially significant.

Current and proposed agricultural zoning allows for agricultural operations along the outskirts of the General Plan Update boundary. Existing agricultural operations are located outside of the City boundary in the unincorporated County or at the edge of the City boundary, generally along SR-78 to the east of the City, along Harmony Grove Road to the west, and along I-15 to the north. Major crop categories for the General Plan Update area include nursery and flower crops, eggs and egg products, citrus, and vegetable crops. Agricultural operations are a potential source of DPM from truck trips and TACs from pesticide use. However, the farms found within the General Plan Update boundary are not large-scale commercial agricultural operations that generate substantial truck traffic or a disproportionate amount of pesticide use. Additionally, the General Plan Update would continue to designate low density rural and estate development in the areas that allow agricultural operations. Low density development would provide space between agricultural uses and the closest receptors so that TACs or particulate matter would settle out and reduce pollutant concentrations at sensitive receptors. Therefore, impacts related to agricultural operations would be less than significant.

The commercial and retail developments proposed within the General Plan Update would not attract a disproportionate amount of diesel trucks that would be considered a source of substantial TAC emissions. Additionally, in 2004, the CARB adopted an ATCM to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to DPM and other TACs and their pollutants. The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate

on highways, regardless of where they are registered. The measure does not allow diesel fueled commercial vehicles to idle for more than five minutes at any given time. Potential localized air toxic impacts from onsite sources of DPM would be minimal since heavy-duty trucks would take multiple routes throughout the City, and the trucks that would frequent the area would not idle for extended periods of time. Therefore, impacts related to commercial and retail land uses would be less than significant.

Transit buses would be used throughout the General Plan Update area, and use of mass transit is encouraged as part of the General Plan's incorporation of smart growth principles. The buses in the General Plan Update planning area are operated by the North County Transit District (NCTD) (the "Breeze" transit line). According to NCTD, more than half of the Breeze bus fleet is fueled with compressed natural gas (CNG), and therefore would not contribute to DPM emissions (NCTD 2009). Similar to trucks delivering to commercial facilities, buses would also be subject to the ATCM and would not idle for extended periods of time. Due to the limited number of diesel-fueled buses and limited idling time, impacts related to buses would be less than significant.

Another source of DPM is construction equipment. Construction would occur temporarily throughout the project planning area as buildout of the General Plan Update and Downtown Specific Plan Update occurs. As shown above in Table 10, Construction Daily Maximum Air Pollutant Emissions, implementation of the proposed project would result in potentially significant PM_{10} emissions during construction. However, DPM are considered to have long-term health effects and construction would be a short-term event. Construction would be spread out throughout the planning area and the same receptors would not be continually exposed to DPM from construction. Therefore, construction emissions would not result in a significant long-term health risk to nearby sensitive receptors.

Federal, State and Local Regulations and Existing Regulatory Processes

The California Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588) requires facilities that exceed recommended OEHHA levels to reduce risks to acceptable levels. In the SDAB, SDAPCD Rule 1210, Toxic Air Contaminant Public Health Risks – Public Notification and Risk Reduction, implements this program. Facilities that have emissions above levels recommended by OEHHA would be required to develop and implement plans to reduce risks below these levels. Additionally, the CARB has implemented an ongoing program to study the potential health effects of diesel particulate matter, to identify sources of DPM, and to develop programs to reduce emissions, such as the ATCM. These programs include development and implementation of control strategies for off-road, on-road, and marine vessel diesel sources. These sources are already regulated by the EPA and operation of diesel engines must comply with these standards. As discussed above under impacts related to TACs, the CARB presents its recommendations for the siting of new sensitive land uses in the Air Quality and Land Use Handbook (CARB 2005). The Handbook makes specific recommendations for a number of source types such as freeways, gas stations, and dry cleaners.

Proposed General Plan Update Goals and Policies

The General Plan Update Resource Conservation Element includes the following policy related to sensitive receptors:

- Air Quality and Climate Protection Policy 7.4: Locate uses and facilities/operations that may produce toxic or hazardous air pollutants an adequate distance from each other and sensitive uses such as housing and schools, consistent with CARB recommendations.

Policy 7.4 would require compliance with the siting recommendations set forth in Table 1-1 of the CARB's Land Use and Air Quality Handbook (CARB 2005). Implementation of these recommendations would ensure that sensitive land uses such as residences, schools, day care centers, playgrounds, and medical facilities are sited appropriately to minimize exposure to emissions of TACs. Specific recommendations include the following:

1. Avoid siting new sensitive land uses within 500 feet of a freeway.
2. Avoid siting new sensitive uses within 300 feet of any dry cleaning operation that uses perchloroethylene. For operations with two or more machines, provide at least 500 feet of separation from sensitive uses. For operations with three or more machines, consult the SDAPCD for guidance on acceptable separation distances. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
3. Avoid siting new sensitive uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation distance is acceptable between sensitive uses and standard gas dispensing facilities.

Summary

Future development consistent with the proposed project would result in potentially significant emissions of DPM and other TACs. Land development projects are required to comply with AB 2588, SDAPCD Rule 1210, Toxic Air Contaminant Public Health Risks – Public Notification and Risk Reduction, and CARB standards for diesel engines. The General Plan Update Air Quality and Climate Protection Element requires future land uses to be sited according to CARB recommendations. Therefore, impacts related to TACs from freeways, dry cleaning facilities, and gas stations would be less than significant. However, CARB does not make specific recommendations for other potential sources of TACs in the project planning area, including waste transfer, industrial, medical, and research and development facilities. Therefore, the proposed project would result in a potentially significant impact to sensitive receptors.

Mitigation Measures

Implementation of the following measures would reduce potential impacts associated with exposure of sensitive receptors to TACs to a less than significant level.

Air-3 **Siting Sensitive Receptors near Waste Transfer Facility**. A Health Risk Assessment (HRA) shall be prepared by a qualified air quality professional for development of new sensitive receptors proposed in the General Plan Update planning area within 500 feet of a waste transfer facility. Sensitive receptors include day care centers, schools, retirement homes, hospitals, medical patients in residential homes, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. The project shall not be considered for approval until an HRA has been completed and approved by the City. The methodology for the HRA shall follow the Office of Environmental Health Hazard Assessment (OEHHA) and SDAPCD guidelines for the preparation of HRAs. If a potentially significant health risk is identified, the HRA shall identify appropriate measures to reduce the potential health risk to below a significant level, or the sensitive receptor shall be sited in another location.

