4.3 AIR QUALITY

This chapter of the Draft EIR describes existing conditions in the Project vicinity and evaluates the potential impacts of the proposed Project related to criteria air pollutants, toxic air contaminants (TACs), and odors. Air Quality modeling is included in Appendix D.

A. Environmental Setting

1. San Joaquin Valley Air Basin

The City of Tracy (City) is located in the northern portion of the San Joaquin Valley Air Basin (SJVAB or basin), which is managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The boundaries of the SJVAB are defined as the San Joaquin Valley within the Sierra Nevada Mountains to the east, the Coast Ranges in the west, and the Tehachapi mountains in the south. Regional topography and meteorology affect the dispersion of air pollutants.

a. Meteorology

The pollution potential within the SJVAB is very high. The surrounding elevated terrain in conjunction with temperature inversions frequently restrict the lateral and vertical dilution of pollutants. Abundant sunshine and warm temperatures in late spring, summer, and early fall are ideal conditions for the formation of ozone, where the valley frequently experiences unhealthy air pollution days.

The San Joaquin Valley is flat with a slight downward gradient to the northwest. The valley opens to the ocean at the Carquinez Straits where the San Joaquin-Sacramento Delta empties into San Francisco Bay. The San Joaquin Valley, thus, could be considered a “bowl” with the primary opening to the north. The surrounding topographic features restrict air movement through and out of the basin and, as a result, impede the dispersion of air pollutants from the basin. Wind flow is usually down the valley from the north, but the Tehachapi Mountains block or restrict the southward progression of airflow. The Sierra Nevada is a substantial barrier from the usual winds that have a general westerly flow. The topographical features result in weak airflow.

b. Temperature and Precipitation

The inland Mediterranean climate of the Project area is characterized by hot dry summers and cool, mild winters. Clear days are common from spring through fall. Climate is temperate, with an average annual high of 75 degrees and an average low of 47 degrees. Rainfall totals can vary widely over a short distance with windward mountain areas west of Tracy averaging over 24 inches of rain and shadow areas, such as the City proper, averaging about 10 inches annually. During stormy periods, horizontal and vertical air movement ensures rapid pollutant dispersal. Rain also washes out particulate and other pollutants. Conversely, during calm periods, pollutant levels can build up to unhealthful levels. Radiation fog is common in the winter, and may persist for days. Partly to mostly cloudy days are common in winter, as most precipitation received in the Valley falls from November through April.

c. Wind Patterns

Winds are predominantly up-valley (flowing from the north) in all seasons, but more so in the summer and spring months.[1] In this flow, winds are usually from the north end of the valley and flow in a south-southeasterly direction, through Tehachapi Pass, into the Southeast Desert Air Basin. Annually, up-valley wind flow (i.e. northwest flow with marine air) is most common, occurring about 40 percent of the time. This type of flow is usually trapped below marine and subsidence inversions, restricting outflow through the Sierra Nevada and Tehachapi Mountains. The occurrence of this wind flow is almost 70 percent of the time in summer, but less than 20 percent of the time in winter. Winter and fall are characterized by mostly light and variable wind flow. Pacific storm systems do bring southerly flows to the valley during late fall and winter. Light and variable winds, less than 10 mph, are common in the colder months.

Superimposed on this seasonal regime is the diurnal wind cycle. In the valley, this cycle takes the form of a combination of a modified sea breeze-land

[1] California Air Resources Board (CARB). 1984. California Surface Wind Climatology. June.

breeze and mountain-valley regimes. The sea breeze-land breeze regime typically has a modified sea breeze flowing into the valley from the north during the late day and evening and then a land breeze flowing out of the valley late at night and early in the morning. The mountain-valley regime has an upslope (mountain) flow during the day and a down slope (valley) flow at night. These effects create a complexity of regional wind flow and pollutant transport within the valley.

d. Inversions

Air flow in the SJVAB is also restricted vertically by inversion layers that are common in the San Joaquin Valley air basin throughout the year. An inversion layer is created when a mass of warm dry air sits over cooler air near the ground, preventing vertical dispersion of pollutants from the air mass below. During the summer, the San Joaquin Valley experiences daytime temperature inversions at elevations from 2,000 to 2,500 feet above the valley floor. Airflow is considerably restricted since mountain ranges surrounding the valley are generally above the inversion. These inversions lead to a buildup of ozone and ozone precursor pollutants. During the fall and winter months, strong surface-based inversions occur from 500 to 1,000 feet above the valley floor.[2] Wintertime inversions trap very stable air near the surface and lead primarily to a buildup of particulate matter air pollutants. Very light winds are also characteristic with these wintertime surface-based inversions.

2. Federal and State Air Pollutants of Concern

A substance in the air that can cause harm to humans and the environment is known as an air pollutant. Pollutants can be in the form of solid particles, liquid droplets, or gases. In addition, they may be natural or man-made. Pollutants can be classified as primary or secondary. Usually, primary pollutants are directly emitted from a process, such as ash from a volcanic eruption, carbon monoxide gas from a motor vehicle exhaust or sulfur dioxide released

[2] San Joaquin Valley Air Pollution Control District (SJVAPCD). 2002. Guide for Assessing and Mitigating Air Quality Impacts – Technical Document, Information for Preparing Air Quality Sections in EIRs. January.

from factories. Secondary pollutants are not emitted directly. Rather, they form in the air when primary pollutants react or interact.

a. Criteria Air Pollutants

As discussed in more detail below in Section B, *Regulatory Framework*, the federal Clean Air Act (CAA) and the California Clean Air Act (CCAA) promulgate, respectively, the national ambient air quality standards (NAAQS) and the California ambient air quality standard (CAAQS). Pollutants for which AAQS have been established are commonly referred to as "criteria air pollutants." The NAAQS and CAAQS for criteria air pollutants are shown in Table 4.3-1. The AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. The AAQS specify the concentration of pollutants to which the general public may typically be exposed without adverse health effects, 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. National and state standards are reviewed and updated periodically based on new health studies.

i. Ozone (O_3)

While ozone serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing ultraviolet radiation potentially harmful to humans, when it reaches elevated concentrations in the lower atmosphere it can be harmful to the human respiratory system and to sensitive species of plants.

Ozone concentrations build to peak levels during periods of light winds, bright sunshine, and high temperatures. Research has shown that exposure to ozone damages the alveoli (the individual air sacs in the lung where the exchange of oxygen and carbon dioxide between the air and blood takes place). Ozone is a strong irritant that attacks the respiratory system, leading to the damage of lung tissue. Short-term ozone exposure can reduce lung function

TABLE 4.3-1 **AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS**

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Ozone (O_3)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.075 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	*[a]	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	*[a]	
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	15 µg/$m^{3, b}$	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	

TABLE 4.3-1 **AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS**

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarterly	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Notes: ppm: parts per million; µg/m^3: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
[a] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked.
[b] On December 14, 2012, EPA lowered the federal primary $PM_{2.5}$ annual standard from 15.0 µg/m^3 to 12.0 µg/m^3. The new annual standard will become effective 60 days after publication in the Federal Register. EPA made no changes to the primary 24-hour $PM_{2.5}$ standard or to the secondary $PM_{2.5}$ standards.
Source: California Air Resources Board (CARB), 2012. Ambient Air Quality Standards, http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

in children, make persons susceptible to respiratory infection, and produce symptoms that cause people to seek medical treatment for respiratory distress. Long-term exposure can impair lung defense mechanisms and lead to emphysema and chronic bronchitis. A healthy person exposed to high concentrations may become nauseated or dizzy, may develop a headache or cough, or may experience a burning sensation in the chest. Sensitivity to ozone varies among individuals, but about 20 percent of the population is sensitive to ozone with exercising children being particularly vulnerable.

Ozone is formed in the atmosphere by a complex series of photochemical reactions that involve "ozone precursors" that are two families of pollutants: oxides of nitrogen (NO_x) and reactive organic gases (ROG). NO_x and ROG are emitted from a variety of stationary and mobile sources. While NO_2, an oxide of nitrogen, is another criteria pollutant itself, ROGs are not a criteria air pollutant, but are included in this discussion because they are ozone precursors. Monitored ozone levels in the San Joaquin Valley frequently exceed ambient air quality standards during the late spring through early fall.

ii. Carbon Monoxide (CO)

CO is a colorless, odorless, poisonous gas. Carbon monoxide's health effects are related to its affinity for hemoglobin in the blood. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause dizziness and fatigue. It also causes reduced lung capacity, and impairs mental abilities and central nervous system function, as well as inducing angina in persons with serious heart disease. Primary sources of CO in ambient air are passenger cars, light-duty trucks, and residential wood burning. The monitored CO levels in the valley during the last 10 years have been well below ambient air quality standards.

iii. Nitrogen Dioxide (NO_2)

The major health effect from exposure to high levels of NO_2 is the risk of acute and chronic respiratory disease. NO_2 is a combustion by-product, but it can also form in the atmosphere by chemical reaction. NO_2 is a reddish-brown colored gas often observed during the same conditions that produce

high levels of O_3 and can affect regional visibility. NO_2 is one compound in a group of compounds consisting of oxides of nitrogen (NO_x). As described above, NO_x is an O_3 precursor compound. Monitored levels of NO_2 in the Valley are below ambient air quality standards.

iv. Particulate Matter (PM)

Respirable particulate matter, PM_{10}, and fine particulate matter, $PM_{2.5}$, consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled and cause adverse health effects. PM_{10} and $PM_{2.5}$ are a health concern, particularly at levels above the federal and State ambient air quality standards. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health because minute particles are able to penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Children are more susceptible to the health risks of $PM_{2.5}$ because their immune and respiratory systems are still developing. These fine particulates have been demonstrated to decrease lung function in children. Certain components of PM, such as diesel particulate matter, are linked to higher rates of lung cancer.[3] Very small particles of certain substances (e.g. sulfates and nitrates) can also directly cause lung damage or can contain absorbed gases (e.g. chlorides or ammonium) that may be injurious to health.

Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as mining and demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. In addition to health effects, particulates also can damage materials and reduce

[3] California Air Resources Board and Office of Environmental Health Hazard Assessment. 1998. Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant April.

visibility. Dust comprised of large particles (diameter greater than 10 microns) settles out rapidly and is more easily filtered by human breathing passages. This type of dust is considered more of a soiling nuisance rather than a health hazard.

v. Sulfur Dioxide

SO_2 is produced by such stationary sources as coal and oil combustion, steel mills, refineries, and pulp and paper mills. The major adverse health effects associated with SO_2 exposure pertain to the upper respiratory tract. SO_2 is a respiratory irritant with construction of the bronchioles occurring with inhalation of SO_2 at 5 ppm or more. On contact with the moist mucous membranes, SO_2 produces sulfurous acid, which is a direct irritant. Concentration rather than duration of the exposure is an important determinant of respiratory effects.

vi. Lead

Lead is a metal found naturally in the environment, as well as in manufactured products. The major sources of lead emissions historically have been mobile and industrial sources. As a result of the phase-out of leaded gasoline, as discussed below, metal processing currently is the primary source of lead emissions. The highest level of lead in the air is generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the US EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. US EPA completed the ban prohibiting the use of leaded gasoline in highway vehicles in December 1995.[4] As a result of US EPA's regulatory efforts to remove lead from gasoline, lead concentrations have declined substantially over the past several decades. The most dramatic reductions in lead emissions

[4] 40 CFR Part 80, http://www.epa.gov/otaq/regs/fuels/additive/lead/pbbandfr.txt, accessed 2/27/2013

occurred prior to 1990 in the transportation sector due to the removal of lead from gasoline sold for most highway vehicles. Lead emissions were further reduced substantially between 1990 and 2008, with significant reductions occurring in the metals industries at least in part as a result of national emissions standards for hazardous air pollutants.[5]

b. Hazardous Air Pollutants/Toxic Air Contaminants

Both the U.S. Environmental Protection Agency (US EPA) and the California Air Resources Board (CARB) regulate hazardous air pollutants (HAPs)/ toxic air contaminants (TACs). By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs, which include the HAPs listed by US EPA.[6] The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines. Exposure to HAPs/TACs is usually evaluated in terms of health risk or cancer risk. For cancer health effects, the risk is expressed as the number of chances in a population of a million people who might be expected to get cancer over a 70-year lifetime.

B. Regulatory Framework

Ambient air quality standards (AAQS) have been adopted at State and federal levels for criteria air pollutants. In addition, both the State and federal government regulate the release of hazardous air pollutants (HAPs)/ toxic air contaminants (TACs). The Specific Plan Area is within the San Joaquin Valley Air Basin (SJVAB) and is subject to the rules and regulations imposed by the San Joaquin Valley Air Pollution Control District (SJVAPCD), as well as the California AAQS (CAAQS) adopted by the California Air Resources Board (CARB) and national AAQS (NAAQS) adopted by the Unites States

[5] U.S. EPA 2013. Policy Assessment for the Review of the Lead National Ambient Air Quality Standards - External Review Draft. EPA-452/P-13-001 January

[6] California Air Resources Board (CARB), 1999. Final Staff Report: Update to the Toxic Air Contaminant List.

Environmental Protection Agency (US EPA). Federal, State, regional and local laws, regulations, plans, and guidelines that are potentially applicable to the Project are summarized below.

1. Federal Laws and Regulations

a. Federal Clean Air Act

The US EPA is charged with implementing national air quality programs. The US EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA). The CAA was passed in 1963 by the U.S. Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting NAAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the U.S. The CAA allows states to adopt more stringent standards or to include other pollution species.

i. NAAQS

The federal CAA requires the US EPA to establish primary and secondary NAAQS for a number of criteria air pollutants. The air pollutants for which standards have been established are considered the most prevalent air pollutants that are known to be hazardous to human health. NAAQS have been established for the following pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead (Pb).

b. Title III of the Federal CAA

Hazardous air pollutants (HAPs)[7] are the air contaminants identified by US EPA as known or suspected to cancer, serious illness, birth defects, or death. The federal CAA requires the US EPA to set standards for these pollutants and reduce emissions of controlled chemicals. Specifically, Title III of the CAA requires the US EPA to promulgate National Emissions Standards for

[7] Referred to as toxic air contaminants (TACs) under the CCAA.

Hazardous Air Pollutants (NESHAP) for certain categories of sources that emit one or more pollutants that are identified as HAPs. The federal CAA also requires the US EPA to set standards to control emissions of HAPs through mobile source control programs. These include programs that reformulated gasoline, national low emissions vehicle standards, Tier 2 motor vehicle emission standards, gasoline sulfur control requirements, and heavy-duty engine standards.

