

4.2 AIR QUALITY

This section of the PEIR is based on the *Air Quality Technical Report for the Downtown Vista Specific Plan Update* prepared by PBS&J in November 2009. The report, included as Appendix B of this PEIR, addresses air pollutant emissions as a result of projected construction and operation of projects implemented under the DVSP Update.

4.2.1 EXISTING CONDITIONS

4.2.1.1 Climate and Meteorology

Regional climate and local meteorological conditions influence ambient air quality. The plan 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 San Diego, the normal daily maximum temperature is 78 degrees Fahrenheit (°F) in August, and the normal daily minimum temperature is 49° F in December, according to the “Climate Data Summary” provided by the Western Regional Climate Center (WRCC 1998). The normal precipitation in San Diego is about 10 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 also can trap pollutants.

4.2.1.2 AIR POLLUTANTS

Historically, air quality laws and regulations have divided air pollutants into two broad categories: “criteria air pollutants” and “toxic air contaminants.” 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 (U.S. Environmental Protection Agency [EPA] 1998). Toxic air contaminants (air toxics or toxic air pollutants) are often referred to as “non-criteria” air pollutants because ambient air quality standards have not been established for them. Under certain conditions, toxic air contaminants may cause adverse health effects, including cancer and/or acute and chronic noncancerous effects.

Criteria Air Pollutants

The criteria air pollutants pertinent to the analyses in this report are carbon monoxide (CO), nitrogen oxides (NO_x), O₃, particulate matter, and sulfur dioxide. The following describes the health effects for each criteria air pollutant based on information published by the EPA (EPA 2009) and the CARB (CARB 2008).

Carbon monoxide (CO)

A colorless, odorless, poisonous gas, produced by incomplete burning of carbon-based fuels, including gasoline, oil, and wood. CO is also produced from incomplete combustion of many natural and synthetic products. For instance, cigarette smoke contains CO. When CO 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 CO can cause serious health effects.

Nitrogen oxides (NO_x)

A general term pertaining to compounds, including nitric oxide (NO), nitrogen dioxide (NO₂), and other NO_x. NO_x are produced from burning fuels, including gasoline, diesel, and coal. NO_x are smog formers, which react with volatile organic compounds (VOCs) to form smog. NO_x are also major components of acid rain.

Ozone (O₃)

O₃ is a corrosive gas composed of three oxygen atoms linked together. O₃ 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. O₃ 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. O₃ 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. O₃ levels are higher during the spring and summer months.

Particulate matter (PM₁₀ and PM_{2.5})

Particulate matter 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). PM₁₀ 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 (SO₂)

SO₂ is a pungent, colorless gases 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).

4.2.1.2 Existing Air Quality

The closest air quality monitoring station to the SPA is the Camp Pendleton station, approximately 10 miles northwest of the SPA. This station monitors ambient O₃ and NO₂ concentrations. The next closest air quality monitoring station to the plan area is the Escondido station on East Valley Parkway, approximately 12 miles southeast of the project. This station monitors ambient O₃, CO, NO₂, PM₁₀, and PM_{2.5} concentrations. Table 4.2-1 presents a summary of the highest pollutant concentrations monitored during the three most recent years (2006 through 2008) for which the SDAPCD has reported data for these stations. SO₂ emissions data is not presented in this section because there has never been a violation of the federal or state SO₂ standards in San Diego County.

Table 4.2-1. Air Quality Monitoring Data

Pollutant	Monitoring Station	2006	2007	2008
Ozone				
Maximum 1-hour concentration (ppm)	Camp Pendleton	0.086	0.083	0.104
Days above 1-hour state standard (>0.09 ppm)		0	0	1
Maximum 8-hour concentration (ppm)		0.073	0.074	0.077
Days above 8-hour state standard (>0.07 ppm)		5	4	3
Days above 8-hour federal standard (>0.075 ppm)		0	0	2
Carbon Monoxide (CO)				
Maximum 8-hour concentration (ppm)	Escondido-East Valley Parkway	3.61	3.19	2.81
Days above state or federal standard (>9.0 ppm)		0	0	0
Respirable Particulate Matter (PM₁₀)				
Peak 24-hour concentration ($\mu\text{g}/\text{m}^3$)	Escondido – East Valley Parkway	52.0	68.0	84.0
Days above state standard (>50 $\mu\text{g}/\text{m}^3$)		1	2	1
Days above federal standard (>150 $\mu\text{g}/\text{m}^3$)		0	0	0
Fine Particulate Matter (PM_{2.5})				
Peak 24-hour concentration ($\mu\text{g}/\text{m}^3$)	Escondido – East Valley Parkway	40.6	126.2	44.0
Days above federal standard (>35 $\mu\text{g}/\text{m}^3$)		1	11	0
Nitrogen Dioxide (NO₂)				
Peak 1-hour concentration (ppm)	Camp Pendleton	0.081	0.068	0.089
Days above state 1-hour standard (0.18 ppm)		0	0	0

Note: The federal 1-hour ozone standard was revoked in 2005.

PPM = parts per million, $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

Source: CARB, www.arb.gov, 2009.

As shown in Table 4.2-1, the one-hour O₃ concentration exceeded the state standard once during 2008, and no violations occurred during 2006 or 2007. The 8-hour O₃ concentration exceeded both the state and federal standard year during 2008, and the state standard in 2006 and 2007. The daily PM₁₀ concentration exceeded the state standard once in 2006 and twice in 2007, then decreased to one day again in 2008. The federal standard was not exceeded during this period. The federal 24-hour PM_{2.5} standard was violated during once in 2006 and 11 days during 2007, but was not exceeded during 2008. The sharp increase in 2007 was due to the wildfires that occurred in the region in October of that year (SDAPCD 2007). Neither the state nor federal standard for CO or NO₂ was exceeded at any time during 2006-2008. In fact, the federal annual average NO₂ standard has not been exceeded since 1978; the state one-hour standard has not been exceeded since 1988. With one exception during the firestorms of October 2003, the SDAB has not violated the state or federal standards for CO since 1990.

4.2.2 REGULATORY FRAMEWORK

4.2.2.1 Federal

The CAA of 1970 required the EPA to establish NAAQS with states retaining the option to adopt more stringent standards or to include other specific pollutants. Current NAAQS are listed in Table 4.2-2. 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.