Air-4 **Siting Sensitive Receptors near Industrial, Medical, or Research and Development Facilities**. A Health Risk Assessment (HRA) shall be prepared by a qualified air quality professional for

development of new sensitive receptors in the General Plan Update planning area proposed within one mile of industrial land uses, medical facilities, or research and development facilities that generate a potential source of TACs. Sensitive receptors include day care centers, schools, retirement homes, hospitals, medical patients in residential homes, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. An HRA shall also be required for such facilities proposed within one mile of a sensitive receptor. The project shall not be considered for approval until an HRA has been completed and approved by the City. The methodology for the HRA shall follow the Office of Environmental Health Hazard Assessment (OEHHA) and SDAPCD guidelines for the preparation of HRAs. If a potentially significant health risk is identified, the HRA shall identify appropriate measures to reduce the potential health risk to below a significant level, or the sensitive receptor or proposed facility shall be sited in another location.

Significance After Mitigation

Less than significant.

6.4 Odor Impacts

Significance Criteria

Based on Appendix G of the CEQA Guidelines and existing City policies and regulations, the proposed project would result in a significant impact if it would result in the emission of any material which causes a nuisance to a considerable number of persons or endangers the comfort, health or safety of any person. A land use which would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of offsite receptors.

Impact Analysis

Construction associated with implementation of the General Plan Update could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust; however, because the construction equipment would be operating at various locations throughout the General Plan Update boundary, construction would not take place all at once, and because any operations near existing receptors would be temporary, impacts associated with odors during construction are not considered significant.

The CARB's Air Quality and Land Use Handbook includes a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, waste transfer stations, petroleum refineries, biomass operations, automobile body shops, coating operations, fiberglass manufacturing, foundries, rendering plants, and livestock operations. The General Plan Update accommodates the construction of commercial, retail, office, and residential land uses that do not typically result in a source of nuisance odors associated with operation. However, the General Plan Update would also accommodate new industrial land uses that would have the potential to produce objectionable odors during industrial processes and manufacturing. New automobile body shops may also be accommodated in the proposed commercial and retail areas. In addition, the City is currently developed with one wastewater treatment plant and waste transfer facility. The CARB does not recommend separation distances for sources of odor; however, the Ventura County Air Pollution Control District (VCAPCD) has established screening level distances

for typical odor sources. The VCAPCD also determined that the land uses most sensitive to odor are schools, day care centers, playgrounds, retirement homes, convalescent homes, hospitals, and job sites. Development in close proximity to these uses would have the potential to expose offsite receptors to objectionable odors.

One wastewater treatment plant is located in the General Plan Update boundary: the Hale Avenue Resource Recovery Facility (HARRF), located at 1521 South Hale Avenue. The area surrounding the facility is developed and the facility is located outside of the 15 study areas proposed for substantial new growth. The General Plan Update designates the area surrounding the HARRF for industrial land uses, which would be the land use least sensitive to odors. Additionally, the HARRF currently implements odor control measures such as clarifiers and chemical additives to control odors (City 2011). Therefore, implementation of the General Plan Update would not result in the exposure of a substantial number of new receptors to odors from the HARRF.

As discussed above, Escondido Disposal, Inc. currently operates a waste transfer station in the City at 1044 West Washington Avenue in an existing industrial area. This area is the Transit Station Target Area as identified in the General Plan Update and is proposed for new mixed use development, including multi-family residential, commercial, office, and industrial land uses. The VCAPCD screening level distance for waste transfer facilities is one mile. Within this study area, residential uses are proposed to be part of regional commercial attraction and would likely be sited away from industrial uses, including the transfer facility. However, the General Plan Update would have the potential accommodate new high-density residential development and other potentially odor sensitive land uses near a waste transfer facility. This impact would be potentially significant.

As discussed above, automotive repair facilities are currently located throughout the General Plan Update boundary, and would continue to be accommodated in commercial and retail areas under the General Plan Update. The smart growth principles in the General Plan Update emphasize residential land uses in close proximity to neighborhood-serving retail and commercial uses, which could include automotive repair facilities. The VCAPCD does not establish an odor screening level distance for automobile body repair shops; however, one mile is the typical distance for industrial operations and is assumed to be a conservative screening level for automobile body repair shops. The General Plan Update would have the potential to result in new odor sensitive land uses within one mile of an automobile body repair shop; therefore, impacts would be potentially significant.

As discussed above, industrial land uses are currently found throughout the core of the City. New industrial land uses would be accommodated in the Downtown SPA, Transit Station Target Area, South Quince Street Target Area, Imperial Oakes SPA #13, ERTC North SPA, ERTC South SPA, and in locations outside of the study area boundaries. The Downtown SPA, Transit Station Target Area, South Quince Street Target Area, and areas outside of the study areas would accommodate new residential development, which could be susceptible to odors if sited near an industrial use. However, not all industrial land uses produce objectionable odors. Industrial uses of concern include fiberglass operations and coating operations. It is currently unknown what new industrial processes would be proposed under the General Plan Update, or what existing industrial process would be near future proposed odor sensitive development. Industrial and manufacturing land uses that would result in air emissions generally require permitting from the SDAPCD. However, permitting would generally cover emissions that present health risks and may not eliminate odors. The screening level distance for industrial processes with the potential to generate odors is one mile. The General Plan Update would have the potential result in new odor sensitive receptors within one mile of industrial land uses. Therefore, impacts related to industrial land uses would be potentially significant.

Federal, State, and Local Regulations and Existing Regulatory Processes

The sources of odors discussed above are subject to SDAPCD Rule 51, Nuisance, regarding odor control and are not permitted to allow nuisance odors to affect nearby receptors. Facilities that cause nuisance odors are subject to enforcement action by the SDAPCD. The SDAPCD responds to odor complaints by investigating the complaint and determining whether the odor violates SDAPCD Rule 51. The inspector will take enforcement action if the source is not in compliance with the SDAPCD rules and regulations and will inform the complainant of investigation results (SDAPCD 2010). In the event of enforcement action, odor-causing impacts must be mitigated by appropriate means to reduce the impacts to sensitive receptors to less than significant. Such means include shutdown of odor sources or requirements to control odors using add-on equipment.

Proposed General Plan Update Goals and Policies

The General Plan Update Mobility and Infrastructure Element includes the following policy that pertains to odors:

- Wastewater System Policy 13.13: Maintain a buffer zone around the HARRF limiting the amount of new residential development, and permit compatible non-residential development that utilizes site planning and architectural techniques that minimize public exposure to odors and health risks.

Additionally, the Land Use and Community Form Element includes the following similar policy:

- Public Facility Overlay Policy 13.3: Maintain a buffer zone around the HARRF and restrict development in order to minimize public exposure to odors and public health risks. Limit the amount of new residential development within this zone and permit non-residential uses that would not adversely impact existing residences. Encourage development to incorporate site planning and architectural layout techniques that minimizes exposure to odors.