HAPs tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods. Many HAPs originate from human activities, such as fuel combustion and solvent use. Emission standards may differ between "major sources" and "area sources" of the HAPs/TACs. Under the federal CAA, major sources are defined as stationary sources with the potential to emit more than 10 tons per year (tpy) of any one HAP or more than 25 tpy of any combination of HAPs; all other sources are considered area sources. Mobile source air toxics (MSATs) are a subset of the 188 HAPs. Of the 21 HAPs identified by the US EPA as MSATs, a priority list of six priority HAPs were identified that include: diesel exhaust, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. While vehicle miles traveled in the United States is expected to increase by 64 percent over the period 2000 to 2020, emissions of MSATs are anticipated to decrease substantially as a result of efforts to control mobile source emissions (by 57 percent to 67 percent depending on the contaminant).[8]

2. State Laws and Regulations

a. California Clean Air Act

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the State to achieve and maintain the CAAQS by the earliest practical date. The California Air Resources Board (CARB) is the state air pollution control agency and is a part of the California Environmental Protection Agency (CAL EPA). CARB is the agency responsible for coordination and

[8] Federal Highway Administration, 2006. *Interim Guidance on Air Toxic Analysis in NEPA Documents.*

oversight of state and local air pollution control programs in California, and for implementing the requirements of the CCAA. CARB oversees local district compliance with California and federal laws, approves local air quality plans, submits the SIPs to the US EPA, monitors air quality, determines and updates area designations and maps, and sets emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

i. CAAQS

The CCAA requires CARB to establish CAAQS. Similar to the NAAQS, CAAQS have been established for the following pollutant: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, Pb, vinyl chloride, hydrogen sulfide, sulfates, and visibility-reducing particulates. In most cases, the CAAQS are more stringent than the NAAQS pollutants. The CCAA requires that all local air districts in the State endeavor to achieve and maintain the CAAQS by the earliest practical date. The CCAA specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

b. Tanner Air Toxics Act and Air Toxics Hot Spots Information and Assessment Act

Toxic air contaminants (TACs)[9] in California primarily are regulated through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588) (Hot Spots Act). HAPs/TACs are a broad class of compounds known to cause morbidity or mortality (cancer risk). HAPs/TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g. dry cleaners). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are necessary

[9] Referred to as HAPs under the federal CAA.

before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted the US EPA's list of HAPs as TACs. In 1998, diesel particulate matter (DPM) was added to CARB's list of TACs. Once a TAC is identified, CARB adopts an Airborne Toxic Control Measure for sources that emit that particular TAC. If a safe threshold exists at which no toxic effect occurs from a substance, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

The Hot Spots Act requires for existing facilities that emit toxic substances above a specified level to prepare a toxic emissions inventory and a risk assessment if the emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

i. Diesel Exhaust and Diesel Particulate Matter

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average). According to CARB, diesel exhaust is a complex mixture of gases, vapors and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by CARB, and are listed as carcinogens either under State Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB reports that recent air pollution studies have shown an association that diesel exhaust and other cancer-causing toxic air contaminants emitted from vehicles are responsible for much of the overall cancer risk from TACs in California. Particulate matter emitted from diesel-fueled engines (DPM) was found to comprise much of that risk.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy duty diesel trucks that represent the bulk

of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2011 CARB approved the latest regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.[10] The regulation requires affected vehicles to meet specific performance requirements between 2012 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle. With implementation of CARB's Risk Reduction Plan, DPM concentrations are expected to be reduced by 85 percent in 2020 from the estimated year-2000 level.[11] As emissions are reduced, risks associated with exposure to emissions also are expected to be reduced.

ii. CARB Air Quality and Land Use Handbook

In April 2005, CARB released the final version of its *Air Quality and Land Use Handbook: A Community Health Perspective*. This guidance document is intended to encourage local land use agencies to consider the risks from air pollution before they approve the siting of sensitive land uses (e.g. residences) near sources of air pollution, particularly TACs (e.g. freeways and high traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities). To that end, CARB makes recommendations regarding the siting of sensitive land uses near freeways, truck distribution centers, rail yards, marine ports, dry cleaners, gasoline dispensing stations, and other air pollution sources. These "advisory" recommendations include general setbacks or buffers from air pollution sources. Unlike industrial or stationary sources of air pollution, the siting of new sensitive land uses does not require air quality permits or approval by air districts.

[10] Title 13, Section 2205. http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm, accessed 2/27/2013.

[11] California Air Resources Board. 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.

iii. CAPCOA Health Risk Assessments for Proposed Land Use Projects

The California Air Pollution Control Officer's Association (CAPCOA) is a consortium of air district managers throughout California, which provide guidance material to addressing air quality issues in the State. As a follow-up to CARB's 2005 *Air Quality and Land Use Handbook*, CAPCOA prepared the *Health Risk Assessments for Proposed Land Use Projects.*[12] This guidance document was released to ensure that the health risk of projects be identified, assessed, and avoided or mitigated through the CEQA process. The CAPCOA guidance document provides recommended methodology for evaluating health risk impacts for development projects.

3. Regulation of Air Quality on a Regional Level

a. San Joaquin Valley Air Pollution Control District

The SJVAPCD is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and the San Joaquin Valley portion of Kern. The primary role of SJVAPCD is to develop plans and implement control measures in the SJVAB to control air pollution. These controls primarily affect stationary sources such as industry and power plants. Rules and regulations have been developed by SJVAPCD to control air pollution from a wide range of air pollution sources. SJVAPCD also provides uniform procedures for assessing potential air quality impacts of proposed projects and for preparing the air quality section of environmental documents (see Section D(2), *SJVAPCD Significance Criteria*).

b. Attainment Status

For planning purposes, regions like the SJVAB are given an air quality status designation by the federal and State regulatory agencies. Areas with monitored pollutant concentrations that are lower than AAQS are designated "attainment" on a pollutant-by-pollutant basis. When monitored concentrations exceed the AAQS within an air basin, it is designated "nonattainment" for that pollutant. US EPA designates areas as "unclassified" when insufficient

[12] California Air Pollution Control Officer's Association (CAPCOA). 2009. Health Risk Assessments for Proposed Land Use Projects.

data are available to determine the attainment status; however, these areas are typically considered to be in attainment of the standards.

The SJVAB does not meet NAAQS or CAAQS for ground level ozone and $PM_{2.5}$. The SJVAB is classified as attainment under the NAAQS for PM_{10}; however, it is classified as nonattainment under the more stringent CAAQS. The attainment status for the Valley with respect to various pollutants of concern is displayed in Table 4.3-2.

i. Air Quality Planning

The US EPA requires states that have areas that do not meet the NAAQS to prepare and submit air quality plans showing how the NAAQS will be met. If the states cannot show how the NAAQS will be met, then the states must show progress toward meeting the NAAQS. These plans are referred to as the State Implementation Plan (SIP). California's adopted *2007 State Strategy* was submitted to the US EPA as a revision to its SIP in November 2007.[13] In addition, CARB requires regions that do not meet CAAQS for ozone to submit clean air plans (CAPs) that describe measures to attain the standard or show progress toward attainment. To ensure federal CAA compliance, SJVAPCD is currently developing plans for meeting new NAAQS for ozone and $PM_{2.5}$ and the CAAQS for PM_{10} in the SJVAB (for CCAA compliance).

a) 1-Hour Ozone Plan

CARB submitted the *2004 Extreme Ozone Attainment Demonstration Plan* to EPA in 2004, which addressed the old 1-hour national standard. The region's 2007 Ozone Plan, addressing the 8-hour ozone NAAQS, was submitted to US EPA and approved in March 2012. That plan predicts attainment of the standard throughout 90 percent of the district by 2020 and the entire district by 2024. To accomplish these goals, the plan would reduce NO_x emissions further by 75 percent and ROG emissions by 25 percent. A wide variety of control measures are included in these plans, such as reducing or offsetting

[13] California Air Resources Board (CARB), 2007. Air Resources Board's Proposed State Strategy for California's 2007 State Implementation Plan. Note that the plan was adopted by CARB on September 27, 2007.

TABLE 4.3-2 **SAN JOAQUIN VALLEY AIR BASIN ATTAINMENT STATUS**

Pollutant	Federal Status	State Status
Ozone (O_3) – 1-Hour Standard	No Federal Standard	Severe Nonattainment
Ozone (O_3) – 8-Hour Standard	Extreme Nonattainment	Nonattainment
Respirable Particulate Matter (PM_{10})	Attainment-Maintenance	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)[a]	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment-Maintenance	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Sulfates and Lead	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility Reducing Particles	No Federal Standard	Unclassified

[a] The Valley is designated nonattainment for the 1997 federal $PM_{2.5}$ standards. EPA released final designations for the 2006 $PM_{2.5}$ standards (effective in 2009), designating the Valley as nonattainment.
Source: California Air Resources Board (CARB). 2011, June 23. Area Designations: Activities and Maps. http://www.arb.ca.gov/desig/adm/adm.htm.

emissions from construction and traffic associated with land use developments.

b) 8-Hour Ozone Plan

SJVAPCD adopted the *2007 Ozone Plan* on April 30, 2007.[14] This plan includes a dual path strategy that assures expeditious attainment of the Federal 8-hour ozone standard as set by US EPA in 1997. The plan forecasts that the Valley will achieve the 8-hour ozone standard for all areas of the SJVAB no

[14] San Joaquin Valley Air Pollution Control District (SJVAPCD), 2007. 2007 Ozone Plan.

later than 2023. CARB approved the 2007 Ozone Plan on June 14, 2007. US EPA approved the *2007 Ozone Plan* effective April 30, 2012. SJVAPCD expects that the updated plan addressing US EPA's 2008 revised 8-hour ozone standard will be due to US EPA in 2015.

c) PM_{10} Plan

On October 30, 2006, US EPA issued a Final Rule determining that the San Joaquin Valley had attained the NAAQS for PM_{10} [71 FR 63642].[15] In response, SJVAPCD, CARB, and the San Joaquin Valley's local Metropolitan Planning Organizations (MPOs) have developed the *2007 PM_{10} Maintenance Plan and Request for Redesignation* so that the US EPA can proceed with completing the re-designation process for PM_{10} for the SJVAB. In 2008, US EPA proposed to approve the 2007 PM_{10} Maintenance Plan and Request for Re-designation and the region now meets the NAAQS for PM_{10}.

d) $PM_{2.5}$ Plan

The SJVAPCD adopted the *2012 $PM_{2.5}$ Plan* on December 20, 2012.[16] This plan was approved by CARB on January 24, 2013. This plan will assure that the Valley will attain the 2006 $PM_{2.5}$ NAAQS. The plan uses control measures to reduce NO_x, which also leads to fine particulate formation in the atmosphere. The plan incorporates measures to reduce direct emissions of $PM_{2.5}$, including a strengthening of regulations for various SJVAB industries and the general public through new rules and amendments. The plan estimates that the SJVAB will reach the $PM_{2.5}$ standard by 2014.

All of the above-referenced plans include measures (i.e. federal, state and local) that would be implemented through rule making or program funding to reduce air pollutant emissions in the SJVAB. Transportation Control Measures (TCMs) are part of these plans.

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[15] San Joaquin Valley Air Pollution Control District (SJVAPCD), 2007. 2007 PM10 Maintenance Plan and Request for Redesignation.

[16] San Joaquin Valley Air Pollution Control District (SJVPACD), 2012. 2012 PM2.5 Plan.

c. Applicable SJVAPCD Rules and Regulations

i. SJVAPCD Indirect Source Review

On December 15, 2005, SJVAPCD adopted the Indirect Source Review Rule (ISR or Rule 9510) to reduce ozone precursors (i.e. ROG and NO_x) and PM_{10} emissions from new land use development projects. Rule 9510 applies to both construction and operational-related impacts. The rule applies to any applicant that seeks to gain a final discretionary approval for a development project, or any portion thereof, which upon full buildout would include any one of the following:

- 50 residential units.
- 2,000 square feet of commercial space.
- 25,000 square feet of light industrial space.
- 100,000 square feet of heavy industrial space.
- 20,000 square feet of medical office space.
- 39,000 square feet of general office space.
- 9,000 square feet of educational space.
- 10,000 square feet of government space.
- 20,000 square feet of recreational space.
- 9,000 square feet of space not identified above.
- Transportation/transit projects with construction exhaust emissions of two or more tons of NO or two or more tons of PM_{10}.
- Projects on contiguous or adjacent property under common ownership of a single entity that is designated and zoned for the same development and density and has the capability of accommodating more than 50 residential units.
- Projects on contiguous or adjacent property under common ownership of a single entity that is designated and zoned for the same development and density and has the capability of accommodating development projects two

or more tons of NO_s or two or more tons of PM_{10} during project operations.

The rule requires all subject, non-exempt projects[17] to mitigate both construction and operational period emissions by (1) applying feasible SJVAPCD-approved mitigation measures, or (2) paying any applicable fees to support programs that reduce emissions. Off-site emissions reduction fees (off-site fee) are required for projects that do not achieve the required emissions reductions through on-site emission reduction measures. Phased projects can defer payment of fees in accordance with an Off-Site Emissions Reduction Fee Deferral Schedule (FDS) approved by the SJVAPCD.

To determine how an individual project would satisfy Rule 9510, each project would submit an air quality impact assessment (AIA) to the SJVAPCD as early as possible, but no later than prior to the project's final discretionary approval, to identify the project's baseline unmitigated emissions inventory for indirect sources: on-site exhaust emissions from construction activities and operational activities from mobile and area sources of emissions (excludes fugitive dust and permitted sources.)[18] Rule 9510 requires the following:

- Construction Equipment Emissions: The exhaust emissions for construction equipment greater than 50 horsepower (hp) used or associated with the development project shall be reduced by the following amounts from the statewide average as estimated by CARB:
  - 20 percent of the total NO_x emissions, and
  - 45 percent of the total PM_{10} exhaust emissions.

  Mitigation measures that may include those that reduce construction emissions on-site by using less polluting construction equipment, which can be achieved by utilizing add-on controls, cleaner fuels, or newer lower emitting equipment.

[17] Development projects that have a mitigated baseline below 2 tons per year of NO_x and 2 tons per year of PM_{10} are exempt.

[18] Stationary sources of air pollutant emissions are covered separately under SJVAPCD's Rule 2201, *New and Modified Stationary Source Review*.

¨ Operational Emissions:

Ÿ *NO_x Emissions:* Applicants shall reduce 33.3 percent of the project's operational baseline NO_x emissions over a period of ten years as quantified in the approved AIA.

Ÿ *PM_{10} Emissions:* Applicants shall reduce of 50 percent of the project's operational baseline PM_{10} emissions over a period of 10 years as quantified in the approved AIA a.

These requirements listed above can be met through any combination of on-site emission reduction measures.

In the event that a project cannot achieve the above standards, through imposition of mitigation measures, then the project would be required to pay the applicable off-site fees.

ii. New and Modified Stationary Source Review

SJVAPCD adopted Rule 2201, *New and Modified Stationary Source Review*, to control emissions from new stationary sources and all modifications to existing stationary sources which are subject to SJVAPCD's permit requirements (i.e. "permit projects" for which the SJVAPCD is the lead agency). Permit projects that exceed the Source Performance Standards are required to install Best Available Control Technology (BACT) to control emissions to the maximum extent practicable.

iii. Fugitive PM_{10} Prohibitions

SJVAPCD controls fugitive PM_{10} through Regulation VIII, *Fugitive PM_{10} Prohibitions*. The purpose of this regulation is to reduce ambient concentrations of PM_{10} and $PM_{2.5}$ by requiring actions to prevent, reduce or mitigate anthropogenic (human caused) fugitive dust emissions.

¨ Regulation VIII, Rule 8021 applies to any construction, demolition, excavation, extraction, and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, travel on-site, and travel on access roads to and from the site.

- Regulation VIII, Rule 8031 applies to the outdoor handling, storage, and transport of any bulk material.
- Regulation VIII, Rule 8041 applies to sites where carryout or trackout has occurred or may occur on paved roads or the paved shoulders of public roads.
- Regulation VIII, Rule 8051 applies to any open area having 0.5 acre or more within urban areas or 3.0 acres or more within rural areas, and contains at least 1,000 square feet of disturbed surface area.
- Regulation VIII, Rule 8061 applies to any new or existing public or private paved or unpaved road, road construction project, or road modification project.
- Regulation VIII, Rule 8071 applies to any unpaved vehicle/equipment traffic area.
- Regulation VIII, Rule 8081 applies to off-field agricultural sources.