Table 4.2-2. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ⁽¹⁾	Federal Standards ⁽²⁾	
		Concentration	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)	0.053 ppm (100 µg/m ³)	Same as Primary Standard
	1 Hour	0.18 ppm (470 mg/m ³)	--	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	--	0.030 ppm (80 µg/m ³)	--
	24 Hour	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³)	--
	3 Hour	--	--	0.5 ppm (1300 µg/m ³)
	1 Hour	0.25 ppm (655 µg/m ³)	--	--
Lead ⁶	30 Day Average	1.5 µg/m ³	--	Same as Primary Standard
	Calendar Quarter	--	1.5 µg/m ³	
	Rolling 3-Month Average ⁷	--	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 ⁶	24 Hour	0.01 ppm (26 µg/m ³)	No Federal Standards	

⁽¹⁾ California standards for O₃, CO, SO₂ (1-hour and 24-hour), NO₂, PM₁₀, 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 O₃, 8-hour O₃, 24-hour PM₁₀, 24-hour PM_{2.5}, and those based on annual averages, are not to be exceeded more than once a year. The one-hour O₃ 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 O₃ 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 PM₁₀ standard is attained when the 3-year average of the 99th percentile 24-hour concentrations is below 150 µg/m³. 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/m³.

⁽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; parts per million (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⁾ The CARB had identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

⁽⁷⁾ National lead standard, rolling 3-month average: final rule signed October 15, 2008.

Source: California Air Resources Board, January 2009.

If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. The EPA classifies the SDAB as in attainment for CO, NO₂, Pb, PM_{2.5}, and SO₂. It is unclassifiable for PM₁₀ with respect to federal air quality standards. Table 4.2-3 lists the attainment status of San Diego County for the criteria pollutants.

Table 4.2-3. San Diego County Attainment Status

Pollutant	Averaging Time	California Standards	Federal Standards
Ozone (O ₃)	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	
Carbon Monoxide (CO)	8 Hour	Attainment	Maintenance Area ⁽²⁾
	1 Hour		
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 (10:00a.m. to 6:00 p.m., PST)	Unclassified	No Federal Standard

⁽¹⁾ Unclassified; indicates data are not sufficient for determining attainment or nonattainment.

⁽²⁾ Maintenance Area (defined by U.S. Department of Transportation) is any geographic region of the United States previously designated nonattainment pursuant to the CAA Amendments of 1990 and subsequently re-designated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAA, as amended.

Source: SDAPCD, Fact Sheet. Data reflects status as of July, 2008.

Although San Diego County had achieved attainment for the federal one-hour O₃ standard in 2003, in 2005 the EPA revoked the federal one-hour O₃ standard. San Diego County was designated a nonattainment area for the eight-hour O₃ NAAQS, effective June 15, 2004, based on O₃ air quality measurements over the 2001-2003 three-year period. At that time, the region's nonattainment status was further categorized by EPA as "Basic," a category of eight-hour O₃ nonattainment areas whose one-hour O₃ design values met the former federal one-hour O₃ NAAQS.

The CAA (and its subsequent amendments) requires each State to prepare an air quality control plan referred to as the SIP. 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.

4.2.2.2 State

The CARB, a part of the California Environmental Protection Agency (Cal EPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California.

The CAA allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. California has adopted ambient standards (the California Ambient Air Quality Standards or CAAQS) that are stricter than the federal standards for six criteria air pollutants. Under the CCAA, patterned after the federal CAA, areas have been designated as attainment, nonattainment or unclassified with respect to the state ambient air quality standards. The CCAA requires that districts design a plan to achieve an annual reduction in district-wide emissions of five percent or more for each nonattainment criteria pollutant or its precursor(s) until attainment of the standard is achieved. These plans include the following: emission control standards that require local districts to stringently control emissions through varying degrees of stationary and mobile source control programs; application of additional control measures if a regional air quality management district or unified APCD contributes to downwind nonattainment areas; cost-effectiveness estimates for all proposed emission control measures; and development and implementation of transportation controls for cities and counties to enforce.

The CARB is the state regulatory agency with the authority to enforce regulations to both achieve and maintain the NAAQS and CAAQS. The CARB is responsible for the development, adoption, and enforcement of the state's motor vehicle emissions programs, as well as the adoption of the CAAQS. The CARB also reviews operations and programs of the local air districts, and requires each air district with jurisdiction over a nonattainment area to develop its own strategy for achieving the NAAQS and CAAQS.

San Diego County is in nonattainment for the CAAQS for O₃, PM₁₀, and PM_{2.5}. The County is designated as an attainment area for the state CO, NO, SO₂, Pb, and sulfates standards. Hydrogen sulfide and visibility-reducing particles are unclassified in San Diego County.

In 2003, the California State Legislature enacted Senate Bill (SB) 656 requiring additional controls to reduce ambient concentrations of PM₁₀ and PM_{2.5}. Pursuant to SB 656, in November 2004 the CARB adopted lists of the most readily available, feasible, and cost-effective statewide and local measures to reduce particulate matter. Statewide measures generally fall under the jurisdiction of the CARB, and regional districts implement local measures.

4.2.2.3 Regional

The SDAPCD has jurisdiction over air quality programs in San Diego County. 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. These stations are used to measure and monitor criteria and toxic air pollutant levels in the ambient air.

Under the requirements of the CCAA, each local air district is required to develop its own strategies to achieve both state and federal air quality standards for its air basin. The SDAPCD developed *The San Diego Air Basin 2009 Regional Air Quality Strategy Revision*. The RAQS was developed pursuant to CCAA requirements and identifies feasible emission control measures to provide progress in San Diego County toward attaining the State O₃ standard. The pollutants addressed are VOCs and NO_x, precursors to the photochemical formation of O₃ (the primary component of smog). The RAQS control measures

focus on emission sources under the SDAPCD's authority, specifically stationary emission sources (such as power plants, manufacturing and industrial facilities) and some area-wide sources (such as water heaters, architectural coatings, and consumer products). However, the emission inventories and emission projections in the RAQS reflect the impact of all emission sources and all control measures, including those under the jurisdiction of the CARB (on-road and off-road motor vehicles) and the EPA (aircraft, ships, and trains). Thus, while legal authority to control various pollution sources is divided among agencies, the District is responsible for reflecting federal, state, and local measures in a single plan to achieve state O₃ standards in San Diego County. The RAQS was initially adopted by the SPAPCD in 1992 and has been updated on a triennial basis, in accordance with State requirements. The latest version of the RAQS was adopted by the SDAPCD in 2009.