Figure II-6, General Plan Land Use Designations, in the Land Use and Community Form Element includes a general description and recommended urban form characteristics for each land use designation. The General Description for the Vertical Mixed Use land use designation prohibits commercial uses characterized by odors or other activities in mixed use structures that would adversely impact on-site residential units. The recommended urban form characteristics for all mixed use development include the requirement for adequate provisions to ensure compatibility with issues related to odors and trash.

Summary

While odor sources are present within the General Plan Update and Downtown Specific Plan planning areas, such as the HARRF and waste transfer facility, SDAPCD Rule 51, Nuisance, prohibits nuisance odors that adversely affect nearby receptors. Development of land uses consistent with the General Plan Update that would have the potential to result in nuisance odors, such as new industrial facilities, would be required to comply with SDAPCD regulations related to odor. The General Plan Update land use designations prohibit the siting and construction of land uses in mixed use development that are incompatible due to odors. Compliance and SDAPCD Rule 51 and the General Plan Update would ensure that a substantial number of sensitive receptors would not be exposed to objectionable odors. Therefore, the proposed project's impacts associated with objectionable odors would be less than significant.

Mitigation Measure

None required.

6.5 Cumulatively Considerable Net Increase of Criteria Pollutants

Significance Criteria

Based on Appendix G of the CEQA Guidelines and existing City policies and regulations, the proposed project would result in a significant impact if it would contribute to a cumulatively considerable net increase of any criteria pollutant for which the SDAB is non-attainment under an applicable federal or state ambient air quality standard. The SDAB is presently designated as a basic non-attainment area for the federal (NAAQS) ozone standard. The SDAB is also a non-attainment area for the state (CAAQS) standards for ozone, PM_{10} and $PM_{2.5}$. This means that the SDAB has not met the federal and/or state standards for these air pollutants. As such, the highest concern involving criteria pollutants is whether the proposed project would result in a cumulatively considerable net increase of PM_{10}, $PM_{2.5}$, or exceed screening-level criteria thresholds of ozone precursors (NO_X and VOCs).

Impact Analysis

A localized pollutant concentration analysis is applicable to the analysis of cumulative impacts of construction emissions because construction emissions would be temporary. Pollutant emissions would disperse or settle out following construction and would not contribute to long-term concentrations of emissions in the SDAB. Neither the City nor the SDAPCD has established screening thresholds for localized impacts. In lieu of any set quantitative air quality significance thresholds for localized impacts for cumulative analysis, the Localized Significance Thresholds (LST) established by the SCAQMD (SCAQMD 2009) are used to determine potential cumulative impacts. Based on the LSTs, NO_x emissions decrease approximately 95 percent beyond a distance of approximately 4,270 feet. Therefore, cumulative projects separated by more than 4,270 feet would not result in a cumulative NO_x impact. According to the LSTs, PM_{10} decreases approximately 95 percent beyond a distance of 1,300 feet, and $PM_{2.5}$ decreases approximately 95 percent beyond a distance of 1,430 feet. SCAQMD has not established an LST for VOCs. However, because VOCs disperse quickly (California Indoor Air Quality 2011), it is assumed conservatively that VOC emissions would decrease by 95 percent beyond a distance of 1,300 feet similar to PM_{10}. Therefore, cumulative projects separated by more than 1,300 feet would not result in cumulative PM_{10} and VOCs impacts, and projects separated by more than 1,430 feet would not result in cumulative $PM_{2.5}$ impacts.

It is unlikely that construction projects associated with the General Plan Update and those associated with cumulative projects would take place in close proximity to each other and at the same time. However, the potential exists for future construction projects to be located within the cumulative impact screening distances of each other, particularly in the 15 project study areas when the greatest amount of growth and redevelopment would occur. As shown above in the Table 10, Construction Daily Maximum Air Pollutant Emissions, the emissions of VOCs and PM_{10} during construction under the General Plan Update would potentially exceed the threshold of significance. Therefore, a potentially significant cumulative impact would occur. Implementation of mitigation measures Air-1 and Air-2 would reduce construction

emissions, but it cannot be guaranteed that these measures would reduce impacts to below a significant level. Therefore, project construction could result in a cumulatively considerable and unavoidable contribution to a significant cumulative impact.

Operation of the proposed project would emit NO_X, VOCs, and particulate matter. The RAQS and SIP are the applicable planning documents for the SDAB. The purpose of these documents is to reduce regional cumulative emissions of criteria air pollutants to below the NAAQS and CAAQS. A cumulative project would result in a cumulatively considerable contribution to regional emissions if it would not conform to the RAQS or SIP, or have a significant direct impact to air quality by exceeding the significance thresholds listed above in Table 9, SDAPCD Screening Level Thresholds and City Daily Emission Criteria, which would hinder the region's ability to meet the RAQS and SIP reduction targets. As discussed above under Issue 1, the General Plan Update would conform to the SIP and RAQS; however, operation of future development under the General Plan Update would have the potential to result in significant direct impacts to air quality from particulate matter emissions from vehicular sources. Therefore, the project's contribution to the regional air quality impacts related to particulate matter emissions would be cumulatively considerable. However, the proposed project is anticipated to result in less than significant direct emissions of VOCs and NOx due to increasingly stringent vehicular emission standards. Therefore, the project's contribution to the regional air quality impacts related to particulate matter emissions would be considered cumulatively considerable.

Federal, State and Local Regulations and Existing Regulatory Processes

The RAQS and SIP are intended to reduce cumulative air quality impacts in the SDAB to less than significant levels. As discussed under Issue 1, the proposed project would not conflict with or obstruct the implementation of the San Diego RAQS and/or applicable portions of the SIP because it would be consistent with growth projections for the General Plan Update boundary.

Proposed General Plan Update Goals and Policies

The General Plan Update includes policies designed to promote continued reductions in air emissions in the SDAB. These policies are described in Issue 2: Conformance to Federal and State AAQS.

Mitigation Measure

The mitigation measures identified in Section 6.2 for construction and operational emissions associated with operation of future projects under the General Plan Update would reduce air pollutant emissions to the extent feasible; however, impacts would remain cumulatively considerable and unavoidable.

7.0 Conclusion

Development under the General Plan Update would result in emissions of air pollutants during construction and operation. Implementation of the proposed project would be consistent with regional growth projections accounted for in the RAQS and SIP. Therefore, implementation of the proposed project would not conflict with or obstruct the implementation of the RAQS or applicable portions of the SIP.