Sources regulated are required to provide Dust Control Plans that meet the regulation requirements. Under Rule 8021, a Dust Control Plan is required for any residential project that will include 10 or more acres of disturbed surface area, a non-residential project with 5 or more acres of disturbed surface area, or a project that relocates 2,500 cubic yards per day of bulk materials for at least three days. The Dust Control Plan is required to be submitted to SJVAPCD prior to the start of any construction activity. The Dust Control Plan must also describe fugitive dust control measure to be implemented before, during, and after any dust generating activity. For sites smaller than those listed above, the project is still required to notify SJVAPCD a minimum of 48 hours prior to commencing earthmoving activities.

iv. Nuisance Odors

SJVAPCD controls nuisance odors through implementation of Rule 4102, *Nuisance*. Pursuant to this rule, "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 per-

sons or to the public or which endanger the comfort, repose, health or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property."

v. Employer Based Trip Reduction Program

SJVAPCD has implemented Rule 9410, *Employer Based Trip Reduction*. The purpose of this rule is reduce vehicle miles traveled (VMT) from private vehicles used by employees to commute to and from their worksites to reduce emissions of NO_x, ROG and particulate matter (PM_{10} and $PM_{2.5}$). The rule applies to employers with at least 100 employees. Employers are required to implement an Employer Trip Reduction Implementation Plan (ETRIP) for each worksite with 100 or more Eligible Employees to meet applicable targets specified in the rule. Employers are required to facilitate the participation of the development of ETRIPs by providing information to its employees explaining the requirements and applicability of this rule. Employers are required to prepare and submit an ETRIP for each worksite to the District. The ETRIP must be updated annually. Under this rule, employers shall collect information on the modes of transportation used for each Eligible Employee's commutes both to and from work for every day of the Commute Verification Period, as defined in using either the Mandatory Commute Verification Method or a Representative Survey Method. Annual reporting includes the results of the Commute Verification for the previous calendar year along with the measures implemented as outlined in the ETRIP and, if necessary, any updates to the ETRIP.

d. SJCOG's Congestion Management Program

The San Joaquin Council of Governments (SJCOG) is the designated congestion management agency for the county. SJCOG's congestion management plan (CMP) identifies strategies to address the problem of increasing congestion on California's highways and principal arterials through a coordinated approach involving State, regional, county, and city transportation and land use agencies, transit providers and air pollution control districts. The CMP is also intended to facilitate an integrated approach to programming transportation improvements. By creating a forum for State, regional, and local transportation and land use agencies to address regional and multi-jurisdictional

issues related to congestion, land development, and air quality, the CMP ensures that limited transportation funds are more efficiently invested. Implementation of the State CMP requirements also implements the federal Congestion Management System (CMS) planning requirements. The objective of the CMS/CMP is to ensure that new land uses are developed in tandem with the necessary transportation improvements by coordinating the land use, air quality, and transportation planning processes.[19]

e. City of Tracy General Plan

Assembly Bill 170 (2003) requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies, and feasible implementation strategies designed to improve air quality. The following are relevant City General Plan air quality goals, policies, objectives, and actions (Table 4.3-3).[20] A full listing of all the General Plan goals, policies, objectives, and actions are in Appendix C:

C. Existing Air Quality

Air quality is affected by the rate of pollutant emissions and by meteorological conditions such as wind speed, atmospheric stability, and mixing height, all of which affect the atmosphere's ability to mix and disperse pollutants. Long-term variations in air quality typically result from changes in air pollutant emissions, while short-term variations result from changes in atmospheric conditions.

a. Existing Air Pollutant Levels

As previously discussed, the San Joaquin Valley experiences poor air quality conditions, due primarily to elevated levels of ozone and particulate matter. CARB, in cooperation with SJVAPCD, monitors air quality throughout the

[19] San Joaquin Council of Governments (SJCOG), 2012. San Joaquin County Regional Congestion Management Program. http://www.sjcog.org/docs/pdf/Regional%20Planning/CMP/2012cmp.pdf.

[20] City of Tracy, 2011. City of Tracy General Plan.

TABLE 4.3-3 **GENERAL PLAN POLICIES RELEVANT TO AIR QUALITY**

Goal/ Policy No.	Goal/Policy Content
Air Quality Element	
Goal AQ-1	Improved air quality and reduced greenhouse gas emissions.
Objective AQ-1.1	*Improve air quality and reduce greenhouse gas emissions through land use planning decisions.*
Policy P1	The City shall promote land use patterns that reduce the number and length of motor vehicle trips.
Policy P2	To the extent feasible, the City shall maintain a balance and match between jobs and housing.
Policy P3	Higher density residential and mixed-use development shall be encouraged adjacent to commercial centers and transit corridors.
Policy P4	Employment areas should include a mix of support services to minimize the number of trips.
Policy P5	Village Centers and other retail and office areas should be located within walking and biking distance of existing and proposed residential developments.
Objective AQ-1.2	*Promote development that minimizes air pollutant and greenhouse gas emissions and their impact on sensitive receptors as a result of indirect and stationary sources.*
Policy P1	The City shall assess air quality impacts using the latest version of the CEQA Guidelines and guidelines prepared by the San Joaquin Valley Air Pollution Control District.
Policy P2	The City shall assess through the CEQA process any air quality impacts of development projects that may be insignificant by themselves, but cumulatively significant.
Policy P3	Developers shall implement best management practices to reduce air pollutant emissions associated with the construction and operation of development projects.
Policy P4	New development projects should incorporate energy efficient design features for HVAC, lighting systems and insulation that exceed Title 24.
Policy P5	Use of solar water and pool heaters is encouraged.
Policy P6	Installation of solar voltaic panels on new homes and businesses shall be encouraged.
Policy P7	Trees should be planted on the south- and west-facing sides of new buildings or building undergoing substantial renovation in order to reduce energy usage.

TABLE 4.3-3 **GENERAL PLAN POLICIES RELEVANT TO AIR QUALITY**

Goal/ Policy No.	Goal/Policy Content
Policy P9	New developments shall follow the current requirements of the SJVAPCD with respect to wood burning fireplaces and heaters.
Policy P10	Stationary air pollutant emission sources (e.g. factories) shall be located an appropriate distance away and downwind from residential areas and other sensitive receptors.
Policy P12	New sources of toxic air pollutants shall prepare a Health Risk Assessment as required under the Air Toxics "Hot Spots" Act and, based on the results of the Assessment, establish appropriate land use buffer zones around those areas posing substantial health risks.
Policy P13	Dust control measures consistent with San Joaquin Valley Air Pollution Control District rules shall be required as a condition of approval for subdivision maps, site plans, and all grading permits.
Policy P14	Developments that significantly impact air quality shall only be approved if all feasible mitigation measures to avoid, minimize, or offset the impact are implemented.
Policy P15	Encourage businesses to electrify loading docks or implement idling-reduction systems so that trucks transporting refrigerated goods can continue to power cab cooling elements during loading, layovers, and rest periods.
Action A1	Review standards for the design and use of new drive-through businesses with the aim of reducing adverse impacts on air quality.
Objective AQ-1.3	*Provide a diverse and efficient transportation system that minimizes air pollutant and greenhouse gas emissions.*
Policy P3	The City shall encourage employers to establish Transportation Demand Management programs.
Policy P5	The City shall require direct pedestrian and bicycle linkages from residential areas to parks, schools, retail areas, high-frequency transit facilities and major employment areas.

San Joaquin Valley Air Basin. The closest official monitoring station to the Specific Plan Area is located at the Tracy Municipal Airport. In general, the ambient air quality measurements from this station are representative of the air quality in the Specific Plan Area vicinity.

Table 4.3-4 summarizes air quality monitoring data from the Tracy Airport Street monitoring station. The values in the table reflect the highest air pollutant levels measured from 2009 to 2011. In addition, this Table provides the number of days in which measured concentrations exceeded the NAAQS or CAAQS. These findings are discussed in greater detail below.

As indicated in Table 4.3-4, the NAAQS and CAAQS for one- and eight-hour ozone, and $PM_{2.5}$ were exceeded multiple times in the Specific Plan Area vicinity over the last three years. While the standards for PM_{10} and $PM_{2.5}$ were exceeded over the three-year period, CARB has not provided the number of exceedances. However, the highest CO and NO_2 concentrations measured in Tracy have been well below the NAAQS and CAAQS. Other criteria pollutants, SO_2 and Pb, are not monitored by the Tracy monitoring station and are generally not air pollutants of concern associated with land use development projects (e.g. lead is only associated with major stationary sources and SO_2 concentrations have not been exceed in the SJVAB as a result of regulations requiring use of low-sulfur fuel).

Impacts from some criteria air pollutants, including NO_2, SO_2, and lead, were not quantified for purposes of this analysis. This is because ambient concentrations of these air pollutants are well below ambient air quality standards and the Project is not expected to change that condition. For instance, ambient levels of NO_2 have never been measured above ambient air quality standards in San Joaquin County. SJVAPCD reports a three-year average of the NO_2 daily 1 hour maximum as 38.7 ppb (i.e. 98th percentile of the annual distribution of the maximum hour).[21] The 1-hour ambient air quality

[21] SJVAPCD, website: http://www.valleyair.org/busind/pto/tox_resources/AirQualityMonitoring.htm#no2_data. Accessed March 5, 2013.

TABLE 4.3-4 **AMBIENT AIR QUALITY MONITORING SUMMARY**

	Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations		
Pollutant/Standard	2009	2010	2011
Ozone (O_3)[a]			
State 1-Hour ³ 0.09 ppm	2	1	3
State 8-hour ³ 0.07 ppm	20	8	21
Federal 8-Hour > 0.075 ppm	8	3	8
Max. 1-Hour Conc. (ppm)	0.104 ppm	0.113 ppm	0.107 ppm
Max. 8-Hour Conc. (ppm)	0.087 ppm	0.092 ppm	0.088 ppm
Carbon Monoxide (CO)[a]			
State 8-Hour > 9.0 ppm	0	0	0
Federal 8-Hour ³ 9.0 ppm	0	0	0
Max. 8-Hour Conc. (ppm)	2.29 ppm	1.60 ppm	2.13 ppm
Nitrogen Dioxide (NO_2)[a]			
State 1-Hour ³ 0.18 (ppm	0	0	0
Max. 1-Hour Conc. (ppm)	0.043 ppm	0.040 ppm	0.039 ppm
Annual Conc. (ppm)	0.008 ppm	0.006 ppm	0.006 ppm
Coarse Particulates (PM_{10})[a]			
State 24-Hour > 50 µg/m^3	NA	NA	NA
Federal 24-Hour > 150 µg/m^3	0	0	0
Max. 24-Hour Conc. (µg/m^3)	55.3 µg/m^3	28.5 µg/m^3	110.8 µg/m^3
Annual Conc. (µg/m^3)	16.4 µg/m^3	11.9 µg/m^3	17.5 µg/m^3
Fine Particulates ($PM_{2.5}$)[a]			
Federal 24-Hour > 35 µg/m^3	NA	NA	NA
Max. 24-Hour Conc. (µg/m^3)	41.6 µg/m$_3$	42.3 µg/m^3	35.1 µg/m^3
Annual Conc. (µg/m^3)	6.1 µg/m^3	4.9 µg/m^3	NA

Notes: ppm: parts per million; µg/m^3: or micrograms per cubic meter
* = insufficient data
NA = Not Available

[a] Data reported from Tracy Airport Street monitoring location.

Source: California Air Resources Board (CARB), 2013. Air Pollution Data Monitoring Cards (2009, 2010, and 2011), http://www.arb.ca.gov/adam/index.html, accessed February 25, 2013.

standard for NO_2 is almost three times that level at 100 parts per billion. However, it should be noted that regional emissions of NO_x were evaluated based on SJVAPCD's threshold, because of their potential to contribute to the SVAB's ozone non-attainment designation. The highest SO_2 levels are in Fresno and are still well below the most stringent ambient air quality standards at 7.3 ppb compared to the standard of 75 ppb. Lead levels in San Joaquin Valley have been well below ambient air quality standards for decades, such that routine monitoring in the San Joaquin Valley is no longer conducted. Other pollutants that only have standards established by the State (i.e. sulfates, vinyl chloride, and hydrogen sulfides) are not considered to have sources in the Specific Plan Area that would affect these levels. In fact, neither CARB nor SJVAPCD conducts monitoring of these pollutants in or near Tracy due to the lack of sources. The Project would not be a new source of these pollutants.

b. Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. "Sensitive receptors" are defined as facilities where sensitive population groups, such as children, the elderly, the acutely ill and the chronically ill, are likely to be located. These land uses include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

Sensitive receptors in the Specific Plan Area vicinity include scattered residences on-site, residences just north of Interstate 205, and other residences east of the Specific Plan Area, primarily along Old Schulte Road to the east.

D. Standards of Significance

1. CEQA Appendix G Standards

The Project would have a significant impact with regard to air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project area is in non-attainment under applicable federal or State ambient air quality standards (including releasing emissions which exceed quantitative Standards for ozone precursors or other pollutants).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

2. SJVAPCD Significance Criteria

As stated in Appendix G, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations. Thus, this analysis also evaluates the Project's air quality impacts pursuant to SJVAPCD's recommended guidelines and thresholds of significance, as discussed further below.

The SJVAPCD has developed the *Guide for Assessing and Mitigating Air Quality Impacts*, also known as the GAMAQI. The current GAMAQI was adopted by the SJVAPCD Board in 1998 and last revised in 2002. However, SJVAPCD has recently published the Draft GAMAQI in 2012.[22] While the Draft 2012 GAMAQI have not yet been adopted by the SJVAPCD board, they represent the latest guidance for addressing air quality impacts in the SJVAB. Accordingly, to ensure a conservative analysis, this Draft EIR uses

[22] SJVAPCD, 2012. *Draft Guidance for Assessing and Mitigating Air Quality Impacts.*

the Draft 2012 GAMAQI. Changes to the GAMAQI are primarily administrative in nature to update air basin information, attainment status, and general guidance to reflect updated conditions. The following thresholds of significance, from the SJVAPCD's GAMAQI, are used to determine whether a proposed project would result in a significant air quality impact:

a. Regional Significance Thresholds

SJVACD has identified regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SJVAB. Table 4.3-5 lists SJVAPCD's regional significance thresholds.

b. Localized Air Pollutant Concentrations

i. Ambient Air Quality Analysis

Emissions of any criteria air pollutant that would exceed the applicable threshold of significance identified in Table 4.3-5 or that would generate emissions that equal or exceed 100 lbs per day is considered to result in elevated concentrations of air pollutants that have the potential to exceed the AAQS.

ii. CO Hotspots

Traffic emissions associated with a project would be considered significant if the project contributes to CO concentrations at receptor locations in excess of the ambient air quality standards (i.e. CAAQS of 9.0 ppm for 8 hours or 20 ppm for 1 hour).

c. Odors

Odor impacts associated with the proposed Project would be considered significant if the Project has the potential to frequently expose members of the public to objectionable odors through development of a new odor source or placement of receptors near an existing odor source. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, there are no quantitative or formulaic methodologies to determine the presence of a significant odor impact. Rather, SJVAPCD recommends that odor analyses strive to fully disclose all pertinent information.