Additionally, as mentioned previously, because San Diego County is currently designated a nonattainment area for the eight-hour O₃ NAAQS, the SDAPCD must submit to EPA, through the CARB, an implementation plan as part of the California SIP identifying control measures and associated emission reductions as necessary to demonstrate attainment of the federal eight hour O₃ standard within San Diego County. The SIP is updated on a triennial basis. The CARB adopted its 2007 State Strategy for California's 2007 SIP on September 27, 2007. As part of the State Strategy, the SDAPCD developed its *Eight-Hour Ozone Attainment Plan for San Diego County*, which provides plans for attaining and maintaining the 8-hour NAAQS for O₃ (SDAPCD 2007).

Neither the RAQS nor the SIP addresses emissions of particulate matter. In response to SB 656, the SDAPCD prepared the report, *Measures to Reduce Particulate Matter in San Diego County*, in December 2005. This report includes local measures to control particulates in the SDAB.

4.2.3 IMPACT SIGNIFICANCE CRITERIA

Implementation of the DVSP Update would result in a significant direct impact on air quality if the DVSP Update would:

1. Conflict with or obstruct the implementation of the San Diego RAQS or applicable portions of the SIP;
2. Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation;
3. Result in a cumulatively considerable net increase of PM₁₀ or exceed quantitative thresholds for O₃ precursors, NO_x and VOCs;
4. Expose sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, or day-care centers) to substantial pollutant concentrations; or
5. Create objectionable odors affecting a substantial number of people.

To determine whether a project would: (a) result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation; or (b) result in a cumulatively considerable net increase of PM₁₀ or exceed quantitative thresholds for O₃ precursors, NO_x and VOCs, project emissions may be evaluated based on the quantitative emission thresholds established by the SDAPCD. The SDAPCD does not provide quantitative thresholds for determining the significance of construction or mobile source-related projects. However, the District does specify Air Quality Impact Analysis (AQIA) trigger levels for new or modified stationary sources (SDAPCD Rules 20.2 and 20.3). If these incremental levels are exceeded, an AQIA must be performed. For CEQA purposes, the screening level thresholds can be used to demonstrate that a project's total emissions would not result in a

significant impact to air quality. Because the AQIA screening thresholds do not include VOCs, the screening level for VOCs used in this analysis are from the South Coast Air Quality Management District (SCAQMD), which generally has stricter emissions thresholds than SDAPCD. For PM_{2.5}, the EPA “Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards” published in 2005, which quantifies significant emissions as 10 tons per year, is used as the screening level threshold. The trigger thresholds listed in Table 4.2-4 are used in this analysis to determine whether implementation of the DVSP has the potential to violate an air quality standard or contribute substantially to an existing or projected air quality violation.

Table 4.2-4. SDAPCD Pollutant Thresholds

Pollutant	Pounds Per Hour	Pounds Per Day	Tons Per Year
Carbon monoxide (CO)	100	550	100
Nitrogen Oxides (NO _x)	25	250	40
Respirable Particulate Matter (PM ₁₀)	--	100	15
Fine Particulate Matter (PM _{2.5})	--	55 ⁽¹⁾	10 ⁽¹⁾
Oxides of Sulfur (SO _x)	25	250	40
Lead (Pb)	--	3.2	0.6
Volatile Organic Compounds (VOC)	--	75 ⁽²⁾	13.7 ⁽²⁾

⁽¹⁾ EPA “Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards” published September 2005.

⁽²⁾ Based on VOC threshold from SCAQMD.

Source: SDAPCD Rule 20.2 (d)(2), Table 20.2-1.

SDAPCD Rule 51 (Public Nuisance) prohibits emission of any material which causes nuisance to a considerable number of persons or endangers the comfort, health or safety of any person. The rule states that a person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public; which endanger the comfort, repose, health or safety of any such persons or the public; or which cause or have a natural tendency to cause injury or damage to business or property. The provisions of the rule do not apply to odors emanating from agricultural operations in the growing of crops or raising of fowls or animals (SDAPCD 2009). A project that proposes a use which would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of off-site receptors.

4.2.4 METHOD OF ANALYSIS

The section below gives full consideration to the development of the SPA and acknowledges the physical changes to the existing setting that would occur from implementation of the proposed project. This section of the PEIR is based on the *Air Quality Technical Report for the Downtown Vista Specific Plan Update* prepared by PBS&J in August 2009. Refer to the report, included as Appendix B of this PEIR, for detailed methodology. The DVSP Update’s consistency with the RAQS was determined by comparing the DVSP Update to growth projected for the SPA by SANDAG. Air pollutant emissions during construction were estimated using the Urban Emissions (URBEMIS) 2007 model and compared to the adopted air quality standards. The California Line Source (CALINE 4) model was used to estimate the potential CO impact. Toxic air contaminant (TAC) risk was determined based on the SCAQMD’s “Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling

Emissions for CEQA Air Quality Analysis” (SCAQMD 2003). Odor impacts were determined based on the CARB’s Air Quality and Land Use Handbook.

4.2.5 PROJECT IMPACTS AND MITIGATION

4.2.5.1 Issue 1 – Consistency with the RAQS

Would implementation of the DVSP Update result in a conflict with or obstruct implementation of the San Diego RAQS or applicable portions of the SIP?

IMPACT ANALYSIS

The California SIP is the document that sets forth the state’s strategies for achieving federal air quality standards. The SDAPCD is the agency responsible for preparing and implementing the portion of the California SIP applicable to the SDAB for attainment of the NAAQS for O₃. The RAQS outlines SDAPCD’s plans and control measures designed to attain the State air quality standards for O₃. Both documents were developed in conjunction with each other by the SDAPCD to reduce regional O₃ emissions.