Construction emissions would include emissions associated with fugitive dust, heavy construction equipment and construction workers commuting to and from the site. The emissions associated with construction would be temporary, but would have the potential to exceed the screening level thresholds

for VOC, NOx, and PM_{10}. Implementation of measure Air-1 would minimize air pollutant emissions during project construction, but not to a less than significant level.

The net increase in operational air pollutant emissions (both area and mobile) associated with the 2035 planning horizon of the General Plan Update would exceed the screening level thresholds established by the SDAPCD for PM_{10} and $PM_{2.5}$. Mitigation measure Air-2 would require future projects developed within the General Plan Update area that would exceed the trigger criteria to prepare a project-specific AQIA. However, the project's contribution to the regional air quality impact would remain significant and unavoidable, as well as cumulatively considerable and unavoidable.

Impacts associated with exposure of sensitive receptors to substantial pollutant concentrations were analyzed for carbon monoxide and TACs. A CO hotspot would not occur as a result of implementation of the proposed project. Based on the type of land uses proposed within the General Plan Update, impacts associated with the exposure of sensitive receptors to TACs is potentially significant. The preparation of HRAs (Air-3 and Air-4) and would reduce the potential of exposure to TACs to a less than significant level.

The General Plan Update would have the potential to locate new receptors near existing and future sources of objectionable odors. However, compliance with Rule 51 and the General Plan Update would ensure that impacts would be less than significant.

8.0 References

California Air Resources Board (CARB). 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October.

California Air Resources Board (CARB). 2004. Final Regulation Order – Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling. July 22.

California Air Resources Board (CARB). 2004. 2004 Revision to the California State Implementation Plan for Carbon Monoxide. July 22.

California Air Resources Board (CARB). 2005. Air Quality and Land Use Handbook: A Community Health Perspective. April.

California Air Resources Board (CARB). 2007. EMFAC2007 Version 2.3.

California Air Resources Board (CARB). 2007. URBEMIS 2007 Version 9.2.4.

California Air Resources Board (CARB). 2009. 2010 Area Designations for State Ambient Air Quality Standards – Ozone, PM_{10}, $PM_{2.5}$, Carbon Monoxide, Nitrogen Dioxide, Lead, Sulfur Dioxide, Sulfates, Hydrogen Sulfide, Visibility Reducing Particulates. December. Accessed August 23, 2011, available at http://www.arb.ca.gov/desig/adm/adm.htm

California Air Resources Board (CARB). 2010. Gaseous Criteria Pollutants. December 10. Accessed June 3, 2011, available at http://www.arb.ca.gov/aaqm/criteria.htm

California Air Resources Board (CARB). 2010. Ambient Air Quality Standards. September 8.

California Air Resources Board (CARB). 2011. Highest 4 Daily Maximum: Hourly Nitrogen Dioxide Measurements, State 24-Hour Sulfur Dioxide Averages, Hourly Ozone Measurements, 24-Hour PM2.5 Averages, 8-Hour Carbon Monoxide Averages, 8-Hour Ozone Averages, 24-Hour PM10 Averages. Accessed August 23, 2011, available at http://www.arb.ca.gov/adam/topfour/topfourdisplay.php

California Department of Transportation (Caltrans). 1989. CALINE 4 – A Dispersion Model for Predicting Air Pollutant Concentrations Near Roadways. Version 1.32. June 1989.

California Department of Transportation (Caltrans). 1997. *Transportation Project-Level Carbon Monoxide Protocol*. Revised December 1997.

California Indoor Air Quality. 2011. VOC Questions. Accessed May 31, 2011, available at http://www.cal-iaq.org/vocs/voc-questions

City of Escondido. 2000. Hale Avenue Resource Recovery Facility – Phase II Construction Facts.

City of Escondido. 2011. Escondido Municipal Code – Chapter 33 Zoning, Article 47. Environmental Quality. Accessed August 12, 2011, available at http://qcode.us/codes/escondido/view.php?topic=33-47&showAll=1&frames=on

County of San Diego. 2007. *Guidelines for Determining Significance, Air Quality*, Department of Planning and Land Use, March 19, 2007.

County of San Diego. 2007. *Report Format and Content Requirements, Air Quality*, Department of Planning and Land Use, March 19, 2007.

Escondido Disposal, Inc. 2011. Public Disposal Site. Accessed August 18, 2011, available at http://www.escondidodisposal.com/public-disposal-site.html

Linscott, Law and Greenspan, Engineers. 2011. Escondido General Plan Update 1st Draft Traffic Impact Analysis. August 23.

North County Transit District. 2009. Breeze Fact Sheet. September.

Office of Environmental Health Hazard Assessment (OEHHA 2003). Air Toxics Hot Spots Program Risk Assessment Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. August 2003.

San Diego Air Pollution Control District (SDAPCD). 1969. SDAPCD Regulation IV, Rule 51. January 1.

San Diego Air Pollution Control District (SDAPCD). 2001. SDAPCD Regulation IV, Rule 67 – Architectural Coatings. December 12.

San Diego Air Pollution Control District (SDAPCD). 2005. Measures to Reduce Particulate Matter in San Diego County. December.

San Diego Air Pollution Control District (SDAPCD 2006). Supplemental Guidelines for Submission of Air Toxics "Hot Spots" Program Health Risk Assessments (HRAs). June 2006.

San Diego Air Pollution Control District (SDAPCD). 2007. *Eight-Hour Ozone Attainment Plan for San Diego County*. May 2007.

San Diego Air Pollution Control District (SDAPCD). 2007. Air Quality in San Diego County – 2007 Annual Report.

San Diego Air Pollution Control District (SDAPCD). 2009. *The San Diego Regional Air Quality Strategy Revision.* April.

San Diego Air Pollution Control District (SDAPCD). 2009. Compliance Advisory – Notice of Adoption of New Rule 55 – Fugitive Dust Control. September 23.

San Diego Air Pollution Control District (SDAPCD). 2009. 2008 Air Toxics "Hot Spots" Program Report for San Diego County – After Workshop Draft. September 23.

San Diego Air Pollution Control District (SDAPCD). 2010. Fact Sheet – Frequently Asked Questions. January.

San Diego Air Pollution Control District (SDAPCD). 2010. Fact Sheet – Nuisance Complaint Program. February.

San Diego Air Pollution Control District (SDAPCD). 2011. Equipment Specific Permitting Guidelines. Accessed August 24, 2011, available at http://www.sdapcd.org/permits/EquipGuide/Guidelines.html

San Diego Air Pollution Control District (SDAPCD). 2011. Title V – Operating Permit Program. Accessed August 24, 2011, available at http://www.sdapcd.org/permits/Title-V/TitleVIntro.html

San Diego Air Pollution Control District (SDAPCD). 2011. 2010 Air Toxics "Hot Spots" Program Report for San Diego County – After Workshop Draft. July 5.