TABLE 4.3-5 **SJVAPCD REGIONAL SIGNIFICANCE THRESHOLDS**

Criteria Air Pollutant	Construction and Operational Significance Thresholds (Tons/Year)
ROG	10
NO_x	10
PM_{10}	15
$PM_{2.5}$	15

Source: San Joaquin Valley Air Pollution Control District (SJVAPCD), 2012. Draft Guide for Assessing and Mitigating Air Quality Impacts.

d. Health Risk

Whenever a project would require use of chemical compounds that have been identified in SJVAPCD's Rule 2201, placed on CARB's air toxics list pursuant to Assembly Bill 1807 (AB 1807), Air Contaminant Identification and Control Act (1983), or placed on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment (HRA) is warranted. Table 4.3-6 lists the SJVAPCD's TAC incremental risk thresholds for operation of a project.

TABLE 4.3-6 **TOXIC AIR CONTAMINANTS INCREMENTAL RISK THRESHOLDS**

Maximum Exposed Individual (MEI) Cancer Risk	≥ 10 in 1 million
Hazard Index (Project Increment)	≥ 1.0

Source: San Joaquin Valley Air Pollution Control District (SJVAPCD). 2012. Draft Guide for Assessing and Mitigating Air Quality Impacts.

e. Cumulative Impacts

With respect to cumulative air quality impacts, the GAMAQI provides that any proposed project that would individually have a significant air quality

impact (i.e. exceed significance thresholds for ROG, NO_x, or PM_{10}) would also be considered to have a significant cumulative impact.

E. Impact Discussion

1. Methodology

This section analyzes the Project's potential air quality impacts.

a. Construction

Construction emissions were modeled using the California Emissions Estimator Model, Version 2011.1.1 (CalEEMod) using Project-specific inputs, including proposed land use types and sizes. CalEEMod is a computer model developed by the South Coast Air Quality Management District (SCAQMD) to estimate air pollutant and greenhouse gas (GHG) emissions from land use development projects. Construction equipment and truck emissions are assumed to decrease in the future as newer equipment, with much lower emissions, replaces existing equipment. As a result, CalEEMod computes lower emissions for future years. Because the OFFROAD2007 model is integrated into the current version of CalEEMod, the model does not incorporate new regulations adopted after 2007, including the effect of new State regulations that require fleet construction equipment and truck fleet operators to replace or retrofit their fleets to expedite reductions in emissions.

For the purposes of analysis in this Draft EIR, construction of the Project would occur from 2014 to 2034 and be fully operational by 2035. The first development phase could be operational by 2024 (Phase 1). The model default equipment list and phasing schedule were used for computing exhaust emissions rates. For full buildout, the relative default phasing durations were applied to the Project's anticipated construction duration over an approximate 20-year period. CalEEMod's default construction equipment mix and schedule are based on surveys of small to mid-sized construction sites conducted by SCAQMD. To be consistent with CARB's OFFROAD2011 modeling methodologies, load factors for equipment usage were reduced by 33 percent. Since the Specific Plan Area is flat and the Project has been designed

to reduce mass grading, the Specific Plan Area is assumed to be balanced. CalEEMod input and output worksheets are included in Appendix D.

New road construction and road widening emissions that would occur with the development of Phase I of the Project as well as full buildout were modeled using the Sacramento Metropolitan Air Quality Management District's (SMAQMD) Road Construction Emissions Model, RoadMod Version 6.3.2. Proposed road widths and lengths were estimated using information provided in Chapter 6 of the Specific Plan. RoadMod modeling along with construction emission estimates from CalEEMod modeling for both Phase I of the Project as well as full buildout were computed by traffic analysis zone (TAZ). Under a credible worst-case scenario, all construction for both Phase 1 of the Project as well as full buildout was modeled to begin in 2014.[23] This would be the earliest year that construction could occur. Buildout of Phase 1 is estimated to last 10 to 15 years, while full buildout of the Project is assumed to last 20 years. As a credible worst-case scenario, buildout of Phase 1 was assumed to begin in 2014 and last 10 years, while full buildout would begin in 2014 and last 20 years. The model default schedule, in terms of construction duration, for various construction activities was then applied to the construction start dates of 2014 for each construction TAZ area modeled. RoadMod output, the default construction equipment list in RoadMod, and other assumptions are contained in Appendix D.

b. Operational Phase

Operational phase emissions resulting from implementation of the land uses associated with the proposed Project were modeled using CalEEMod based on Project-specific inputs, including proposed land uses and sizes, and Project trip generation rates provided by Fehr & Peers. Model runs were developed and ran for each TAZ within Phase 1, as well as for the full buildout. Full built-out of the Project's operational emission estimates were computed for

[23] Emission rates for off-road construction equipment are higher for earlier model years. Because construction fleets turn over with new equipment that meets the latest state and federal regulations, the earlier the Project gets constructed the higher emissions are.

the year 2035. It is assumed that development of the Specific Plan Area would occur over the course of an approximate 20-year period; however, the rate and timeframe are subject to variation based on market demands, the regional economy, and other socioeconomic factors. For Phase 1 TAZ runs, 2024 was used as the earliest possible buildout year.

The Project's operational emissions were modeled using trip generation rates from the Fehr & Peers transportation analysis (see Appendix L) and land use types and amounts as set forth in the Specific Plan. The methodology for developing the trip estimates is described in Chapter 4.14, *Transportation and Traffic*. Fehr & Peers developed am and pm peak hour trip generation rates, but provided conversion factors for the air quality analysis to develop daily trip generation rates for the different land uses. The CalEEMod default vehicle fleet mix was determined to be representative of the expected Project fleet mix. The CalEEMod default traffic mix for the San Joaquin Valley air basin includes 16 percent heavy trucks and 11 percent medium duty trucks, which was considered representative of the project trip generation as a whole.

The Project's land uses types and sizes were input into CalEEMod, which included commercial uses entered as "Regional Shopping Center," office uses entered as "General Office Building," warehouse uses entered as "Unrefrigerated Warehouse-No Rail," Hi-Cube uses entered as "Industrial Park," light industrial uses entered as "General Light Industry," and manufacturing uses entered as "Manufacturing." Because there is no "Hi-Cube" land uses provided in CalEEMod, "Industrial Park" was used as a "dummy" land use allowing user entry of inputs such as trip rates separate from the other warehouse uses. Energy use or Hi-Cube uses were assumed to be the same or less than other warehouse uses, since Hi-Cube is primarily used for the high-capacity storage of goods.

For purposes of providing a conservative analysis and given that existing emissions are anticipated to be relatively low because of the existing uses, for purposes of this analysis existing operational emissions were not subtracted to

provide net emissions. CalEEMod input and output worksheets are included in Appendix D, along with trip generation data.

c. CO Hotspots

CO hot spot modeling was performed using the California Line Source Dispersion Model (CALINE4) with weighted 2024 and 2035 vehicle emissions factors from EMFAC2011 for Phase 1 and full buildout, respectively. Methodology followed the modeling recommendations contained in the California Department of Transportations' *Carbon Monoxide Protocol*.[24] Ambient background CO concentrations reported by CARB were added to the model output results to obtain the predicted Phase 1 and full buildout CO concentrations at the modeled receptors. Twelve receptors were modeled for each intersection at seven meter (23 feet) distances from roadway segments. CALINE4 model worksheets are provided in Appendix D.

d. Toxic Air Contaminants

A health risk evaluation was conducted to assess the potential health effects of the proposed Project's DPM emissions on nearby sensitive receptors. The health risk evaluation includes DPM emissions from construction activity, as well as traffic within the Specific Plan Area and on major arterials and freeways that would experience substantial truck trip volumes once the Project is developed and operational. Because the operational health risk evaluation was conducted for activities in each TAZ with varying mixes of land use types proposed, truck percentages by land use were developed. The Project was assumed to generate 10 percent or less in truck volume for commercial and office uses, and 20 percent truck volume for industrial type uses. Of that truck traffic, eighty percent of was assumed to fall under the category of heavy duty trucks, and 20 percent would fall under the category of medium-duty vehicles.

[24] California Department of Transportations (Caltrans), 1997. Carbon Monoxide Protocol.

i. AERMOD

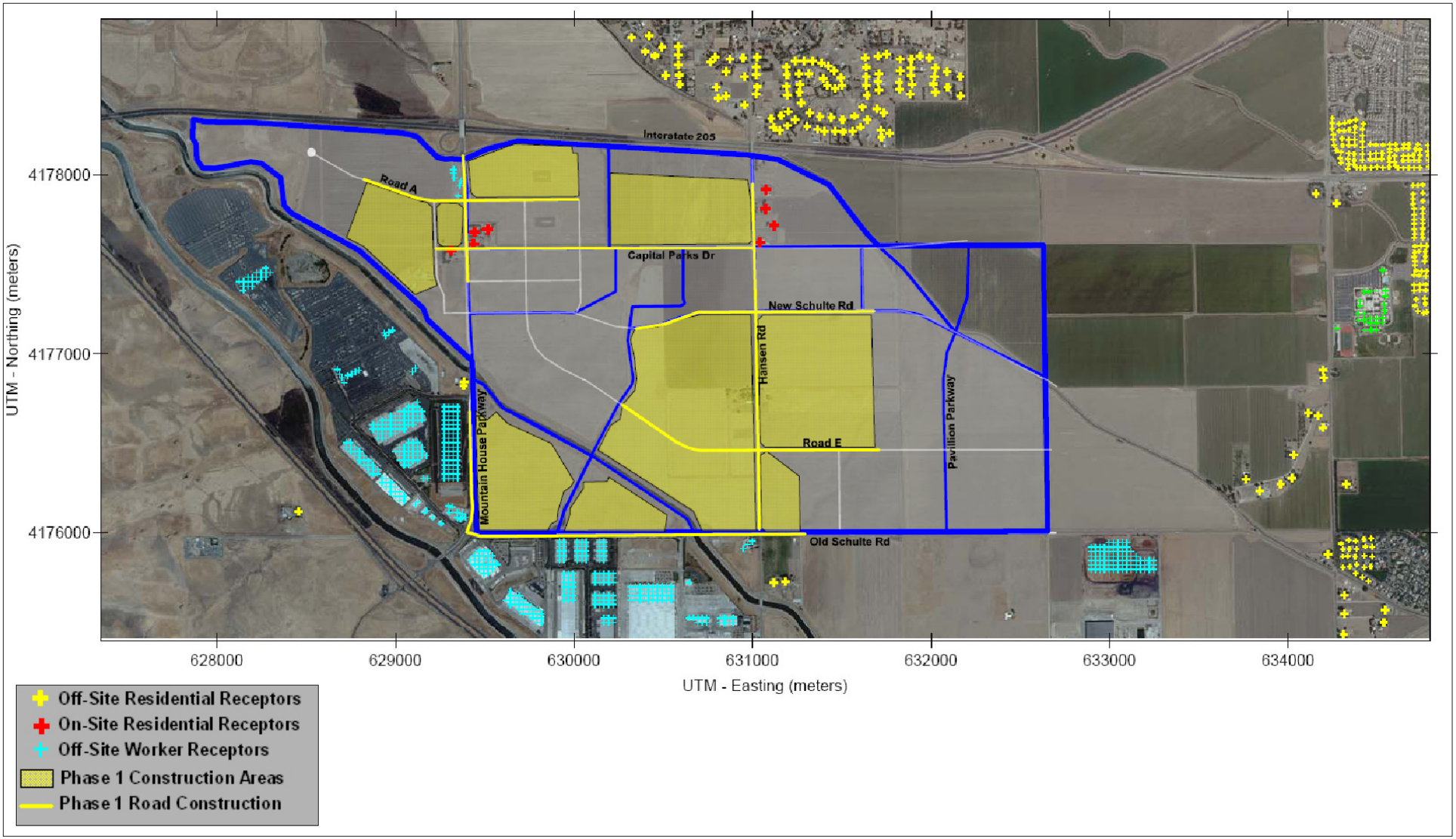
The US EPA's AERMOD dispersion model was used to predict annual DPM concentrations at sensitive receptors, which were then used to compute health risks in the form of excess cancer risk. AERMOD predicts pollutant concentrations at receptors located in areas of flat or complex terrain from a variety of emission source types including point, area, volume, and line sources. Emissions from these source types can be continuous or vary by hour, day of the week, month, or season. The model was run using regulatory default dispersion options and rural dispersion coefficients due to the rural nature of the surrounding area. Since there is little variation in terrain elevation in the Specific Plan Area vicinity, the model was run in flat terrain mode. Inputs to the AERMOD dispersion model included emission area sources, line area sources, receptor locations, emission rates, and historical hourly meteorological data.

a) Receptor Grids

Both discrete and receptor grids were used to predict Project impacts. Discrete receptors were used to represent individual existing residences or isolated workplaces. Locations of residential receptors were identified from aerial images and included in the modeling as locations for the model to calculate annual average DPM concentrations. Receptor grids, with receptors spaced 25 meters apart, were used to represent worker exposures at large employment centers. An aerial view showing the Specific Plan Area, construction areas and roadway segments modeled, and the locations of the residential and worker receptors is provided in Figure 4.3-1 for Phase 1 and Figure 4.3-2 for full buildout construction. Figure 4.3-3 shows the Phase 1 operation sources and receptors, and Figure 4.3-4 shows the full buildout operation sources and receptors.

b) Meteorological Data

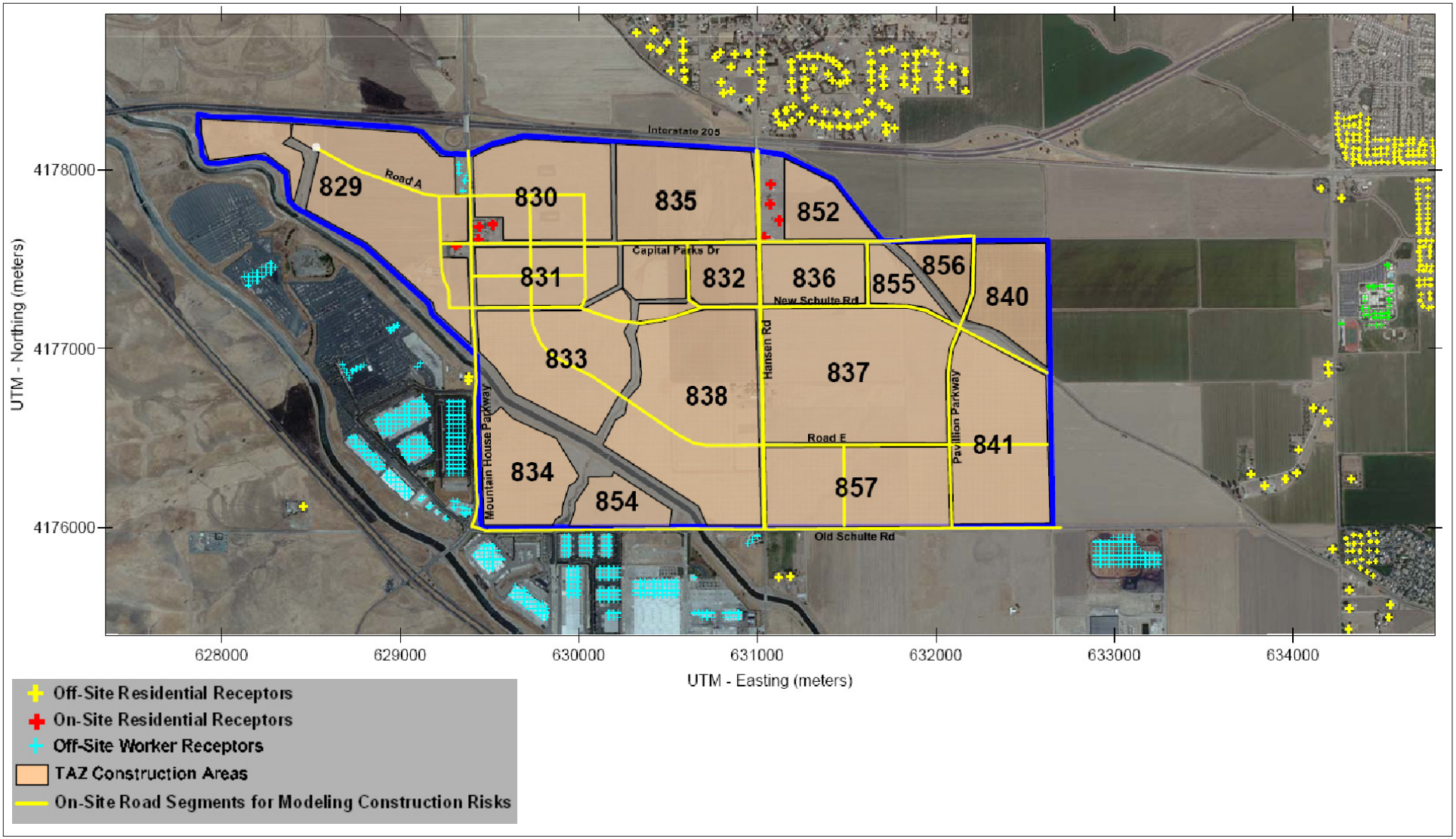
Hourly meteorological data are required by AERMOD in order to identify the direction and degree of dispersion of emissions in the atmosphere and resulting pollutant concentrations. SJVAPCD has prepared meteorological data sets that can be used with AERMOD. These data sets include hourly



Source: Illingworth & Rodkin, 2013.