The SDAPCD relies on information from CARB and SANDAG, including projected growth in the county, mobile, area and all other source emissions in order to project 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 cities and by the County. 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 current RAQS is based, in part, on the projections included in the existing General Plan and SP #26, which projected the development of 1,472 dwelling units in an area approximately 261 acres in extent by the year 2030. The proposed DVSP Update would expand the current SPA to 352 acres (275 net acres without the inclusion of right-of-way) to accommodate up to 1,675 dwelling units, which is an increase of 203 dwelling units and 56 gross acres over the existing plan. Although the proposed DVSP Update would increase the build-out capacity within the Downtown Vista planning area, the overall increase in housing units and corresponding population represents an incremental difference compared to the existing projections for the City. As shown in Table 4.2-5, under the existing Specific Plan #26, build-out of the plan in the year 2030 would account for approximately 4.2 percent of total dwelling units and 4.3 percent of the total population projected in the City. Under build-out of the proposed DVSP Update, development in the SPA would account for approximately 4.8 percent of the total dwellings units and 4.8 percent of the total projected population. Build-out of the DVSP Update represents a difference of less than one percent compared to projected growth as a result of build-out of SP #26, which is included in the existing SANDAG projections for the City. Therefore, although the DVSP Update would incrementally increase the housing capacity in the downtown area, the overall growth for the region remains consistent with SANDAG’s citywide projections. In addition, although the proposed DVSP Update proposes a greater number of dwelling units, the extent of the proposed DVSP area is approximately 57 acres (gross) larger than the current SPA. If the planning areas are compared over an equivalent acreage of land, the number of units included in the DVSP Update may actually be smaller in comparison to the existing and/or proposed build-out number of residential units.

Table 4.2-5. Growth Projections for the SPA

	City of Vista (SANDAG)	Existing Downtown SP #26		Proposed DVSP Update		Percent Difference between Existing and Proposed Plans
		SPA Total	Percent of Citywide Total	SPA Total	Percent of Citywide Total	
Projected Housing Units (2030)	34,947 units	1,472	4.2%	1,675	4.8%	+ 0.6%
Projected Population (2030)	115,768	4,813*	4.3%	5,528 ⁽¹⁾	4.8%	+0.5%

SPA = Specific Plan Area.

⁽¹⁾ Based on a persons per household ratio of 3.3, as projected by SANDAG for the year 2030

Source: City of Vista, 1999; SANDAG, 2008

Additionally, the DVSP Update accommodates compact, mixed-use development that would place residents in close proximity to commercial, municipal, and recreational land uses and would reduce vehicle trips, which would result in fewer vehicular emissions compared to more traditional single-family residential developments. The SPA also includes the Vista Transit Center, with Sprinter light rail and Breeze bus service, and a second Sprinter station on Escondido Avenue. The DVSP Update encourages future development to be highly walkable and transit-oriented, which would further reduce vehicle trips compared to typical commercial and residential development. Therefore, implementation of the DVSP Update would be consistent with the SANDAG growth projections and would not conflict with RAQS or the SIP.

SIGNIFICANCE OF IMPACT

Implementation of the DVSP Update would be consistent with the SANDAG growth projections and would not conflict with RAQS or the SIP. Impacts would be less than significant.

MITIGATION MEASURES

Implementation of the DVSP Update would not result in a significant impact associated with a conflict with the RAQS or the SIP. Therefore, no mitigation is required.

4.2.5.2 Issues 2 and 3 – Consistency with Air Quality Standards

Would implementation of the DVSP Update result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Would implementation of the DVSP Update result in a cumulatively considerable net increase of PM₁₀ or exceed quantitative thresholds for O₃ precursors, NO_x and VOCs?

IMPACT ANALYSIS

Implementation of the DVSP 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 for redevelopment, and construction of infrastructure improvements to support new land uses. Operational emissions include those associated with traffic generated by new development in the SPA and operation of accommodated land uses, including residential, commercial, retail, office, and civic development.

Pollutant Emissions from Construction Activities

Construction activities would result in temporary increases in air pollutant emissions. These emissions would be generated in the forms 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 URBEMIS 2007 model. For the purposes of modeling a worst-case construction scenario, it was assumed that development associated with the DVSP Update build-out would take place over a 20-year period, with an equal amount of construction occurring each year. At full build-out (2030), a total of 1,675 residential units and 2,624,854 SF of commercial/office development could be accommodated within the SPA. This total represents a worst-case estimate of construction, as the total capacity includes existing development that would likely remain in the SPA. Model defaults were used to estimate emissions associated with construction equipment. Construction emission estimates include the dust control measures specified in the City Grading and Erosion Ordinance (Ordinance 2002-25, Section 17.56.330(e)), which requires all graded surfaces and materials whether filled, excavated, transported, or stockpiled to be watered, protected, or contained in such a manner as to reduce or minimize nuisance from dust or spillage upon adjoining property or streets. All model inputs and outputs are provided in Appendix B. Table 4.2-6 presents a summary of estimated maximum daily air pollutant emissions for each construction phase associated with the project.

Table 4.2-6. 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	32	6	86	0	85	20
Mass Grading ⁽¹⁾	14	3	25	0	34	8
Fine Grading ⁽¹⁾	14	3	25	0	34	8
Trenching	9	2	18	0	1	1
Building	29	4	20	0	1	1
Paving	12	3	17	0	1	1
Architectural Coating ⁽²⁾	3	69	0	0	0	0
Significance Threshold	550	75	250	250	100	55
Significant Impact?	No	No	No	No	No	No

⁽¹⁾ Includes dust stabilization measures.

⁽²⁾ Includes use of low VOC coatings.

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

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

The estimate of construction emissions indicates that the project would contribute amounts below the significance thresholds for all phases of construction; therefore, impacts would be less than significant.

Pollutant Emissions from Project Operations

Project operational emissions of air pollutants would result from stationary and vehicular sources, as described below. Build-out of the DVSP Update would accommodate an additional 1,270 residential units and 1,866,737 SF of non-residential development (commercial and office uses) compared to existing development, for a total of 1,675 dwelling units and 2,624,854 SF of non-residential development. The

CARB's URBEMIS 2007 air quality model was used to estimate operational emissions associated with area and vehicular sources. Traffic volumes associated with the DVSP Update were based on the traffic study prepared for the project by RBF Consulting (2009). The net change in emissions was calculated by subtracting the emissions associated with existing development from the total emissions associated with full build-out of the DVSP Update. The net increase in estimated operational air pollutant emissions from build-out of the DVSP Update is shown in Table 4.2-7.

Area Sources

Area sources of air pollutant emissions associated with the DVSP 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.