San Diego Air Pollution Control District (SDAPCD). 2011. New Source Review Requirements for Best Available Control Technology (BACT) Guidance Document. June.

San Diego Association of Governments. 2007. 2030 Regional Transportation Plan – Technical Appendices – Technical Appendix 2, Regional Population Growth Forecasts. November 30. Accessed August 25, 2011, available at http://www.sandag.org/programs/transportation/comprehensive_transportation_projects/2030rtp/2007rtp_ta_2.pdf

San Diego Gas & Electric. 2011. Palomar Energy Center. Accessed August 18, 2011, available at http://www.sdge.com/aboutus/longterm/palomar.shtml

South Coast Air Quality Management District. 2009. Localized Significance Threshold Mass Rate Look Up Tables. October 21.

U.S. Environmental Protection Agency (EPA). 2011. An Introduction to Indoor Air Quality. Updated March 22. Accessed June 3, 2011, available at http://www.epa.gov/iedweb00/co.html

U.S. Environmental Protection Agency (EPA). 2011. Currently Designated Nonattainment Areas for all Criteria Pollutants. April 21. Accessed August 23, 2011, available at http://www.epa.gov/air/oaqps/greenbk/ancl.html#CALIFORNIA

Ventura County Air Pollution Control District. 2003. Ventura County Air Quality Assessment Guidelines. October.

Western Regional Climate Center. 2011. Climate Summary – Escondido, California. Accessed January 6, 2011, available at http://www.wrcc.dri.edu/cgi-bin/cliLIST.pl?ca2862+ca

Appendix A
Air Quality Data

URBEMIS 2007 Modeling Data

8/22/2011 11:54:58 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: H:\Environmental\Projects - Current\100019123 Escondido General Plan EIR\Technical Reports\Air Quality\URBEMIS\Escondido Construction 08 16 11.urb924

Project Name: Escondido Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	684.43	188.08	149.63	0.20	722.23	7.72	729.95	150.92	7.10	158.02	30,382.25
2013 TOTALS (lbs/day mitigated)	616.86	188.08	149.63	0.20	408.75	7.72	416.47	85.45	7.10	92.55	30,382.25

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/2/2013-3/1/2013 Active Days: 43	7.74	79.16	38.43	0.07	59.28	3.31	62.59	12.36	3.04	15.41	12,115.47
Demolition 01/02/2013-03/01/2013	7.74	79.16	38.43	0.07	59.28	3.31	62.59	12.36	3.04	15.41	12,115.47
Fugitive Dust	0.00	0.00	0.00	0.00	59.00	0.00	59.00	12.27	0.00	12.27	0.00
Demo Off Road Diesel	4.82	38.74	23.13	0.00	0.00	1.80	1.80	0.00	1.65	1.65	4,132.45
Demo On Road Diesel	2.89	40.36	14.20	0.07	0.28	1.50	1.78	0.09	1.38	1.47	7,855.19
Demo Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Time Slice 3/4/2013-5/10/2013 Active Days: 50	17.42	**188.08**	80.74	**0.20**	**722.23**	**7.72**	**729.95**	**150.92**	**7.10**	**158.02**	**30,382.25**
Fine Grading 03/04/2013-05/10/2013	17.42	188.08	80.74	0.20	722.23	7.72	729.95	150.92	7.10	158.02	30,382.25
Fine Grading Dust	0.00	0.00	0.00	0.00	721.47	0.00	721.47	150.67	0.00	150.67	0.00
Fine Grading Off Road Diesel	9.53	78.62	40.07	0.00	0.00	3.63	3.63	0.00	3.34	3.34	8,842.87

Fine Grading On Road Diesel	7.83	109.35	38.48	0.20	0.75	4.08	4.82	0.24	3.75	3.99	21,283.74
Fine Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65
Time Slice 5/13/2013-6/14/2013	1.74	14.16	8.84	0.00	0.00	0.68	0.69	0.00	0.63	0.63	1,816.90
Active Days: 25											
Trenching 05/13/2013-06/14/2013	1.74	14.16	8.84	0.00	0.00	0.68	0.69	0.00	0.63	0.63	1,816.90
Trenching Off Road Diesel	1.72	14.12	7.97	0.00	0.00	0.68	0.68	0.00	0.62	0.62	1,714.64
Trenching Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26
Time Slice 6/17/2013-10/4/2013	8.57	48.80	142.74	0.18	0.85	2.54	3.39	0.30	2.29	2.60	21,248.94
Active Days: 80											
Building 06/17/2013-10/18/2013	8.57	48.80	142.74	0.18	0.85	2.54	3.39	0.30	2.29	2.60	21,248.94
Building Off Road Diesel	3.19	19.04	13.34	0.00	0.00	1.26	1.26	0.00	1.16	1.16	2,259.28
Building Vendor Trips	2.00	24.02	20.33	0.06	0.23	0.93	1.16	0.08	0.85	0.93	6,219.70
Building Worker Trips	3.38	5.74	109.07	0.12	0.62	0.34	0.96	0.23	0.28	0.50	12,769.96
Time Slice 10/7/2013-10/18/2013	**684.43**	49.16	**149.63**	0.19	0.89	2.56	3.45	0.32	2.31	2.63	22,055.27
Active Days: 10											
Building 06/17/2013-10/18/2013	8.57	48.80	142.74	0.18	0.85	2.54	3.39	0.30	2.29	2.60	21,248.94
Building Off Road Diesel	3.19	19.04	13.34	0.00	0.00	1.26	1.26	0.00	1.16	1.16	2,259.28
Building Vendor Trips	2.00	24.02	20.33	0.06	0.23	0.93	1.16	0.08	0.85	0.93	6,219.70
Building Worker Trips	3.38	5.74	109.07	0.12	0.62	0.34	0.96	0.23	0.28	0.50	12,769.96
Coating 10/07/2013-12/31/2013	675.86	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33
Architectural Coating	675.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.21	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33
Time Slice 10/21/2013-12/6/2013	682.16	24.05	20.66	0.02	0.09	1.73	1.82	0.03	1.59	1.62	3,749.71
Active Days: 35											
Asphalt 10/21/2013-12/06/2013	6.30	23.69	13.77	0.01	0.06	1.70	1.76	0.02	1.57	1.59	2,943.39
Paving Off-Gas	3.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.69	16.46	10.15	0.00	0.00	1.43	1.43	0.00	1.32	1.32	1,418.81
Paving On Road Diesel	0.51	7.18	2.53	0.01	0.05	0.27	0.32	0.02	0.25	0.26	1,396.75
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Coating 10/07/2013-12/31/2013	675.86	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33