FIGURE 4.3-1

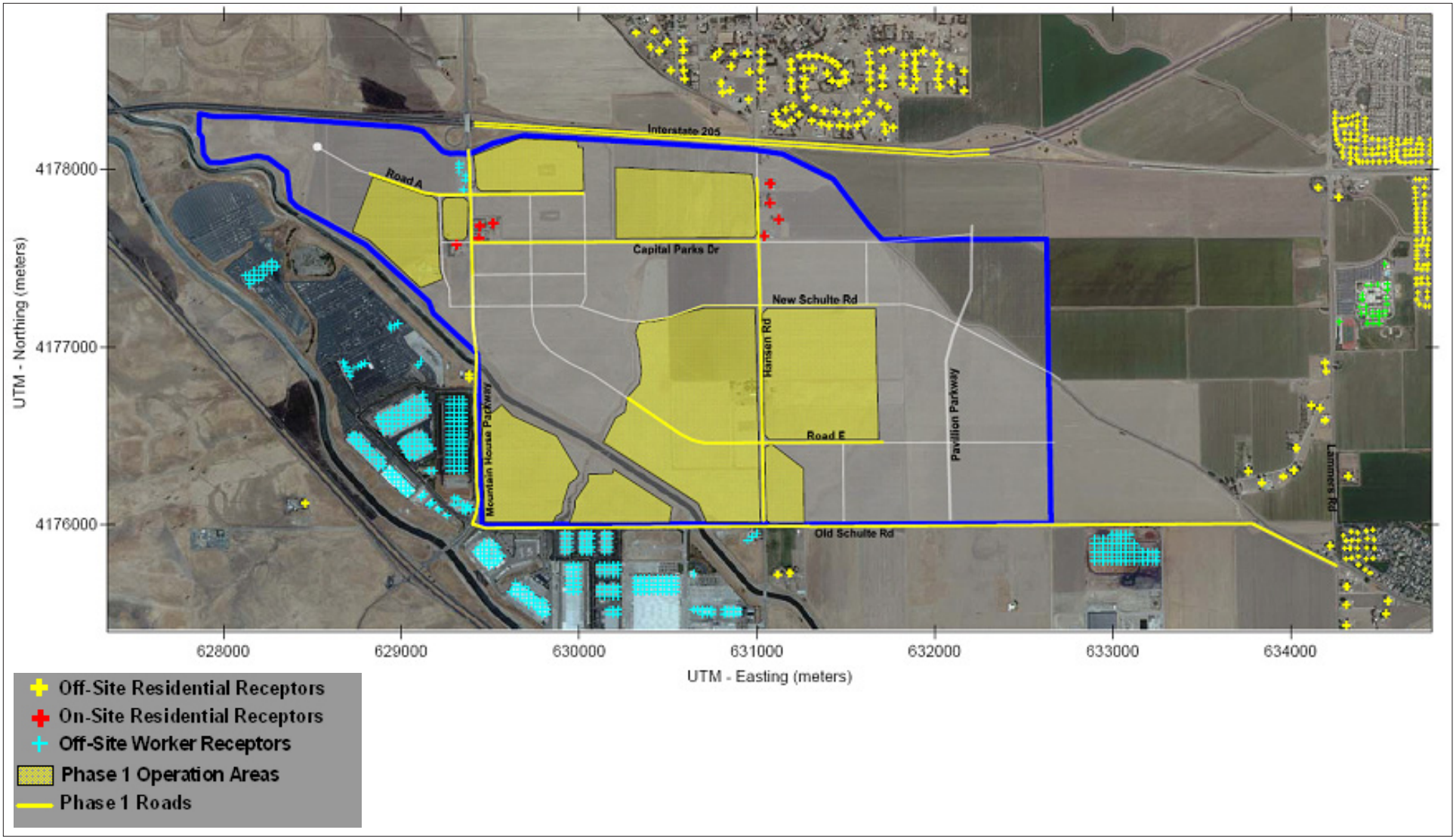
PHASE 1 CONSTRUCTION – SPECIFIC PLAN AREA, CONSTRUCTION AREAS, PHASE I ROADS, AND MODELING RECEPTOR LOCATIONS



Source: Illingworth & Rodkin, 2013.

FIGURE 4.3-2

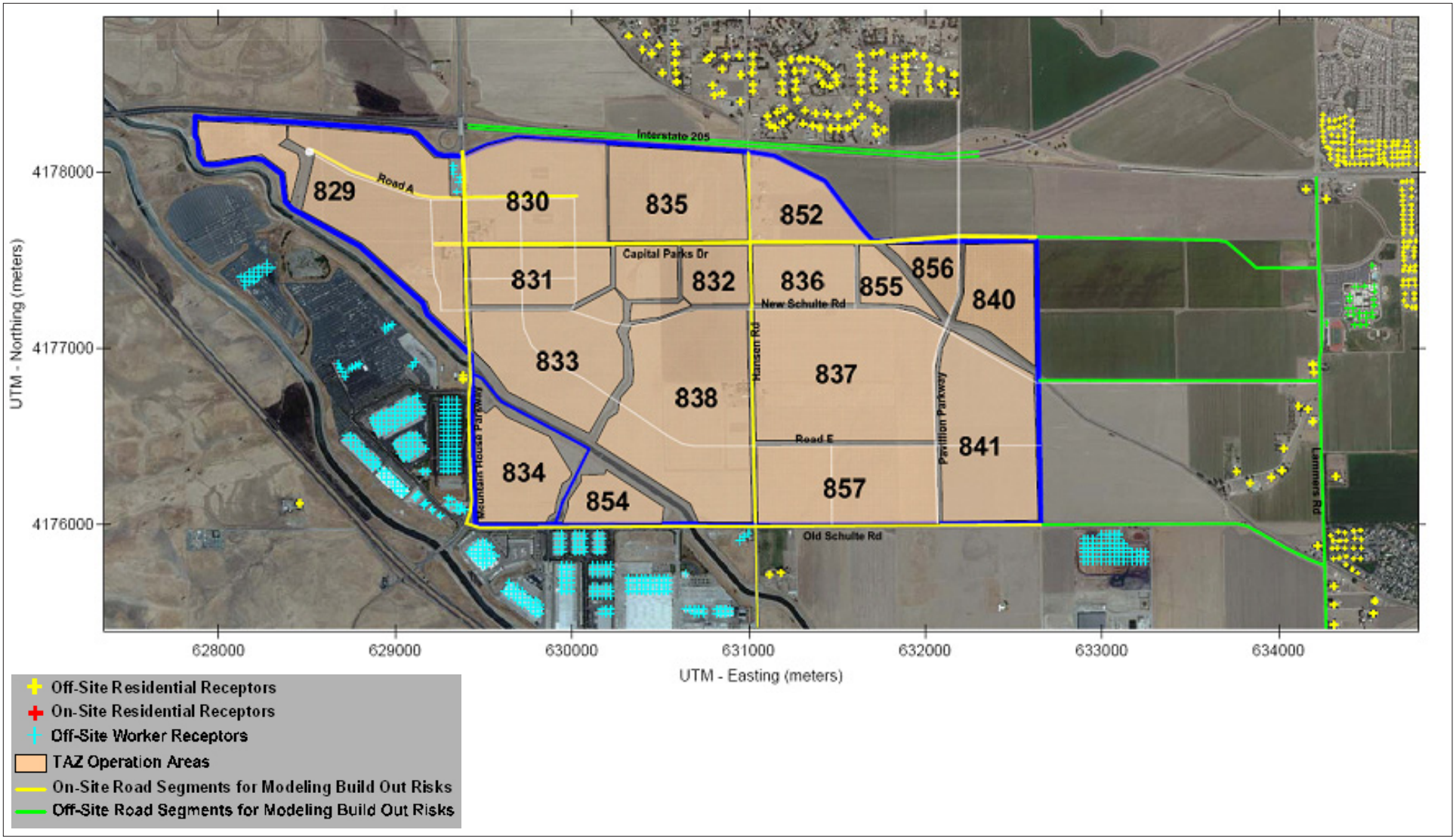
FULL BUILDOUT CONSTRUCTION – SPECIFIC PLAN AREA, CONSTRUCTION AREAS, FULL BUILDOUT ROADS, AND MODELING RECEPTOR LOCATIONS



Source: Illingworth & Rodkin, 2013.

FIGURE 4.3-3

PHASE 1 OPERATION – SPECIFIC PLAN AREA, OPERATION AREAS, PHASE 1 ROADS, AND MODELING RECEPTOR LOCATIONS



Source: Illingworth & Rodkin, 2013.

FIGURE 4.3-4

FULL BUILDOUT OPERATIONS – SPECIFIC PLAN AREA, OPERATION AREAS, ROADS, AND MODELING RECEPTOR LOCATIONS

values of wind speed and direction, air temperature, surface roughness, albedo, Bowen Ratio, and vertical temperature structure of the lower atmosphere. The SJVAPCD meteorological data set for Tracy was used for the AERMOD modeling.[25] The Tracy meteorological data site is located about 10 miles southeast of the Specific Plan Area. There is no significant intervening terrain between the Specific Plan Area and the meteorological data site, and these meteorological data are considered representative of Specific Plan Area conditions. As recommended by the SJVAPCD, the latest five years of meteorological data (2004 – 2008) available from the SJVAPCD were used for this analysis.

ii. Construction Phase

Emissions for construction were computed using the CalEEMod model for Project construction and the RoadMod model for roadway construction. Emissions from construction were assumed to occur during the hours of 7:00 am through 5:00 pm. The off-road $PM_{2.5}$ emissions were assumed to entirely consist of DPM. For Phase 1 and full buildout, the annual emissions from construction of proposed uses within each TAZ using CalEEMod and roadway construction using RoadMod were input into the AERMOD dispersion model. DPM from construction of each TAZ was input into the model as an area source. The area sources represented the anticipated area that could be developed for each Phase 1 and full buildout TAZ. Road construction emissions were modeled as line-area sources along roadways where Project road construction would occur. Since detailed construction plans are not available, emissions were distributed evenly over the construction area of each TAZ that was identified for Phase 1 and full buildout development. An emission release height of 6 meters was used for each of the areas and line sources. The elevated release height reflects the height of the buoyant plume emitted from construction equipment with elevated exhaust stacks. All area sources for Phase 1 and full buildout construction were included in the model runs.

[25] SJVAPCD website: http://www.valleyair.org/busind/pto/tox_resources/2010_Modeling/Tracy.htm. Accessed February 4, 2013.

iii. Operational Phase

Operational DPM emissions from trucks associated with the proposed Project were computed using traffic projections and the latest version of the CARB EMFAC2011 emissions model. Operational emissions were assumed to consist of diesel truck emissions associated with travel in and along the Phase 1 and full buildout areas and vehicle idling time.[26] DPM emissions for traffic were computed using emission factors from the CARB EMFAC2011 emissions model with default information for San Joaquin County along with future Project traffic volumes and vehicle mixes computed for the various roadways. EMFAC2011 is the most recent version of the CARB motor vehicle emission factor model. DPM emissions, which are $PM_{2.5}$ exhaust emission in EMFAC2011, were computed for the Project, based on the expected truck traffic that the Project would generate. Emission factors were developed for traffic conditions, based on the projected vehicle mix, by roadway segment, travel speed, and year of the analysis. The earliest buildout year was anticipated to be 2024, which would be 10 years after the earliest initial construction date. Full buildout is anticipated to occur in 2035. Emissions for Phase 1 were based on year 2024 and full buildout were based on year 2035. The EMFAC2011 model is sensitive to the year of analysis, since vehicle emissions decrease in the future.

a) Truck Travel

The traffic study predicted peak morning and evening turning movements for Phase 1 and segment volumes for full buildout (see Appendix L). Daily traffic volumes were computed assuming that the average of the AM and PM peak-hour traffic was 10 percent of the daily traffic volume. Fehr & Peers provided a predicted breakdown of the mix of trucks for the various roadway segments with the Project based on assume uses. Hourly traffic counts along Mountain House Parkway, provided by Fehr & Peers were used to develop an hourly traffic volume distribution over the entire day. To represent internal site travel for Phase 1 and full buildout TAZ, a 0.5-mile trip length was

[26] Because details of individual Project operations were not known, the inclusion of emissions from off-road or stationary/area sources was not included in the analysis.

applied to each forecasted trip. Travel speeds were assumed to be 15 mph within the TAZ areas and 45 miles per hour on surrounding roads, which is representative of the design speed for most travel roadways.

b) Truck Idling

Trucks were assumed to idle for five minutes on-site for each trip end (e.g. 10 minutes of idling per truck total).

Traffic information used to develop emissions for AERMOD is provided in Appendix D, along with other technical modeling information, including the calculation of emissions factors using EMFAC2011.

Roadway segments where Project traffic would travel were modeled as line area sources (a series of area sources along a path) along the Project roadways. An emission release height of 3 meters was used for these line sources since the majority of the DPM from vehicles is from the large heavy duty trucks. Since I-205 runs parallel along the northern boundary of the Specific Plan Area adjacent to residences, and traffic from the Project would utilize that freeway, it was included in the modeling. Only Project-generated traffic was included in the operational impact modeling. The same receptors used for the construction modeling were also used for operational modeling. Figure 4.3-1 shows the source areas and roadway segments included in the modeling, along with the residential and worker receptor locations, for construction of Phase 1 of the Project. Figures 4.3-2 shows the source areas and roadway segments included in the modeling, along with the residential and worker receptor locations for full buildout of the Project.

iv. Cancer Risk Prediction

Excess lifetime cancer risk was computed using modeled annual concentrations predicted using the AERMOD model using health risk assessment methods recommended by the California Office of Environmental Health

Hazard Assessment (OEHHA) and the SJVAPCD.[27,28] Cancer risks were calculated using the modeled concentrations along with appropriate DPM-specific risk factors. Potential cancer risks were predicted for existing residences (i.e. sensitive receptors) in and near the Specific Plan Area. Although employees are not considered sensitive receptors, as required by the SJVAPCD, cancer risk were also predicted for existing employment areas (i.e. worker exposures).