Vehicular Sources

Increased volumes of vehicles associated with the operation of build-out of the DVSP Update would contribute to regional emissions of NO_x, VOC, CO, SO_x, PM_{2.5} and PM₁₀. Criteria pollutant emissions were calculated using URBEMIS 2007 model based on vehicular trips included in the traffic analysis data for the DVSP Update (RBF Consultants 2009). Model inputs and outputs are detailed in Appendix B. As shown in Table 4.2-7, the vehicular sources are the largest source of pollutant emissions.

Table 4.2-7. Operational Daily Maximum Air Pollutant Emissions – DVSP Update Build-out

Emission Source	Maximum Daily Emissions (pounds/day)					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Area Sources						
Natural Gas	5	67	51	0	0	0
Landscape	0	0	6	0	0	0
Consumer Products	82	0	0	0	0	0
Architectural Coatings ⁽¹⁾	40	0	0	0	0	0
Vehicular Sources ⁽²⁾	347	358	3,655	9	1,741	332
Total DVSP Update Build-out	475	425	3,712	9	1,741	332
<i>Existing Build-out</i>	<i>114</i>	<i>102</i>	<i>945</i>	<i>2</i>	<i>446</i>	<i>85</i>
Net Increase from Baseline	361	323	2,767	7	1,296	247
Significance Threshold	75	250	550	250	100	55
Significant Impact?	Yes	Yes	Yes	No	Yes	Yes

⁽¹⁾ Includes the use of low VOC coatings.

⁽²⁾ Includes the incorporation of the following features: mix of uses, local serving retail, transit service, and bike/pedestrian facilities.

Emission quantities are rounded to the nearest whole number. As such, the total amounts shown may not add up exactly. Exact values are provided in Appendix B.

Source: URBEMIS 2007, version 9.2.4.

Total Operational Emissions

As shown in Table 4.2-7, operational emissions from full build-out of the DVSP Update would exceed the significance thresholds for maximum daily emissions for VOCs, NO_x, CO, PM₁₀ and PM_{2.5}. Therefore, implementation of the DVSP Update would violate air quality standards and would exceed quantitative thresholds for NO_x and VOCs. Additionally, the SDAB is currently in non-attainment for PM₁₀. As a result, implementation of the DVSP Update would result in a cumulatively considerable net

increase of PM₁₀. Therefore, potential air quality impacts associated with operation of the project are significant and mitigation is required.

SIGNIFICANCE OF IMPACT

Operational emissions from full build-out of the DVSP Update would exceed the significance thresholds for maximum daily emissions for VOCs, NO_x, CO, PM₁₀ and PM_{2.5}. Therefore, air quality impacts are significant.

MITIGATION MEASURES

Measures for construction are based in part on the City's Grading and Erosion Ordinance (2002-25). In addition, DVSP Update General Operating Standard C, Air Pollution, requires sources of air pollution to comply with the rules established by the EPA and the CARB. The standard states that no person shall operate a regulated source of air pollution without a valid operative permit issued by the designated regulatory agency. General Operating Standard D, Exhaust Emissions, requires that construction-related and business activities minimize exhaust emissions by maintaining equipment in good operating condition and in proper tune in compliance with manufacturer's specifications.

In addition to these operating standards, implementation of mitigation measures *Air-1* through *Air-7* would minimize criteria pollutant emissions from construction and operation. Table 4.2-8 includes an estimate of the reduction in emissions with the mitigation measures listed below. This estimate is a conservative calculation as the pollutant reductions for some measures is not quantifiable in the URBEMIS model. As shown in the table, even with the incorporation of all feasible mitigation measures, operational air pollutant emissions remain in exceedence of the significance thresholds; therefore, emissions are significant and unavoidable.

Table 4.2-8. Mitigated Operational Daily Maximum Air Pollutant Emissions – DVSP Build-out

Emission Source	Maximum Daily Emissions (pounds/day)					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Total DVSP Update Build-out ⁽¹⁾	475	425	3,712	9	1,741	332
Mitigated DVSP Update Build-out ⁽²⁾	459	395	3,532	9	1,661	317
Reduction	3%	7%	5%	0%	5%	5%
<i>Existing Build-out</i>	<i>114</i>	<i>102</i>	<i>945</i>	<i>2</i>	<i>446</i>	<i>85</i>
Net Increase from Baseline	345	293	2,587	7	1,215	232
Significance Threshold	75	250	550	250	100	55
<i>Significant Impact?</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>

⁽¹⁾ Includes the following project features: low VOC coatings, mix of uses, local serving retail, transit service, and bike/pedestrian facilities.

⁽²⁾ Includes the following mitigation measures: energy efficiency beyond Title 24, parking fee for non-residential uses, 10% employee participation in telecommuting program, 10% employee participation in 9/80 work schedule, carpool/vanpool program, car-sharing services provided, preferential carpool/vanpool parking, and information on transportation alternatives.

Emission quantities are rounded to the nearest whole number. As such, the total amounts shown may not add up exactly. Exact values are provided in Appendix B.

Source: URBEMIS 2007, version 9.2.4.

Air-1 During grading activities for any future development in the SPA, the on-site construction superintendent shall ensure implementation of standard best management practices (BMPs) to reduce the emission of fugitive dust, including but not limited to the following actions:

- 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 on-site construction superintendent.
- Graded areas on slopes will provide temporary hydroseeding and irrigation of cleared vegetation and graded slopes as soon as possible following grading activities in areas that will remain in disturbed condition (but will not be subject to further construction activities) for a period greater than three months during the construction phase.
- Pave or periodically water all on-site access points or apply chemical stabilizer to construction sites.
- Securely cover all transported material to prevent fugitive dust.
- Operate all vehicles on the construction site at speeds less than 15 miles per hour.
- Cover all stockpiles that will not be utilized within three days with plastic or equivalent material, to be determined by the on-site construction superintendent, or spray them with a non-toxic chemical stabilizer.

Air-2 The following measures shall be implemented throughout construction to minimize emissions of O₃ precursors (NO_x and VOCs):

- Turn off all diesel-powered vehicles and gasoline-powered equipment when not in use for more than five minutes.
- Use electric or natural gas-powered construction equipment in lieu of gasoline or diesel-powered engines, where feasible.
- Require 10 percent of construction fleet to use any combination of diesel catalytic converters, diesel oxidation catalysts, diesel particulate filters, and/or CARB-certified Tier III equipment or better.
- Support and encourage ridesharing and transit incentives for the construction crew.