Architectural Coating	675.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.21	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33
Time Slice 12/9/2013-12/31/2013	675.86	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33
Active Days: 17											
Coating 10/07/2013-12/31/2013	675.86	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33
Architectural Coating	675.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.21	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33

Phase Assumptions

Phase: Demolition 1/2/2013 - 3/1/2013 - Type Your Description Here

Building Volume Total (cubic feet): 5618860

Building Volume Daily (cubic feet): 140480

On Road Truck Travel (VMT): 1951.11

Off-Road Equipment:

3 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

Phase: Fine Grading 3/4/2013 - 5/10/2013 - Type Your Description Here

Total Acres Disturbed: 163.84

Maximum Daily Acreage Disturbed: 40.96

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2643 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 5286.56

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 5/13/2013 - 6/14/2013 - Type Your Description Here

8/22/2011 11:54:58 AM

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 10/21/2013 - 12/6/2013 - Default Paving Description

Acres to be Paved: 40.96

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 6/17/2013 - 10/18/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 10/7/2013 - 12/31/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/2/2013-3/1/2013 Active Days: 43	7.74	79.16	38.43	0.07	59.28	3.31	62.59	12.36	3.04	15.41	12,115.47

Demolition 01/02/2013-03/01/2013	7.74	79.16	38.43	0.07	59.28	3.31	62.59	12.36	3.04	15.41	12,115.47
Fugitive Dust	0.00	0.00	0.00	0.00	59.00	0.00	59.00	12.27	0.00	12.27	0.00
Demo Off Road Diesel	4.82	38.74	23.13	0.00	0.00	1.80	1.80	0.00	1.65	1.65	4,132.45
Demo On Road Diesel	2.89	40.36	14.20	0.07	0.28	1.50	1.78	0.09	1.38	1.47	7,855.19
Demo Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Time Slice 3/4/2013-5/10/2013 Active Days: 50	17.42	**188.08**	80.74	**0.20**	408.75	**7.72**	416.47	85.45	**7.10**	92.55	**30,382.25**
Fine Grading 03/04/2013-05/10/2013	17.42	188.08	80.74	0.20	408.75	7.72	416.47	85.45	7.10	92.55	30,382.25
Fine Grading Dust	0.00	0.00	0.00	0.00	407.99	0.00	407.99	85.21	0.00	85.21	0.00
Fine Grading Off Road Diesel	9.53	78.62	40.07	0.00	0.00	3.63	3.63	0.00	3.34	3.34	8,842.87
Fine Grading On Road Diesel	7.83	109.35	38.48	0.20	0.75	4.08	4.82	0.24	3.75	3.99	21,283.74
Fine Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65
Time Slice 5/13/2013-6/14/2013 Active Days: 25	1.74	14.16	8.84	0.00	0.00	0.68	0.69	0.00	0.63	0.63	1,816.90
Trenching 05/13/2013-06/14/2013	1.74	14.16	8.84	0.00	0.00	0.68	0.69	0.00	0.63	0.63	1,816.90
Trenching Off Road Diesel	1.72	14.12	7.97	0.00	0.00	0.68	0.68	0.00	0.62	0.62	1,714.64
Trenching Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26
Time Slice 6/17/2013-10/4/2013 Active Days: 80	8.57	48.80	142.74	0.18	0.85	2.54	3.39	0.30	2.29	2.60	21,248.94
Building 06/17/2013-10/18/2013	8.57	48.80	142.74	0.18	0.85	2.54	3.39	0.30	2.29	2.60	21,248.94
Building Off Road Diesel	3.19	19.04	13.34	0.00	0.00	1.26	1.26	0.00	1.16	1.16	2,259.28
Building Vendor Trips	2.00	24.02	20.33	0.06	0.23	0.93	1.16	0.08	0.85	0.93	6,219.70
Building Worker Trips	3.38	5.74	109.07	0.12	0.62	0.34	0.96	0.23	0.28	0.50	12,769.96
Time Slice 10/7/2013-10/18/2013 Active Days: 10	616.86	49.16	**149.63**	0.19	0.89	2.56	3.45	0.32	2.31	2.63	22,055.27
Building 06/17/2013-10/18/2013	8.57	48.80	142.74	0.18	0.85	2.54	3.39	0.30	2.29	2.60	21,248.94
Building Off Road Diesel	3.19	19.04	13.34	0.00	0.00	1.26	1.26	0.00	1.16	1.16	2,259.28
Building Vendor Trips	2.00	24.02	20.33	0.06	0.23	0.93	1.16	0.08	0.85	0.93	6,219.70
Building Worker Trips	3.38	5.74	109.07	0.12	0.62	0.34	0.96	0.23	0.28	0.50	12,769.96
Coating 10/07/2013-12/31/2013	608.29	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33

Architectural Coating	608.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.21	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33
Time Slice 10/21/2013-12/6/2013 Active Days: 35	614.59	24.05	20.66	0.02	0.09	1.73	1.82	0.03	1.59	1.62	3,749.71
Asphalt 10/21/2013-12/06/2013	6.30	23.69	13.77	0.01	0.06	1.70	1.76	0.02	1.57	1.59	2,943.39
Paving Off-Gas	3.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.69	16.46	10.15	0.00	0.00	1.43	1.43	0.00	1.32	1.32	1,418.81
Paving On Road Diesel	0.51	7.18	2.53	0.01	0.05	0.27	0.32	0.02	0.25	0.26	1,396.75
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Coating 10/07/2013-12/31/2013	608.29	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33
Architectural Coating	608.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.21	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33
Time Slice 12/9/2013-12/31/2013 Active Days: 17	608.29	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33
Coating 10/07/2013-12/31/2013	608.29	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33
Architectural Coating	608.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.21	0.36	6.89	0.01	0.04	0.02	0.06	0.01	0.02	0.03	806.33

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 3/4/2013 - 5/10/2013 - Type Your Description Here

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Architectural Coating 10/7/2013 - 12/31/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: H:\Environmental\Projects - Current\100019123 Escondido General Plan EIR\Technical Reports\Air Quality\URBEMIS\Existing Escondido 09 23 11.urb924

Project Name: Existing Escondido

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3,821.48	767.59	2,065.02	0.09	5.87	5.82	946,605.02
TOTALS (lbs/day, mitigated)	3,728.31	617.86	1,988.56	0.09	5.58	5.54	757,824.66
Percent Reduction	2.44	19.51	3.70	0.00	4.94	4.81	19.94

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	4,150.88	4,539.47	38,225.81	23.60	3,651.99	727.63	2,390,918.25