Potential cancer risks from inhalation of toxic air contaminants are calculated based on the annual average concentration, an inhalation dose, and the cancer potency of the toxic air contaminant. The inhalation dose depends on a person's breathing rate, exposure time and frequency of exposure, and the exposure duration over a 70-year lifetime period. These parameters vary depending on whether the exposure is considered to occur for a residential location, at a workplace, or at a school.

a) Breathing Rate

OEHHA and the SJVAPCD recommend using breathing rates of 393 liters per day per kilogram of body weight (L/kg-day) for residential receptors and 149 L/kg-day for workers over an 8-hour day.

b) Exposure

For purposes of ensuring a conservative assessment, the SJVAPCD assumes extensive exposure in conducting this analysis. Specifically, residential receptors are assumed to be standing outside, being exposed for 24 hours per day for 350 days per year over a 70-year period. For a worker, exposure is assumed to occur 8 hours per day for 245 days per year, for 40 years. It should be noted that the analysis for health risk because it is based on a continuous 70-year, 24-hour outdoor exposure, whereas the average period of US residen-

[27] OEHHA, 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.* Office of Environmental Health Hazard Assessment.

[28] San Joaquin Valley Air Pollution Control District, Guidance for Air Dispersion Modeling, Draft 01/07 Rev 2.0.

cy at any one location is approximately nine years and the 90th percentile of US residency (used by the US EPA and OEHHA as "reasonable maximum exposure" estimates) is 30 years.[29,30] The US Census Bureau indicates that the average person will move 11.7 times in a lifetime[31] and data collected for the Tracy area show that 44.7 percent of the people in occupied housing moved within the five-year period from 2006 to 2010.[32] Studies also have indicated that the typical person spends approximately 87 percent of the time indoors, 8 percent outdoors, and 6 percent of the time in vehicles.[33] Consequently, modeling of health risk is conservative as a result of these factors.

Using this information, unit risk factors (URFs) can be calculated. Unit risk factors represent the number of potential persons getting cancer per million people exposed to an annual average concentration of 1 $\mu g/m^3$ of a TAC. When using air quality dispersion modeling to estimate the potential cancer risks from a project, the maximum modeled annual concentrations are multiplied by a TAC-specific URF to get the probability of a person getting cancer per million persons exposed. The calculations of the DPM URFs for the different types of exposure used in this analysis are included in Appendix D.

2. While the Project is consistent with the City of Tracy General Plan's growth projections and would implement a number of transportation control measures as set forth in the Specific Plan, the Project Would

[29] US Environmental Protection Agency (US EPA), 1997. Exposure Factors Handbook. National Center for Environmental Assessment.

[30] US Environmental Protection Agency (US EPA), 2012. Handbook for Implementing the Supplemental Cancer Guidance at Waste and Cleanup Sites. Website: http://www.epa.gov/oswer/riskassessment/sghandbook/riskcalcs.htm.

[31] US Census Bureau, 2012. Calculating Migration Expectancy Using ACS Data. Website: http://www.census.gov/hhes/migration/about/cal-mig-exp.html

[32] US Census Bureau, 2012. Geographic Mobility by Selected Characteristics for Tracy City, California. Website: factfinder2.census.gov/.

[33] US Environmental Protection Agency (US EPA), 1996. The National Human Activity Pattern Survey. National Exposure Research Laboratory.

Generate Criteria Air Pollutants During Construction and Operation that Would Exceed SJVAPCD's Thresholds

SJVAPCD is tasked with implementing programs and regulations required by the federal CAA and the CCAA. SJVAPCD has prepared several plans to attain the NAAQS and CAAQS (see Section B[3][i], *Air Quality Planning*). SJVAPCD has established thresholds of significance for criteria pollutant emissions. Emission reductions achieved through implementation of SJVAPCD's offset requirements are a major component of SJVAPCD's air quality plans. Therefore, projects with emissions below the thresholds of significance for criteria pollutants would be determined to "Not conflict or obstruct implementation of the District's air quality plan."

As discussed further below, Project-related criteria air pollutants were quantified for the Project and are shown in Impact AQ-2 (construction) and Impact AQ-3 (operation). As identified in Impacts AQ-2 and AQ-3, the Project would generate a substantial increase in criteria air pollutants that would exceed the SJVACPD's significance thresholds. Therefore, the Project would be inconsistent with the SJVAPCD's air quality plans in this regard.

The GAMAQI also requires an assessment of whether the Project avoids potential land use conflicts, such as potential exposure of sensitive receptors to sources of TACs (see Impact AQ-5), sources of hazardous materials (refer to Chapter 4.8, *Hazards and Hazardous Materials*), and potential odors (see Impact AQ-7). The Project would result in a significant cumulative contribution of TACs as a result of a substantial increase in truck traffic on major roadways in the Specific Plan Area and vicinity. Consequently, the Project would be inconsistent with the SJVAPCD's air quality plans in this regard.

Regional clean air plans developed by SJVAPCD rely on local land use designations to develop population and travel projections that are the basis of future emissions inventories. Air pollution control plans are aimed at reducing these projected future emissions. As discussed in Chapter 4.12, *Population and Housing*, it is anticipated that full buildout of the Project would result in the creation of approximately 36,708 new jobs over the course of Project

buildout. The increase in industrial and commercial/office square footage anticipated with buildout of the Project is generally consistent with growth projections assumed in the Tracy General Plan for the same time horizon.

A wide variety of control measures are included in the Regional clean air plans, such as reducing or offsetting emissions from construction and traffic associated with land use developments, including Transportation Control Measures (TCMs). The Specific Plan includes goals and policies to reduce the rate of vehicle trips (VMT) associated with implementation of the Project's land uses.[34] These include, among others:

- A pedestrian-friendly central core area of office and service commercial uses that will be linked to the adjacent Central Green area by means of open space corridors, pedestrian sidewalks and bicycle paths.
- A grid pattern of through streets to create connectivity between uses, reduce VMT, orient buildings on an east-west orientation to take advantage of solar orientation, and to provide increased connectivity for pedestrians and bicycles.
- Class 1 bikeways and pedestrian paths per the City-wide Transportation Master Plan, and additional Class 1 bicycle facilities on New Schulte Road, Hansen Road and Pavilion Parkway to promote safe bicycle travel on streets with truck traffic. The PG&E easement will also include a combination Class 1 bikeway and pedestrian path to link uses to the Central Green. Additional Class 2 bikeways have been added within the central core area to provide connectivity with and to the Class 1 bikeways within Capital Parks Drive and New Schulte Road. Bicycle racks/parking areas will be included within retail, office, and manufacturing and distribution projects.

[34] For more detailed policies and action items for reducing VMT, see Chapter 7, *Natural Resources and Sustainability*, Section B, *Transportation and Land Use*, of the Specific Plan.

Individual, site-specific developments under the Specific Plan would be required to adhere to the above measures.

While the Project is consistent with the growth projections for the City, as set forth in the City's General Plan; the Project would be required to adhere to the above-referenced transportation control measures, as the Project would exceed the regional significance thresholds in terms of criteria air pollutants and TACs. Accordingly, the Project's impacts in this regard would be *significant*.

3. Construction of the Project would exceed SJVAPCD's Significant Thresholds and Cumulatively Contribute to the Ozone and Particulate Matter Non-attainment Designations of the SJVAB

a. SJVAPCD's Significance Thresholds

Construction emissions are generally referred to as temporary impacts of a project, but have the potential to represent a significant impact with respect to air quality. Fugitive particulate matter dust emissions are among the pollutants of greatest concern with respect to construction activities. These emissions from construction activities can lead to adverse health effects and nuisance concerns, such as reduced visibility and soiling of exposed surfaces. General site grading operations are the primary sources of fugitive particulate matter dust emissions. However, these emissions can vary greatly, depending on the level of activity, the specific operations taking place, the number and types of equipment operated, vehicle speeds, local soil conditions, weather conditions, and the amount of earth disturbance (e.g. site grading, excavation, cut and fill).

Emissions of ozone precursors (ROG and NO_x) are primarily generated from off-road construction equipment and mobile sources (i.e. delivery vehicles, construction worker vehicles). Generation of these emissions vary as a function of the types and number of heavy-duty, off-road equipment used and the intensity and frequency of their operation, as well as vehicle trips per day associated with delivery of construction materials, the importing and exporting of soil, vendor trips, and worker commute trips. For construction of

Phase I as well as for full project buildout, criteria air pollutant emissions were estimated using CalEEMod and RoadMod.

New road construction and road widening is necessary for implementation of the proposed Project, which would occur throughout construction of the Project. New road construction and road widening emissions were modeled using RoadMod.

i. Phase 1

Table 4.3-7 shows the results of construction emission estimates from CalEEMod modeling along with RoadMod modeling of Phase 1 by TAZ for the 10-year buildout schedule. As indicated in Table 4.3-7, emissions of ROG and NO_x would exceed the thresholds of 10 tons per year. Project-related construction emissions would also exceed the PM_{10} threshold of 15 tons per year. Criteria air pollutant emissions that exceed the SJVAPCD significance thresholds would cumulatively contribute to the ozone and particulate matter non-attainment designations of the SJVAB under the NAAQS and CAAQS.

ii. Total Construction Emissions – Full Buildout

Criteria air pollutant emissions from construction of the Project was estimated using CalEEMod, based on the default construction equipment. For the purposes of analysis in this Draft EIR, full buildout construction of the Project would occur from 2014 to 2034 and be fully operational by 2035. The first development phase would be operational by 2024. The results of modeling for full buildout are shown in Table 4.3-8. Note that the full buildout estimates reported in Table 4.3-8 also include those emissions from Phase 1. As indicated in Table 4.3-8, emissions of ROG and NO_x would exceed the thresholds of 10 tons per year. Project-related construction emissions would also exceed the PM_{10} threshold of 15 tons per year. Criteria air pollutant emissions that exceed the SJVAPCD significance thresholds would cumulatively contribute to the ozone and particulate matter non-attainment designations of the SJVAB under the NAAQS and CAAQS.

TABLE 4.3-7 **PROJECT-RELATED CONSTRUCTION EMISSIONS – PHASE 1**

	Criteria Air Pollutant Emissions (Tons/Year)[a]			
Scenario	ROG	NOx	PM_{10}[b]	$PM_{2.5}$[b]
Phase 1 – TAZ 829	11	14	1 (exhaust)	1 (exhaust)
			2 (dust)	< 1 (dust)
			3 (total)	1 (total)
Phase 1 – TAZ 830	6	8	< 1 (exhaust)	< 1 (exhaust)
			1 (dust)	< 1 (dust)
			1 (total)	1 (total)
Phase 1 – TAZ 834	15	26	1 (exhaust)	1 (exhaust)
			4 (dust)	< 1 (dust)
			5 (total)	2 (total)
Phase 1 – TAZ 835	15	26	1 (exhaust)	1 (exhaust)
			4 (dust)	< 1 (dust)
			5 (total)	2 (total)
Phase 1 – TAZ 837	26	49	2 (exhaust)	2 (exhaust)
			10 (dust)	1(dust)
			12 (total)	3 (total)
Phase 1 – TAZ 838	42	87	4 (exhaust)	3 (exhaust)
			20 (dust)	1 (dust)
			24 (total)	4 (total)
Phase 1 – TAZ 854	6	7	< 1 (exhaust)	< 1 (exhaust)
			1 (dust)	< 1 (dust)
			1 (total)	1 (total)

TABLE 4.3-7 **PROJECT-RELATED CONSTRUCTION EMISSIONS – PHASE 1**

	Criteria Air Pollutant Emissions (Tons/Year)[a]			
Scenario	ROG	NOx	PM_{10}[b]	$PM_{2.5}$[b]
Phase 1 – TAZ 857	4	7	< 1 (exhaust)	< 1 (exhaust)
			1 (dust)	< 1 (dust)
			1 (total)	< 1 (total)
New Road Construction	2	12	1 (exhaust)	1 (exhaust)
			3 (dust)	1 (dust)
			4 (total)	1 (total)
Road Widening	2	12	1 (exhaust)	1 (exhaust)
			2 (dust)	< 1 (dust)
			2 (total)	1 (total)
Total Emissions (Phase 1 Development Sites + Roadway Construction)	129	246	11 (exhaust)	10 (exhaust)
			48 (dust)	4 (dust)
			58 (total)	14 (total)
Annual Average	13	25	1 (exhaust)	1 (exhaust)
			5 (dust)	< 1 (dust)
			6 (total)	1 (total)
SJVAPCD Thresholds	10	10	15	15
Exceeds Threshold	Yes	Yes	Yes	No

Note: Bold = Emissions exceed SJVAPCD significance threshold.

[a] Emissions do not include the effects of implementing SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibition)(RoadMod only), Rule 9510 (Indirect Source Review) or Rule 9410 (Employer Based Trip Reduction).

[b] While fugitive dust emissions are excluded from ISR emissions estimates in the AIA, these emissions are considered in the CEQA impact assessments. Consequently, total emissions are compared to SJVAPCD's significance thresholds.

Source: CalEEMod, Version 2011.1.1, and RoadMod, Version 6.3.2. Emissions may not total to 100 percent due to rounding.

TABLE 4.3-8 **PROJECT-RELATED CONSTRUCTION EMISSIONS – FULL BUILDOUT**

	Criteria Air Pollutant Emissions (Tons/Year)[a]			
Scenario	ROG	NO_x	PM_{10}[b]	$PM_{2.5}$[b]
2014	1	7	< 1 (exhaust)	< 1 (exhaust)
			4 (dust)	2 (dust)
			5 (total)	2 (total)
2015	1	7	< 1 (exhaust)	< 1 (exhaust)
			3 (dust)	1 (dust)
			3 (total)	1 (total)
2016	12	74	3 (exhaust)	2 (exhaust)
			20 (dust)	1 (dust)
			23 (total)	4 (total)
2017	15	89	3 (exhaust)	3 (exhaust)
			23 (dust)	< 1 (dust)
			27 (total)	3 (total)
2018	13	82	3 (exhaust)	3 (exhaust)
			24 (dust)	< 1 (dust)
			26 (total)	3 (total)
2019	12	76	3 (exhaust)	3 (exhaust)
			24 (dust)	< 1 (dust)
			26 (total)	3 (total)
2020	12	71	3 (exhaust)	3 (exhaust)
			24 (dust)	< 1 (dust)
			26 (total)	3 (total)
2021	11	66	3 (exhaust)	2 (exhaust)
			24 (dust)	< 1 (dust)
			26 (total)	3 (total)

TABLE 4.3-8 **PROJECT-RELATED CONSTRUCTION EMISSIONS – FULL BUILDOUT**

	Criteria Air Pollutant Emissions (Tons/Year)[a]			
Scenario	ROG	NO_x	PM_{10}[b]	$PM_{2.5}$[b]
2022	10	62	2 (exhaust) 23 (dust) 26 (total)	2 (exhaust) < 1 (dust) 3 (total)
2023	10	59	2 (exhaust) 23 (dust) 26 (total)	2 (exhaust) < 1 (dust) 2 (total)
2024	9	57	2 (exhaust) 24 (dust) 26 (total)	2 (exhaust) < 1 (dust) 2 (total)
2025	9	55	2 (exhaust) 24 (dust) 26 (total)	2 (exhaust) < 1 (dust) 2 (total)
2026	9	55	2 (exhaust) 24 (dust) 26 (total)	2 (exhaust) < 1 (dust) 2 (total)
2027	9	55	2 (exhaust) 24 (dust) 26 (total)	2 (exhaust) < 1 (dust) 2 (total)
2028	9	55	2 (exhaust) 23 (dust) 25 (total)	2 (exhaust) < 1 (dust) 2 (total)
2029	9	55	2 (exhaust) 24 (dust) 26 (total)	2 (exhaust) < 1 (dust) 2 (total)