Air-3 The following measures would ensure that architectural coatings comply with SDAPCD Rule 67:

- Use pre-coated/natural colored building materials.
- Use water-based or low VOC coatings with a VOC content of 100 grams per liter or less.
- Use spray equipment with high transfer efficiency, such as the electrostatic spray gun method or apply coatings using manual tools, such as paint brushes, hand rollers, trowels, spatulas, daubers, rags, or sponges.

Air-4 Prior to demolition or renovation of any buildings constructed prior to 1980 or otherwise having the potential to contain ACM, a survey shall be conducted by a licensed asbestos-abatement contractor to determine presence of ACM. The SDAPCD shall be notified at least 10 days prior to any activity which may dislodge ACM in accordance with SDAPCD Rule 361.145 and demolition or renovation of structures which may contain ACM must be handled and disposed of in accordance with SDAPCD Rules 361.140-361.156.

Air-5 Prior to issuance of a building permit for any future project under the DVSP Update, the project applicant shall identify and submit building plans that identify design features to reduce

operational emissions associated with vehicular traffic. Such design features may include, but not be limited to:

- Projects within one-quarter mile of a transit facility, including Sprinter stations and bus stops, shall enhance existing or construct new pedestrian and bicycle facilities to provide safe and efficient access to the transit services.
- Projects located within one-half mile of an existing/planned Class I or Class II bike lane shall include a comparable network that connects the project uses to the existing off-site facility. Project design shall include a designated bicycle route connecting all units, on-site bicycle parking facilities, off-site bicycle facilities, site entrances, and primary building entrances to existing Class I or Class II bike lane(s) within one half mile, as feasible.
- Nonresidential projects shall provide “end-of-trip” facilities including showers, lockers, and changing space. At a minimum, project will provide four clothes lockers and one shower provided for every 80 employee parking spaces, including separate facilities for each gender for projects with 160 or more employee parking spaces.
- Bicycle racks that are accessible from the street and the pedestrian routes. At a minimum, one bike rack space shall be provided per 20 vehicle parking spaces.
- Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.
- Other transportation demand features for commercial uses may include parking fees employee telecommuting programs, flexible employee work schedules, carpool/vanpool programs, car-sharing services, preferential carpool/vanpool parking, and information on transportation alternatives provided to employees.

Air-6 Prior to the issuance of building permits, the applicant shall demonstrate that the project shall exceed the requirements of Title 24 of the California Energy Efficiency Standards for Residential and Non-residential Buildings. These requirements, along with the following measures, shall be incorporated into future development projects to reduce indirect emissions from energy use in the SPA, including O₃ precursors:

- Use of low-NOx emission water heaters
- Installation of energy efficient and automated air conditioners where applicable
- Energy efficient parking area lights
- Exterior windows shall be double-paned

Air-7 An AQIA shall be prepared for projects within the DVSP Update planning area for projects that exceed one of the following screening criteria:

- Single family residential: 300 dwelling units (DU)
- Apartments (6-20 DU/acre): 370 DU
- Apartments (greater than 20 DU/acre): 420 DU
- Condominiums: 370 DU
- Supermarket: 25,000 SF
- Restaurant, fast food: 6,500 SF
- Restaurant, sit down: 43,000 SF
- Hotel/Motel: 480 rooms

- Standard commercial office: 190,000 SF
- Neighborhood shopping center: 35,000 SF

For projects that include mixed uses, the AQIA trigger threshold would be determined by converting the various uses to equivalent single-family units using the conversion factors found within Table 5 of the San Diego County Report Format and Content Requirements, Air Quality (San Diego County 2007).

4.2.5.3 Issue 4 – Sensitive Receptors

Would implementation of the DVSP Update expose sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, or day-care centers) to substantial pollutant concentrations?

IMPACT ANALYSIS

Air quality regulators typically define sensitive receptors as schools (preschool-12th grade), hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely affected by changes in air quality. The two primary emissions of concern regarding health effects for land development projects are CO and diesel-fired particulates.

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 parts per million (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 study evaluated 10 intersections in the project vicinity that would carry the majority of project traffic. These intersections were evaluated under 2030 future conditions with and without full build-out of the DVSP Update. According to the traffic study, eight out of the 10 intersections would operate at a LOS E or F during at least one peak hour under future conditions. To estimate the most conservative and congested condition for the hot spot analysis, CO concentrations were analyzed at the three intersections that would result in a significant traffic impact under DVSP Update full build-out conditions, and the two intersections that would experience the greatest amount of delay under future conditions. These five intersections are:

- Santa Fe Avenue/Guajome Street – LOS F (AM and PM Peak Hours)
- Vale Terrace/Vista Way – LOS E (AM and PM Peak Hours)
- Escondido Avenue/Postal Way – LOS E (PM Peak Hour)
- Santa Fe Avenue/E. Broadway – LOS F (AM and PM Peak Hours)
- Santa Fe Avenue/Pala Vista Drive – LOS F (AM and PM Peak Hours)

The CALINE 4 model was used to estimate the potential CO impact at the above intersections during the most congested peak hour. Model inputs outputs all included in Appendix B. CO emission factors were generated using the EMFAC 2007 model. Table 4.2-9 displays the estimated CO concentrations at the affected intersections.

Table 4.2-9. Estimated CO Concentrations

Intersection	1-Hour CO Concentration (ppm)	8-Hour CO Concentration (ppm) ⁽¹⁾	Impact?
Santa Fe Avenue/Guajome Street	4.1	2.9	No
Vale Terrace/Vista Way	4.3	3.0	No
Escondido Avenue/Postal Way	4.2	2.9	No
Santa Fe Avenue/E. Broadway	4.1	2.9	No
Santa Fe Avenue/Pala Vista Drive	4.1	2.9	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, 2009

The highest estimated one-hour CO concentration is 4.3 ppm at the Vale Terrace/Vista Way intersection. This would not exceed the California one-hour standard of 20 ppm or the federal one-hour standard of 35 ppm. Based on an urban persistence factor of 0.7 (for an urban area), the maximum cumulative 8-hour CO concentration at the intersection would be 3.0 ppm, which is below the 9 ppm California and federal 8-hour standard. No other intersections would result in an exceedance of either the state or federal CO standards. Therefore, potential CO impacts are less than significant.