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	7,972.36	5,307.06	40,290.83	23.69	3,657.86	733.45	3,337,523.27

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	57.11	748.62	382.29	0.01	1.42	1.40	943,901.81
Hearth - No Summer Emissions							
Landscape	303.50	18.97	1,682.73	0.08	4.45	4.42	2,703.21
Consumer Products	2,643.51						
Architectural Coatings	817.36						
TOTALS (lbs/day, unmitigated)	3,821.48	767.59	2,065.02	0.09	5.87	5.82	946,605.02

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	45.68	598.89	305.83	0.01	1.13	1.12	755,121.45
Hearth - No Summer Emissions							
Landscape	303.50	18.97	1,682.73	0.08	4.45	4.42	2,703.21
Consumer Products	2,643.51						
Architectural Coatings	735.62						
TOTALS (lbs/day, mitigated)	3,728.31	617.86	1,988.56	0.09	5.58	5.54	757,824.66

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 25%

Percentage of residences with natural gas fireplaces changed from 55% to 50%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	1,469.19	1,430.88	13,103.50	7.56	1,133.09	226.92	761,045.54

Apartments low rise	506.97	455.04	4,167.09	2.40	360.34	72.16	242,023.01
Strip mall	1,628.22	2,132.49	16,372.89	10.93	1,744.60	345.85	1,113,337.68
Office park	179.32	184.50	1,642.57	0.96	146.15	29.22	97,286.84
Industrial park	367.18	336.56	2,939.76	1.75	267.81	53.48	177,225.18
TOTALS (lbs/day, unmitigated)	4,150.88	4,539.47	38,225.81	23.60	3,651.99	727.63	2,390,918.25

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2010 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	12,519.00	9.45	dwelling units	37,557.00	354,913.64	650,521.20
Apartments low rise	1,029.81	6.85	dwelling units	16,477.00	112,867.45	206,874.74
Strip mall		42.92	1000 sq ft	13,001.00	558,002.90	1,004,405.19
Office park		11.40	1000 sq ft	4,091.00	46,637.40	83,947.31
Industrial park		6.90	1000 sq ft	12,389.00	85,484.10	153,871.38
					1,157,905.49	2,099,619.82

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	47.0	1.2	98.4	0.4
Light Truck < 3750 lbs	8.0	1.3	93.8	4.9
Light Truck 3751-5750 lbs	21.7	0.9	98.6	0.5
Med Truck 5751-8500 lbs	9.3	1.1	98.9	0.0

Lite-Heavy Truck 8501-10,000 lbs	7.0	0.0	88.9	11.1
Lite-Heavy Truck 10,001-14,000 lbs	0.6	0.0	50.0	50.0
Med-Heavy Truck 14,001-33,000 lbs	3.7	2.6	26.3	71.1
Heavy-Heavy Truck 33,001-60,000 lbs	0.4	0.0	50.0	50.0
Other Bus	0.1	0.0	50.0	50.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	1.0	68.6	31.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	1.9	1.8	1.8	1.8	1.8	1.8
Rural Trip Length (miles)	1.8	1.8	1.8	1.8	1.8	1.8
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Strip mall				2.0	1.0	97.0
Office park				48.0	24.0	28.0
Industrial park				41.5	20.8	37.8

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: H:\Environmental\Projects - Current\100019123 Escondido General Plan EIR\Technical Reports\Air Quality\URBEMIS\2035 Escondido 09 23 11.urb924

Project Name: Escondido 2035

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	4,543.90	946.12	2,277.22	0.09	6.47	6.41	1,166,678.12
TOTALS (lbs/day, mitigated)	4,431.22	760.92	2,178.57	0.09	6.12	6.06	933,915.65
Percent Reduction	2.48	19.57	4.33	0.00	5.41	5.46	19.95

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3,187.28	3,152.98	26,098.19	37.45	5,929.12	1,160.56	3,827,300.86

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	7,731.18	4,099.10	28,375.41	37.54	5,935.59	1,166.97	4,993,978.98

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

9/23/2011 03:18:40 PM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	70.41	926.01	493.25	0.01	1.75	1.73	1,163,812.35
Hearth - No Summer Emissions							
Landscape	321.80	20.11	1,783.97	0.08	4.72	4.68	2,865.77
Consumer Products	3,165.72						
Architectural Coatings	985.97						
TOTALS (lbs/day, unmitigated)	4,543.90	946.12	2,277.22	0.09	6.47	6.41	1,166,678.12

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	56.33	740.81	394.60	0.01	1.40	1.38	931,049.88
Hearth - No Summer Emissions							
Landscape	321.80	20.11	1,783.97	0.08	4.72	4.68	2,865.77
Consumer Products	3,165.72						
Architectural Coatings	887.37						
TOTALS (lbs/day, mitigated)	4,431.22	760.92	2,178.57	0.09	6.12	6.06	933,915.65

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 12.5%

Percentage of residences with natural gas fireplaces changed from 55% to 37.5%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	928.95	851.25	7,708.15	10.32	1,594.79	313.74	1,051,323.79
Apartments low rise	460.80	386.81	3,502.63	4.69	724.68	142.57	477,728.06
Strip mall	1,255.00	1,446.33	10,811.71	16.89	2,743.76	534.18	1,731,909.27
Office park	246.55	223.69	1,966.78	2.65	412.49	81.07	270,542.89
Industrial park	295.98	244.90	2,108.92	2.90	453.40	89.00	295,796.85
TOTALS (lbs/day, unmitigated)	3,187.28	3,152.98	26,098.19	37.45	5,929.12	1,160.56	3,827,300.86

9/23/2011 03:18:40 PM

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2020 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	13,275.00	11.00	dwelling units	39,825.00	438,075.00	919,957.46
Apartments low rise	1,555.19	8.00	dwelling units	24,883.00	199,064.00	418,034.38
Strip mall		44.00	1000 sq ft	18,036.00	793,584.00	1,587,168.00
Office park		12.36	1000 sq ft	9,628.00	119,002.08	238,004.15
Industrial park		8.46	1000 sq ft	15,467.00	130,850.82	261,701.64
					1,680,575.90	3,424,865.63

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	47.0	0.0	100.0	0.0
Light Truck < 3750 lbs	8.0	0.0	98.8	1.2
Light Truck 3751-5750 lbs	22.0	0.0	100.0	0.0
Med Truck 5751-8500 lbs	8.0	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	7.6	0.0	92.0	8.0
Lite-Heavy Truck 10,001-14,000 lbs	2.0	0.0	77.8	22.2
Med-Heavy Truck 14,001-33,000 lbs	2.2	0.0	30.8	69.2
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	25.0	75.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	1.0	38.9	61.1	0.0