TABLE 4.3-8 **PROJECT-RELATED CONSTRUCTION EMISSIONS – FULL BUILDOUT**

	Criteria Air Pollutant Emissions (Tons/Year)[a]			
Scenario	ROG	NO_x	PM_{10}[b]	$PM_{2.5}$[b]
2030	8	49	2 (exhaust)	2 (exhaust)
			24 (dust)	< 1 (dust)
			25 (total)	2 (total)
2031	8	49	2 (exhaust)	2 (exhaust)
			24 (dust)	< 1 (dust)
			25 (total)	2 (total)
2032	5	30	1 (exhaust)	1 (exhaust)
			14 (dust)	< 1 (dust)
			15 (total)	1 (total)
2033	46	1	< 1 (exhaust)	< 1 (exhaust)
			1 (dust)	< 1 (dust)
			1 (total)	< 1 (total)
2034	169	1	< 1 (exhaust)	< 1 (exhaust)
			3 (dust)	< 1 (dust)
			3 (total)	< 1 (total)
New Road Construction and Widening	14	72	4 (exhaust)	3 (exhaust)
			22 (dust)	5 (dust)
			26 (total)	8 (total)
Total (Development Projects + Roadway)	402	1,127	43 (exhaust)	39 (exhaust)
			421 (dust)	16 (dust)
			464 (total)	55 (total)
Annual Average Development Project Emissions	20	56	2 (exhaust)	2 (exhaust)
			21 (dust)	1 (dust)
			23 (total)	3 (total)

TABLE 4.3-8 **PROJECT-RELATED CONSTRUCTION EMISSIONS – FULL BUILDOUT**

	Criteria Air Pollutant Emissions (Tons/Year)[a]			
Scenario	ROG	NO_x	PM_{10}[b]	$PM_{2.5}$[b]
SJVAPCD Thresholds	10	10	15	15
Exceeds Threshold	Yes	Yes	Yes	No

Note: **Bold** = Emissions exceed SJVAPCD significance threshold.
[a] Emissions do not include the effects of implementing Rule 9510 (Indirect Source Review) or Rule 9410 (Employer Based Trip Reduction).
[b] While fugitive dust emissions are excluded from ISR emissions estimates in the AIA, these emissions are considered in the CEQA impact assessments. Consequently, total emissions are compared to SJVAPCD's significance thresholds.
Source: CalEEMod, Version 2011.1.1 and RoadMod, Version 6.3.2. Emissions may not total to 100 percent due to rounding.

b. Consistency with SJVAPCD Regulation VIII – Fugitive Dust Control

As part of the development process for individual, site-specific projects under the Specific Plan, applicants would be required to develop and obtain approval of a Fugitive Dust Control Plan (from the City or SJVAPCD, as appropriate) to mitigate, as feasible, fugitive dust emissions to satisfy the requirements set forth under then-applicable SJVAPCD Rules and Regulations, including, without limitation, Regulation VIII. The effect of this rule would, at a minimum, reduce PM_{10} fugitive dust emissions by approximately 55 percent. As a result, annual average PM_{10} emissions would be reduced from 22 tons per year to 11 tons per year. The maximum annual fugitive dust emissions of 27 tons per year would be reduced to 14 tons per year.

c. Consistency with SJVAPCD Rule 9510

The SJVAPCD Indirect Source Review Rule (Rule 9510) applies to construction of the proposed Project. As part of the development process for individual, site-specific projects under the Specific Plan, each applicant would be required, to the extent specific development at issue is subject to Rule 9510, to

prepare a detailed air impact assessment (AIA). To the extent applicable under Rule 9510 for each such individual development, SJVAPCD would require calculation of the construction and operational emissions from the development at issue. The purpose of the AIA is to confirm a development's construction exhaust emissions, and therefore be able to identify appropriate mitigation, either through implementation of specific mitigation measures or payment of applicable off-site fees. Under Rule 9510, each project that is subject to this Rule would be required to reduce construction exhaust emissions by 20 percent for NO_x and 45 percent for PM_{10}[35] or pay offset mitigation fees for emissions that do not achieve the mitigation requirements. Offset fees would be calculated in accordance with the procedures identified in the Rule 9510 and approved by the SJVAPCD.

d. Conclusion

It is anticipated that individual site–specific projects under the Specific Plan may be subject to SJVAPCD Regulation VIII and Rule 9510. Implementation of Regulation VIII and Rule 9510 would result in the Project using less-polluting construction equipment, including newer equipment or retrofitting older equipment would reduce construction emissions on-site, as well as implementation of measures to reduce construction emissions; nevertheless, Project emissions would exceed the SJVAPCD significance thresholds of ROG and NO_x and PM_{10} prior to mitigation, and would cumulatively contribute to the ozone and particulate matter non-attainment designations of the SJVAB. Therefore, construction impacts of the Project are *significant*.

4. Operation of the Project would exceed SJVAPCD's Significant Thresholds and Cumulatively Contribute to the Ozone and Particulate Matter Non-attainment Designations of the SJVAB

a. SJVAPCD's Significance Thresholds

Long-term operational emissions would be generated from the day-to-day operations of the Project. Operational emissions for land use development projects are typically distinguished as mobile, energy, and area sources of

[35] While this rule would not directly affect ROG emissions, it would likely indirectly reduce ROG.

emissions. Mobile-source emissions are those associated with vehicles coming to and leaving a project site, which include (in this case) customer, employee and delivery vehicles. Energy sources of emissions are associated primarily with natural gas combustion for space and water heating. Area-source emissions are those associated with landscape maintenance activities, use of consumer products, and periodic architectural coatings.

Mobile source emissions constitute the vast majority of operational emissions from these types of land use development projects; compared to mobile source emissions, area-source emissions and energy sources of emissions are negligible. Mobile source emissions associated with the operational phase of the proposed Project, comprised of criteria air pollutants, were modeled using trip generation provided by Fehr & Peers and modeled using CalEEMod for Phase 1 and buildout of the Project. For Phase 1, 2024 was used as the earliest possible buildout year. The Project's operational emission estimates at buildout were computed for the year 2035. The Project's operational period emissions estimates are presented in Table 4.3-9. As indicated in Table 4.3-9, operational period emissions are estimated to exceed Project-level SJVAPCD significance thresholds for ROG, NO_x, CO, and PM_{10}. Criteria air pollutant emissions that exceed the SJVAPCD significance thresholds would cumulatively contribute to the ozone and particulate matter non-attainment designations of the SJVAB under the NAAQS and CAAQS.

The SJVAPCD evaluates permitted sources under their New and Modified Source Review program to ensure that emissions from permitted sources do not exceed the federal standards (which also ensure they do not generate a health risk). Specifically, Regulation II (Permits) requires stationary sources to obtain permits, and includes Rule 2010 that specifies requirements, Rule 2201 for review of new or modified stationary sources and implements emissions reduction and banking requirements specified in Rule 2301. According to SJVAPCD GAMAQI, Regulation II ensures that stationary source emissions (permitted sources) will be reduced or mitigated below SJVAPCD significance thresholds.

TABLE 4.3-9 **PROJECT OPERATIONAL PERIOD EMISSIONS**

	Criteria Air Pollutant Emissions (Tons/Year)[a]				
Scenario	ROG	NO_x	CO	PM_{10}[b]	$PM_{2.5}$[b]
Phase 1 – TAZ 829	10	23	37	9	1
Phase 1 – TAZ 830	9	31	48	11	1
Phase 1 – TAZ 834	10	15	24	6	1
Phase 1 – TAZ 835	10	15	24	6	1
Phase 1 – TAZ 837	17	24	40	10	1
Phase 1 – TAZ 838	26	37	61	16	1
Phase 1 – TAZ 854	4	6	10	3	< 1
Phase 1 – TAZ 857	3	4	7	2	< 1
Phase 1 Buildout (2024)	95	161	261	65	5
Full Buildout (2035)	217	394	599	196	14
SJVAPCD Thresholds	10	10	100	15	15
Exceeds Threshold	Yes	Yes	Yes	Yes	No

[a] Emissions do not include the effects of implementing Rule 9510 (Indirect Source Review) or Rule 9410 (Employer Based Trip Reduction).
[b] While fugitive dust emissions are excluded from ISR emissions estimates in the AIA, these emissions are considered in the CEQA impact assessments. Consequently, total emissions are compared to SJVAPCD's significance thresholds.
Source: CalEEMod, Version 2011.1.1.

While the Project's CO emissions during operation would exceed the significance thresholds set by SJVAPCD, they are not considered significant unless they cause or contribute to violations of AAQS. Currently, the SJVAB attains both State and Federal ambient AAQS for CO. The effect of the Project's CO emissions on ambient air quality is further analyzed under Impact 4 below.

b. Consistency with SJVAPCD Rule 9510

Similar to construction, operation of individual development projects constructed under the Specific Plan would be subject to SJVAPCD's Indirect Source Review (Rule 9510) to reduce NO_x and PM_{10} emissions. To the extent applicable under Rule 9510, as a part of the development process for each individual, site-specific project under the Specific Plan, the development at issue would be required to reduce operational NO_x emissions by 33 percent and operational PM_{10} emissions by 50 percent over 10 years or pay offset mitigation fees for emissions that do not achieve the mitigation requirements. Rule 9510 only requires offsets to be effective for 10 years. The actual required reductions would be determined by SJVAPCD when an application is submitted prior to the last discretionary approval for each individual site-specific project under the Specific Plan. Emissions of NO_x, PM_{10}, and to some extent ROG emissions, would be reduced with compliance with Rule 9510. Individual development projects would be required to adhere to the requirements of SJVAPCD Rule 9510, as applicable.

c. Conclusion

Each individual, site-specific development under the Specific Plan would be subject to compliance with SJVAPCD Rule 9510, as applicable. As required under Rule 9510, Project applicants would be required to implement a combination of on-site and off-site measures to reduce operational phase emissions. However, despite reductions in emissions as a result of site-specific measures, for purposes of this analysis, the Project would exceed the SJVAPCD significance threshold, and would cumulatively contribute to the ozone and particulate matter non-attainment designations of the SJVAB. Therefore, this impact is considered *significant.*

5. Operation of the Project would Violate or Contribute Substantially to an Existing or Projected an Ambient Air Quality Standard Violation.

a. Carbon Monoxide Hot Spots

The primary mobile-source pollutant of localized concern is CO. Localized CO concentrations near roadway intersections are a function of traffic vol-

ume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. Under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels with respect to sensitive receptors, often referred to as a "CO hotspot." CO hotspots are high, localized CO concentrations and are generally caused by congested intersections with a large volume of traffic.

Monitoring data from all ambient air quality monitoring stations in the San Joaquin Valley indicate that existing CO levels are currently below national and California ambient air quality standards. The San Joaquin Valley has been designated as an attainment area for the CO standards. The highest measured level in Tracy during the past three years was 2.29 ppm for the eight-hour averaging periods. Even though current CO levels in the San Joaquin Valley are well below ambient air quality standards, elevated levels of CO still warrant analysis. CO hotspots could still occur near busy congested intersections. Accordingly, the three highest volume intersections in the Specific Plan Area were modeled for CO hot spots for both Phase 1 and for full buildout (based on the traffic analysis prepared for the Project).

CO hot spot modeling was performed using CALINE4 with weighted 2024 and 2035 vehicle emissions factors from EMFAC2011 for Phase 1 and full buildout, respectively. The three modeled intersections for 2024 Phase 1 were as follows: 1) W. 11th Street and Lammers; 2) Mountain House Parkway and Road A; and 3) Mountain House Parkway and I-205 Eastbound Ramps. The three modeled intersections for 2035 full buildout were as follows: 1) Lammers Extension and Commerce Way; 2) Lammers Extension and I-205 Eastbound Ramps; and 3) Lammers Extension and I-205 Westbound Ramps. Table 4.3-10 shows the predicted CO concentrations for the Project at the most affected receptor for each of the six total intersections.

TABLE 4.3-10 **CO HOT SPOT MODELING RESULTS, PARTS PER MILLION (PPM)**

	CO Concentrations (parts per million, ppm)		
Intersection Scenario	Modeled 8-Hour Project CO Impact	Background 8-Hour CO Concentration[a]	Predicted 8-Hour Specific Plan CO
Phase 1			
W. 11th & Lammers	0.42	2.29	2.71
MHP & Road A	0.35	2.29	2.64
MHP & I-205 EB Ramps	0.42	2.29	2.71
Full Buildout			
Lammers Ext. & Commerce	0.63	2.29	2.92
Lammers Ext. & I-205 EB Ramps	0.77	2.29	3.06
Lammers Ext. & I-205 WB Ramps	0.63	2.29	2.92

[a] California Air Resources Board (CARB), 2013. Air Pollution Data Monitoring Cards (2009, 2010, and 2011), http://www.arb.ca.gov/adam/index.html, accessed 2/25/2013.
Source: CALINE4.

The CAAQS and NAAQS for 8-hour CO is 9.0 ppm. As shown in Table 4.3-10, the three highest volume intersections in the Specific Plan Area under both the Phase 1 and full buildout scenarios would be well below the established standard for CO and the impact of the Project related to ambient air quality CO concentrations would therefore be *less than significant*.

b. Other Criteria Air Pollutants for Which the Region is in Nonattainment for – Ozone Precursors (NO_x) and Particulate Matter

The region is classified as nonattainment for ozone, PM_{10} and $PM_{2.5}$. As described above in Impact 2 (construction phase) and Impact 3 (operational

phase), individual site-specific development projects under the Specific Plan have the potential to result in construction and operational emissions that exceed the thresholds established by SJVAPCD for ROG, NO_x, and PM_{10}. These thresholds include precursor pollutants for ozone and particulate matter (i.e. PM_{10} and $PM_{2.5}$). Projects that have emissions above these thresholds are considered to cause a cumulatively considerable net increase in emissions that could contribute or cause the exceedance of a nonattainment air pollutant. Project-related criteria air pollutant emissions would therefore have the potential to result in elevated concentrations of O_3, NO_2, and PM_{10} that have the potential to exceed the AAQS. Therefore, the impact is considered *significant.*

6. Operation of the Project would Expose Sensitive Receptors to Substantial Toxic Air Contaminants

DPM would be emitted from diesel-fueled vehicles and equipment during construction activities and from diesel trucks generated by the proposed Project during operation. The particulate matter component of diesel exhaust has been classified as a TAC by CARB based on its potential to cause cancer and other adverse health effects. A health risk evaluation was conducted to assess the potential health effects of the proposed Project's DPM emissions on nearby sensitive receptors.

Potential cancer risks were predicted for residences (i.e. sensitive receptors) in and near the Specific Plan Area. Although employees are not considered sensitive receptors, per SJVAPCD requirements, cancer risk was also predicted for existing employment areas (i.e. worker exposures). Health risks were calculated using health risk assessment methods recommended by OEHHA and the SJVAPCD,[36] as discussed more fully above.[37] The health risk assessment method includes calculation of ambient DPM concentrations

[36] OEHHA, 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.* Office of Environmental Health Hazard Assessment. August 2003.