Toxic Air Contaminants

According to the San Diego County Guidelines, for typical land use projects that do not propose stationary sources of emissions regulated by SDAPCD, diesel-fired particulates are the primary TAC of concern. Based on the SCAQMD's "Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis" (SCAQMD 2003), projects that should be analyzed for diesel particulate emissions include truck stops, distribution centers, and transit centers, which could be sources of diesel particulate matter from heavy-duty diesel trucks.

Since the DVSP Update includes commercial, residential, and municipal land uses that typically do not include stationary sources of emission regulation by the SDAPCD, the primary source of diesel PM would be construction equipment. As shown in Table 4.2-6, implementation of the DVSP Update would not result in significant PM during construction. Additionally, because diesel PM is considered to have long-term health effects and construction would be a short-term event, emissions would not result in a significant long-term health risk to surrounding receptors.

The residential and retail developments proposed within the SPA would not attract a disproportionate amount of diesel trucks and would not be considered a source of TAC emissions. Two potential sources of diesel PM within the SPA would be delivery trucks and transit buses. In 2004, the CARB adopted an Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel PM 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 on-site sources of diesel PM would be minimal since only a limited number of heavy-duty trucks would access the SPA, and the trucks that would frequent the area would not idle for extended periods of time.

Transit buses would be used throughout the SPA, and use of mass transit is encouraged. The majority of buses in the City are operated by the NCTD (the "Breeze" transit line). However, according to the NCTD, the entire

Breeze bus fleet is fueled with compressed natural gas (CNG), and therefore would not contribute to diesel particulate emissions.

Based on CARB siting recommendations within the Air Quality and Land Use Handbook, a detailed health risk assessment should be conducted for proposed sensitive receptors within 1,000 feet of a warehouse distribution center, within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater), 50 feet of a typical gas dispensing facilities or within 300 feet of a dry cleaning facility that uses perchloroethylene (PCE), among other siting recommendations (CARB 2005). Although the SPA would include primarily residential and commercial uses, the proposed allowed land uses may allow the development of gas stations and dry cleaning facilities, as these are common uses within mixed-use development. Therefore, impacts to sensitive receptors may be potentially significant.

With regard to off-site sources of TAC affecting proposed sensitive receptors, the CARB recommends that any receptors proposed within 500 feet of a highway to prepare a health risk assessment. The closest freeway to the SPA is SR-78. However, the closest areas along the western boundary of the SPA to SR-78 are greater than 500 feet from the freeway. Therefore, impacts associated with TACs from freeways would be less than significant.

SIGNIFICANCE OF IMPACT

The DVSP Update would have the potential to allow the development of gas stations and dry cleaning facilities near sensitive receptors. Therefore, impacts would be potentially significant.

MITIGATION MEASURES

Implementation of measure *Air-8* would reduce the potentially significant impact associated with TACs within the SPA to a less than significant level.

Air-8 Development proposed under the DVSP Update shall use the recommendations set forth in Table 1-1 of the CARB's Land Use and Air Quality Handbook (CARB 2005) as a guideline for siting sensitive land uses. 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:

- Avoid siting new sensitive uses within 300 feet of any dry cleaning operation that uses perchloroethylene. For operations with two or more machines, provide 500 feet separation. 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.
- 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 for standard gas dispensing facilities.

4.2.5.4 Issue 5 – Odors

Would the proposal create objectionable odors affecting a substantial number of people?

IMPACT ANALYSIS

Construction associated with implementation of the DVSP Update could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. However, construction equipment would be operating at various locations throughout the SPA and would not take place all at once. Therefore, construction-related operations near existing receptors would be temporary in nature and construction activities would not be likely to result in nuisance odors that would violate APCD Rule 51. Impacts would be less than 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, petroleum refineries, and livestock operations. The DVSP accommodates the construction of commercial, recreational, and residential land uses, as well as municipal buildings such as City Hall and a library. These land uses do not typically result in a source of nuisance odors associated with operation. Additionally, the DVSP Update includes General Operating Standards for outdoor uses. Section 3.5.2(e) of Section 3.0 of the DVSP Update, the Area-wide Design and Development Guidelines, prohibits noxious odorous emissions from a substance or in a volume that is detrimental to or endangers the public health, safety, comfort or welfare. Any such emission shall be modified to prevent further emissions release. Therefore, odors would not be considered a nuisance under APCD Rule 51 and odor impacts would be less than significant.

SIGNIFICANCE OF IMPACT

Implementation of the DVSP Update would not create objectionable odors affecting a substantial number of people. Impacts would be less than significant.

MITIGATION MEASURES

Implementation of the DVSP Update would not result in a significant impact associated with odors. Therefore, no mitigation is required.

4.2.6 CUMULATIVE IMPACTS

4.2.6.1 Conflicts with the RAQS

As indicated in Table 4.0-1 of this PEIR impacts relative to consistency with applicable air quality plans are generally limited to the SPA. The cumulative projects identified in Table 4.0-2 that would be located within or adjacent to the SPA would include the Cypress Drive Subdivision, the S. Santa Fe Commercial Center, the Escondido Avenue Commercial Center, Common Grounds Café, Vista Village Drive Mixed Use, and Sonic Burger projects. The cumulative projects would be consistent with the RAQS and the SIP if they would propose development that is consistent with the growth anticipated by SANDAG. As shown in Table 4.2-5, the overall increase in housing units and corresponding population proposed by the DVSP Update represents a difference of less than one percent over the existing SANDAG projections for the City compared to the existing SP #26. Of the cumulative projects in the SPA, only the Cypress Drive Subdivision and Vista Village Drive Mixed Use projects would have the potential to increase the number of dwelling units in the SPA. The number of dwelling units associated with each project is currently unknown; however, it is unlikely that implementation of these projects, in combination with

implementation of the DVSP Update would result in overall increase in housing units and corresponding population more than one percent over the existing SANDAG projections for the City compared to the existing SP #26. Therefore, implementation of the DVSP Update and the cumulative projects within the SPA would be consistent with the SANDAG growth projections and would not conflict with RAQS or the SIP. A significant cumulative impact would not occur.