School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	2.1	2.1	2.1	2.0	2.0	2.0
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Strip mall				2.0	1.0	97.0
Office park				48.0	24.0	28.0
Industrial park				41.5	20.8	37.8

E-CAP Measure Emissions Reductions

E-Cap Measure	Estimated Emissions Reduction
R2-T2 - Bicyle Master Plan; R2-T3: Transit Improvements; R2-T4: Transportation Demand Management	10.1 percent of total 2035 passenger Vehicular Emissions (not net)
R2-E1: New Residential Energy Efficiency Requirements; R2-E2: New Commerical Energy Efficiency Requirements	30 percent reduction in net natural gas emissions
R2-E5: Existing Residential Energy Retrofits; R2-E6: Existing Commercial Energy Retrofits	30 percent reduction in existing natural gas emissions
R2-A1: Electric Landscaping Equipment	1.3 percent decrease in total landscaping emissions

		VOC	NOx	CO	SO2	PM10	PM2.5
Total 2035 Vehicular Emissions		3,187	3,153	26,098	37	5,929	1,616
R2-T2, R2-T3, R2-T4	*10.1% Emissions Reduction:*	*321.887*	*318.453*	*2635.898*	*3.737*	*598.829*	*163.216*
Existing Natural Gas Emissions		57	749	382	0	1	1
R2-E5, R2-E6	*30% Emissions Reduction*	*17.1*	*224.7*	*114.6*	*0*	*0.3*	*0.3*
2035 Natural Gas Emissions		70	926	493	0	2	2
Net Change in Natural Gas Emissions		13	177	111	0	1	1
R2-E1, R2-E2	*30% Emissions Reduction*	*3.9*	*53.1*	*33.3*	*0*	*0.3*	*0.3*
2035 Landscaping Emissions		322	20	1,784	0	5	5
R2-A1	*1.3% Emissions Reduction*	*4.186*	*0.26*	*23.192*	*0*	*0.065*	*0.065*
Total Emissions Reductions		**347.073**	**596.513**	**2806.99**	**3.737**	**599.494**	**163.881**

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Centre City Pkwy - Felicita Rd PM 2035
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	10. M	AMB=	4.2 PPM		
SIGTH=	25. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Centre-N	*	0	150	0	0	* AG	3580	1.9	.0	13.2
B. Centre-S	*	0	0	0	-150	* AG	2660	1.9	.0	13.2
C. Felicita-W	*	-150	0	0	0	* AG	2880	1.9	.0	13.2
D. Felicita-E	*	0	0	150	0	* AG	4030	1.9	.0	13.2

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE Recep	*	9	-9	1.5
2. NW Recep	*	-9	9	1.5
3. NE Recep	*	9	9	1.5
4. SW Recep	*	-9	-9	1.5

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	CONC/LINK (PPM) A	B	C	D
1. SE Recep	*	346.	*	4.8	*	.3	.0	.0	.3
2. NW Recep	*	104.	*	4.8	*	.2	.0	.0	.4
3. NE Recep	*	199.	*	4.8	*	.0	.2	.0	.2
4. SW Recep	*	73.	*	4.8	*	.0	.2	.0	.4

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: El Norte Pkwy-Centre City Pkwy PM 2035
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	10. M	AMB=	4.2 PPM		
SIGTH=	25. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. CentreCity-N	0	150	0	0	AG	1920	1.9	.0	13.2
B. CentreCity-S	0	0	0	-150	AG	3110	1.9	.0	13.2
C. ElNorte-W	-150	0	0	0	AG	2970	1.9	.0	13.2
D. ElNorte-E	0	0	150	0	AG	3200	1.9	.0	13.2

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. SE Recep	9	-9	1.5
2. NW Recep	-9	9	1.5
3. NE Recep	9	9	1.5
4. SW Recep	-9	-9	1.5

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D
1. SE Recep	288.	4.7	.0	.2	.3	.0
2. NW Recep	163.	4.7	.0	.3	.2	.0
3. NE Recep	194.	4.7	.0	.3	.0	.2
4. SW Recep	73.	4.7	.0	.2	.0	.3

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

               JOB: Escondido Blvd/Felicita Rd PM 2035
               RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=   1.0 M/S              Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE             VD=   .0 CM/S
      CLAS=     7 (G)              VS=   .0 CM/S
      MIXH=   10. M               AMB=  4.2 PPM
     SIGTH=   25. DEGREES        TEMP= 10.0 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
-----------------*-------------------------*-------------------------------
A. Escondido-N   *    0   150     0     0 *  AG   2620   1.9     .0  13.2
B. Escondido-S   *    0     0     0  -150 *  AG   2930   1.9     .0  13.2
C. Felicita-W    * -150     0     0     0 *  AG   4530   1.9     .0  13.2
D. Felicity-E    *    0     0   150     0 *  AG   4060   1.9     .0  13.2


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
  RECEPTOR   *    X      Y      Z
-------------*--------------------
1. SE Recep  *     9     -9   1.5
2. NW Recep  *    -9      9   1.5
3. NE Recep  *     9      9   1.5
4. SW Recep  *    -9     -9   1.5


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *      CONC/LINK
             *  BRG  * CONC  *        (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D
-------------*-------*-------*--------------------
 1. SE Recep *  287. *   4.9 *   .0   .2   .4   .0
 2. NW Recep *  108. *   4.8 *   .2   .0   .0   .4
 3. NE Recep *  253. *   4.9 *   .2   .0   .4   .0
 4. SW Recep *   72. *   4.8 *   .0   .2   .0   .4
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-15/Del Lago/Vio Rancho PM 2035
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	10. M	AMB=	4.2 PPM		
SIGTH=	25. DEGREES	TEMP=	10.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Del Lago	*	0	150	0	0	* AG	970	1.9	.0	13.2
B. I-15 ramp	*	0	0	0	-150	* AG	2330	1.9	.0	13.2
C. VioRancho-W	*	-150	0	0	0	* AG	1200	1.9	.0	13.2
D. VioRancho-E	*	0	0	150	0	* AG	2590	1.9	.0	13.2

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE Recep	*	9	-9	1.5
2. NW Recep	*	-9	9	1.5
3. NE Recep	*	9	9	1.5
4. SW Recep	*	-9	-9	1.5

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	CONC/LINK (PPM) A	B	C	D
1. SE Recep	*	296.	*	4.5	*	.0	.1	.0	.0
2. NW Recep	*	107.	*	4.5	*	.0	.0	.0	.2
3. NE Recep	*	193.	*	4.6	*	.0	.2	.0	.2
4. SW Recep	*	77.	*	4.6	*	.0	.1	.0	.2