4.2.6.2 Violations of Air Quality Standards

As indicated in Table 4.0-1 of this PEIR, the geographic context for the analysis of cumulative impacts relative to violations of air quality standards encompasses the SDAB. The SDAB is currently in non-attainment for PM₁₀, and PM_{2.5}, and O₃. The cumulative projects listed in Table 4.0-2 would have the potential to result in emissions of PM₁₀, and PM_{2.5}, and O₃ during construction and operation. Therefore, a potentially significant cumulative impact would occur.

PM₁₀ and PM_{2.5} emissions associated with construction generally result in near-field impacts. As shown in the project emissions evaluation, the emissions of PM₁₀ and PM_{2.5} during construction would be below the significance levels. It is unlikely that all construction associated with the DVSP Update and other cumulative projects would be occurring at the same time. Additionally, it is unlikely that construction projects associated with the DVSP Update and those associated with cumulative projects would take place adjacent to each other. Therefore, project construction is not anticipated to result in a cumulatively significant impact related to particulate matter emissions. However, operation of future development under the DVSP Update would have the potential to result in significant levels of particulate matter emissions from vehicular sources. Therefore, project operation would result in cumulatively considerable particulate matter emissions.

With regard to cumulative impacts associated with O₃ precursors, in general, if a project is consistent with the community and general plans, it has been accounted for in the O₃ attainment demonstration contained within the SIP and would not cause a cumulatively significant impact on the ambient air quality for O₃. As described in Section 4.2.5.1, the DVSP Update is consistent with SANDAG growth projections for the City. Additionally, the DVSP Update accommodates compact, mixed use development that would place residents in close proximity to commercial, municipal, and recreational land uses and would reduce vehicle trips, which would result in fewer vehicular emissions compared to typical residential developments. The DVSP Update also includes the Vista Transit Center, with Sprinter light rail and Breeze bus service, and a second Sprinter station on Escondido Avenue. The DVSP Update encourages future development to be highly walkable and transit-oriented, which would further reduce vehicle trips compared to typical commercial and residential development. Therefore, the DVSP Update would be consistent with goals set forth by the SDAPCD within the RAQS and SIP. However, as shown in Section 4.2.5.2, operation of future development under the DVSP Update would exceed the screening level thresholds for criteria pollutants established by the SDAPCD. Since the project would result in a significant and unavoidable impact associated with O₃ precursors, the project's contribution to the regional air quality impacts would be considered cumulatively considerable. Implementation of mitigation measures *Air-1* through *Air-7* for operational emissions associated with operation of future projects under the DVSP Update would reduce air pollutant emissions to the extent feasible; however, impacts would remain cumulatively considerable and unavoidable.

4.2.6.3 Sensitive Receptors

As indicated in Table 4.0-1 of this PEIR, impacts relative to TACs are generally limited to the SPA or projects along the boundary of the SPA. The cumulative projects identified in Table 4.0-2 that would be located within or adjacent to the SPA would include the Cypress Drive Subdivision, the S. Santa Fe

Commercial Center, the Escondido Avenue Commercial Center, Common Grounds Café, Vista Village Drive Mixed Use, and Sonic Burger projects. These land use projects do not propose stationary sources of emissions regulated by SDAPCD; therefore, diesel-fired particulates are the primary TAC of concern. Since cumulative projects in the SPA propose commercial and residential land uses that typically do not include stationary sources of emissions regulated by the SDAPCD, the primary source of diesel PM would be construction equipment. As described above in the discussion of cumulative air quality standard impacts, implementation of the DVSP Update and cumulative projects would not result in significant cumulative impacts related to PM emissions during construction. Additionally, because diesel PM are considered to have long-term health effects and construction would be short-term event, emissions would not result in a significant long-term health risk to surrounding receptors. With regards to diesel trucks that would make deliveries to the proposed commercial developments, the CARB has adopted an ATCM that would limit heavy-duty diesel motor vehicle idling and reduces public exposure to diesel PM and other TACs and their pollutants. The cumulative projects would be required to comply with this measure. Therefore, a significant cumulative impact related to diesel PM would not occur. However, a mixed-use project such as the Escondido Avenue Commercial Center may allow the development of gas stations and dry cleaning facilities, as these are common uses within mixed-use development near residential developments. Therefore, cumulative impacts to sensitive receptors may be potentially significant. Implementation of the DVSP Update would result in potentially significant impacts to sensitive receptors related to TAC emissions in mixed use areas; however, implementation of mitigation measure *Air-8* would reduce impacts to below a significant level. Implementation of the DVSP Update would not result in a cumulatively considerable contribution to a significant cumulative impact.

As indicated in Table 4.0-1 of this PEIR, the geographic context for the analysis of cumulative impacts relative to exposure of sensitive receptors (e.g., residences, commercial developments, schools, hospitals) to CO “hot spots” includes the full range of cumulative projects listed in Table 4.0-2. It is assumed that traffic volumes from some of these projects may contribute to CO emissions at some of the eight intersections projected to operate below LOS E (refer above to Section 4.2.5.3). Some of the cumulative projects in Table 4.0-2 may not contribute any traffic volumes to certain intersections in Table 4.2-9, but it is beyond the scope of this analysis to identify the traffic volumes contributed from each of the cumulative projects at the affected intersections. Thus, all of the cumulative projects listed in Table 4.0-2 are considered to comprise the cumulative impact study area for this analysis. As indicated in Table 4.2-9, the background CO concentrations at the affected intersections are less than the NAAQS and CAAQS for CO with implementation of the DVSP Update and the cumulative projects. Therefore, the baseline cumulative impact to sensitive receptors exposed to CO “hot spots” in the local cumulative impact area is less than significant.

4.2.6.4 Odors

As indicated in Table 4.0-1 of this PEIR, impacts relative to objectionable odors are generally limited to the SPA. The cumulative projects identified in Table 4.0-2 that would be located within or adjacent to the SPA would include the Cypress Drive Subdivision, the S. Santa Fe Commercial Center, the Escondido Avenue Commercial Center, Common Grounds Café, Vista Village Drive Mixed Use, and Sonic Burger projects. The cumulative projects do not propose any typical sources of odor complaints such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. Similar to the DVSP Update, the commercial and residential land uses proposed by the cumulative projects do not typically result in a source of nuisance odors associated with operation. Therefore, a significant cumulative impact would not occur.

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