[37] San Joaquin Valley Air Pollution Control District, Guidance for Air Dispersion Modeling, Draft 01/07 Rev 2.0.

at receptor locations using an air quality dispersion model, and then calculating cancer risks using the modeled concentrations along with appropriate DPM-specific risk factors.

a. Phase 1 – 2024

Table 4.3-11 summarizes the potential increased total cancer risks due to DPM emissions at the locations of the overall maximum residential and off-site worker cancer risks. As explained above, cancer risks for residential exposures from operation were calculated assuming that would occur at the Phase 1 emission level over a 70-year period. Maximum residential cancer risks are presented for both on-site and off-site residential receptors. On-site residential receptors are those residences that are located within the Specific Plan Area boundaries and may or may not remain as the Project is developed. As shown in Table 4.3-11, the Project would result in a potential increase in cancer risk for on-site residents if they remain on-site for 60 years after Phase 1 is constructed. The risk to on-site residents, assuming the maximum combined construction and operations scenario, would be equivalent to approximately 20.5 new cases per million persons for receptors within the Specific Plan Area. This risk would exceed the 10 cases per million that is considered significant by the SJVAPCD and CARB. Under this same combined maximum scenario, cancer risk at sensitive receptors adjacent to the Specific Plan Area would have risk of up to 7.6 new cases per million persons and would not exceed the SJVAPCD significance threshold. Similarly, the off-site worker cancer risk would be up to 2.6 excess cancer cases per million and would not exceed the SJVAPCD significance threshold. The location of the maximum exposed individual cancer risk is shown in Figure 4.3-5.

b. Full Buildout – 2035

Full buildout of the Project would be constructed over at least a 20+-year period. It would include the health risks computed under Phase 1 plus impacts from construction and operation that could occur during and after completion of full buildout of the Project. The health risk assessment for Phase 1 captures the near-term impacts, which would be greater, since

TABLE 4.3-11 **INCREASED CANCER RISKS (PER MILLION) FROM PHASE 1 OF THE SPECIFIC PLAN**

Scenario	Cancer Risk at the MEI (per million)		
	On-Site[a] Residential Exposure	Off-Site[b] Residential Exposure	Off-Site[c] Worker Exposure
Maximum Construction	1.3	0.5	0.4
Maximum Operation	19.2	7.5	2.2
Maximum from Combined Construction and Operation	20.5	7.6	2.6
SJVAPCD Threshold	≥ 10 in 1 million	≥ 10 in 1 million	≥ 10 in 1 million
Exceeds Threshold	Yes	No	No

[a] Maximum residential cancer risk from construction and operation occurred at a residence at the intersection of Mountain House Parkway and Capital Parks Drive (new Project road).
b Maximum off-site residential cancer risk from operation occurred at the residences closest to Interstate 205 north of the Specific Plan area.
[c] Maximum off-site worker cancer risk occurred at the fire station at the southwest corner of Old Schulte Rd and Hansen Rd.
Source: Illingworth & Rodkin, Inc.

emissions rates from construction equipment and trucks would be higher in earlier years. These emission rates would decrease in the future, due to improved emission reduction technologies. Health risks from full buildout of the Project were calculated based on buildout at 2035. At full buildout, all on-site residential locations are assumed to be redeveloped with the land uses as outlined in the Specific Plan. Therefore, the only sensitive land uses would be the off-site residential areas adjacent to portions of the Specific Plan Area and off-site workers. Increased cancer risks were calculated assuming that construction of the Project at full buildout would occur over a 20-year period. This analysis assumes that cancer risks from Phase 1 operation would occur over a 10-year period, and the construction for the remaining portions of the Project would commence, with cancer risks associated with full buildout to

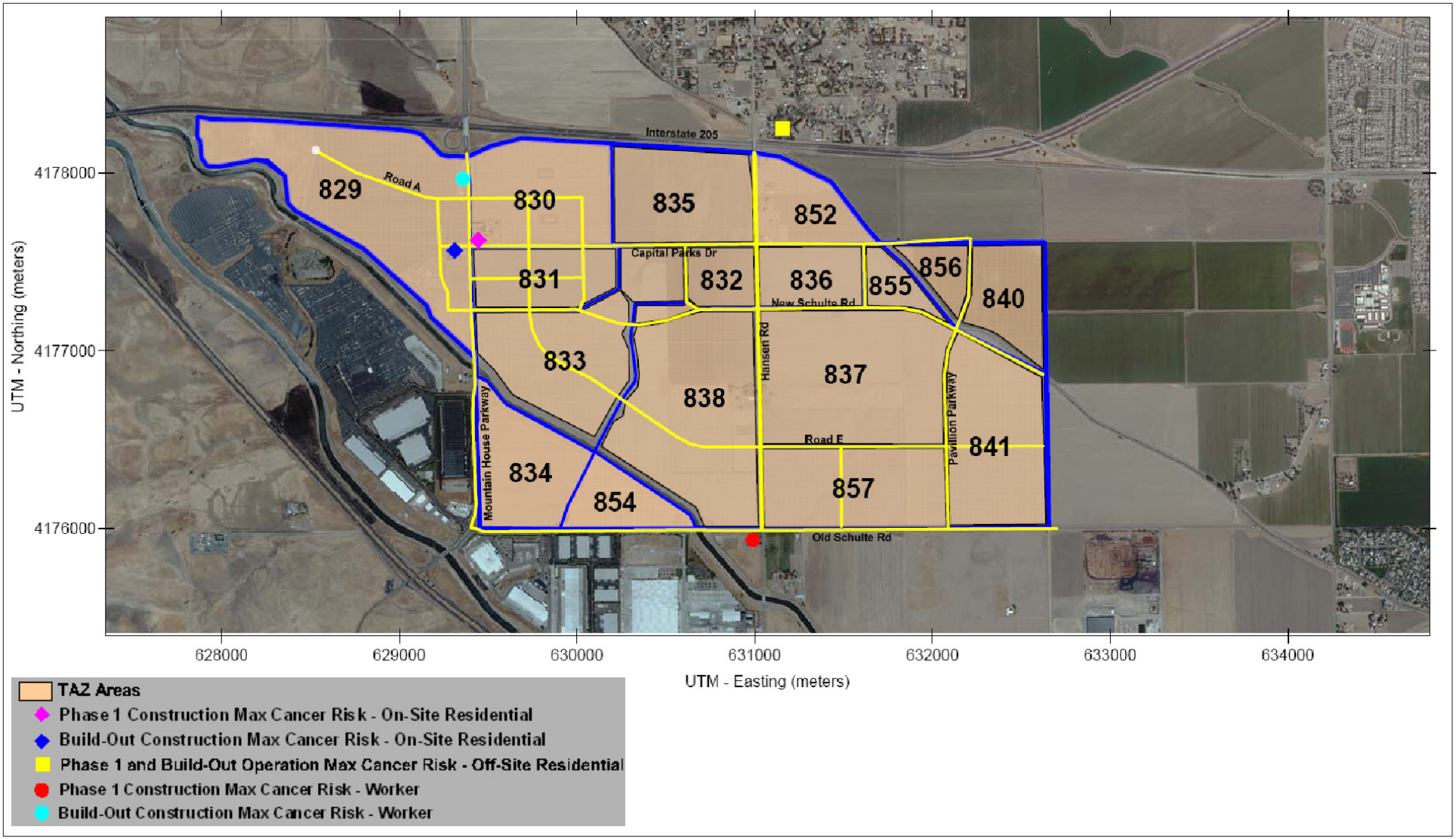
occur for an additional 50 years. The excess cancer risk for full buildout of the Project is shown in Table 4.3-12.

The location of the maximum cancer risks associated with construction and full buildout of the Project are also shown in Figure 4.3-5. For full buildout in 2035, on-site receptors are not assumed to be present. Under the maximum combined construction/operations scenario for Full Buildout, the increased cancer risk for off-site residential receptors would be 10.2 per million. Under this same scenario, the increased cancer risk for off-site workers would be 2.7 per million.

The primary source of TAC emissions leading to this impact would be from diesel trucks generated by the Project traveling on major arterials and freeways in the Project vicinity. Construction activities, particularly given the scope of the Project, would contribute to the predicted cancer risk. Pursuant to Rule 9510, individual site-specific developments under the Specific Plan would be required, as applicable, to reduce construction exhaust PM_{10} emissions by 45 percent and operational PM_{10} emissions by 50 percent over 10 years or pay offset mitigation fees for emissions that do not achieve the mitigation requirements. These reductions would also include reductions in exhaust $PM_{2.5}$ emissions that are considered in this analysis to be DPM. Although on-site emissions reductions would likely be pursued, because they are less costly to implement, a portion of the reductions may come from offsets that would not affect Project on-site emissions. Therefore, the effect of Rule 9510 on on-site DPM emissions and the effect to the health risk assessment in terms of cancer risk cannot be reasonably predicted. The cancer increase of greater than 10 cases per million people would be a *significant* impact.

c. Day Care Centers

Day care centers are an allowed use within the Specific Plan Area. At this time, the exact location of day care centers is unknown. However, based on the results of the health risk modeling shown in Table 4.3-11 and 4.3-12, day care centers have the potential to be exposed to elevated concentrations of



Source: Illingworth & Rodkin, 2013.

FIGURE 4.3-5

LOCATIONS OF MAXIMUM CANCER RISK FOR PHASE 1 AND FULL BUILDOUT

TABLE 4.3-12 **INCREASED CANCER RISKS ESTIMATED FOR FULL BUILDOUT OF THE PROJECT**

Scenario	Cancer Risk at the MEI (per million)	
	Off-Site[a] Residential Exposure	Off-Site[b] Worker Exposure
Maximum Construction	0.4	0.4
Maximum Operation (Phase 1 for 10 years, 2024-2035)	9.8	2.3
Maximum from Combined Construction and Operation	10.2	2.7
SJVAPCD Threshold	≥ 10 in 1 million	≥ 10 in 1 million
Exceeds Threshold	Yes	No

[a] Maximum off-site residential cancer risk from operation occurred at the residences closest to Interstate 205 north of the Specific Plan area.
[b] Maximum off-site worker cancer risk occurred at the PG&E facility in the northwestern portion of the Plan Area near Mountain House Parkway.
Source: Illingworth & Rodkin, Inc.

TACs and may be exposed to cancer risks that exceed ten in one million. This is a *significant* impact of the Project.

7. The Project would not Create Substantial Objectionable Odors

Odors are assessed based on the potential of the Project to result in odor complaints. This could result from the Project constructing and operating uses that produce objectionable odors or place people near sources of objectionable odors.

Significant odor sources are not currently located within the Specific Plan Area; therefore, new uses are not likely to be affected by existing odor sources. However, new sources of odors may be generated from land uses permitted or conditionally permitted under the Specific Plan. Pursuant to

SJVAPCD's GAMAQI, the intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. To assist with evaluating potential odor impacts, SJVAPCD has identified a list of common types of facilities that have been known to produce odors in the SJVAB along with a reasonable distance from the source within which, the degree of odors could be significant, which is included as Table 4.3-13.

The proposed Project could include new restaurants, which can be a source of odor complaints. However, the Specific Plan includes policies that would prohibit the siting of new restaurants directly adjacent to existing residences, so odor complaints are unlikely. Additionally, odors generated by most restaurants are not considered the type of land uses that generate nuisance odors that affect a substantial number of people (refer to Table 4.3-13).

Construction and development of the Project would also typically require the application of paints and the paving of roads, which could generate odors. As these odors are relatively short term and quickly disperse into the atmosphere, this is not considered significant. Future development would involve minor odor-generating activities, such as lawn mower exhaust and application of exterior paints for building improvement. These types and concentrations of odors are typical of developments and are not considered significant air quality impacts.

Major sources of nuisance odors are listed in Table 4.3-13. The majority of these types of land uses would not occur within the Cordes Ranch Specific Plan. However, the Business Park Industrial category would allow manufacturing, assembly, and production uses and could permit some of the uses listed in Table 4.3-13.

However, the Project would be subject to SJVAPQD's applicable rules and regulations, including Rule 4102, which govern nuisance and objectionable odors. To the extent required by the District, the development at issue shall

TABLE 4.3-13 **SCREENING LEVELS FOR POTENTIAL ODOR SOURCES**

Type of Facility	Distance
Wastewater Treatment Facility	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g. auto body shop)	1 mile
Food Processing Facilities	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile

Source: San Joaquin Valley Air Pollution Control District (SJVAPCD). 2012. Draft Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI).

adhere to any requirements imposed by the District to implement the applicable Best Available Control Technologies for Toxics (T-BACTs), based on the District's policies and procedures. Accordingly, compliance with applicable laws and regulations would ensure that impacts in this regard are *less than significant*.

8. Cumulative Impacts

The SJVAPCD has developed criteria to determine if a project could result in potentially significant regional emissions. According to Section 4.3.2 of the GAMAQI, *Thresholds of Significance for Impacts from Project Operations*, any

proposed project that would individually have a significant air quality impact (i.e. exceed significance thresholds for ROG, NO_x or PM) would also be considered to have a significant cumulative air quality impact. Impacts of local pollutants (CO) are cumulatively significant when modeling shows that the combined emissions from the Project and other existing and planned projects will exceed air quality standards.

a. Regional Air Pollutants

As discussed above, cumulative ozone impacts would be considered significant only if project-specific emissions would exceed the SJVAPCD significance thresholds for ozone precursors ROG or NO_x, or the project is not consistent with the regional clean air plan. As discussed previously, the Project would have emissions of ozone precursor pollutants (ROG and NO_x) and PM_{10} that were found to be significant. Therefore, the Project's contribution to cumulative regional air quality impacts would be cumulatively considerable.

b. Local Air Pollutant Emissions

CO levels from vehicles on roadways in the vicinity of the Specific Plan Area under cumulative conditions for 2024 and 2035 (i.e. existing plus Project in Table 4.3-10) are predicted to be well below the applicable standards. As such, the cumulative CO impacts would be less than significant under near-term and far-term cumulative conditions.

The region is classified as nonattainment for ozone, PM_{10} and $PM_{2.5}$. Individual site-specific developments under the Specific Plan have the potential to result in construction and operational emissions on-site that would exceed the thresholds established by SJVAPCD. These thresholds include precursor pollutants for ozone and particulate matter (i.e. PM_{10} and $PM_{2.5}$). Projects that have emissions above these thresholds are considered to cause a cumulatively considerable net increase in emissions that could contribute or cause the exceedance of a nonattainment air pollutant. Therefore, the Project's contribution to cumulative air quality impacts on a local level would also be cumulatively considerable.

c. Cumulative Toxic Air Pollutant Impacts

According to the GAMAQI, any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. If a project exceeds a 10 in one million cancer risk, TACs generated by that project would be considered to cumulatively contribute to health risk in the SJVAB. Since the proposed Project would result in an increased cancer risk of greater than 10 in one million persons under certain conditions, the cumulative impacts due to TAC exposure would be significant.

d. Summary of Cumulative Contribution to Air Quality Impacts

The Project would contribute to projected regional air quality impacts as well as local cumulative air quality impacts with respect to particulate matter and health risk due to TAC exposure. As a result, this cumulative impact would be considered *significant*.

F. Impacts and Mitigation Measures

Impact AQ-1: While the Project is consistent with the City of Tracy General Plan's growth projections and would implement a number of transportation control measures as set forth in the Specific Plan, as identified above, the Project would exceed the regional significance thresholds and the Project's cumulative contribution to criteria air pollutants and TACs. For this reason and to ensure a conservative analysis, this evaluation treats this as an inconsistency with SJVAPCD's air quality plans. Mitigation Measures AQ-2a and AQ-2b and Mitigation Measures GHG-1b through GHG-1d would reduce emissions, to the extent feasible. Because the Project's emissions cannot be reduced to a less than significant level, the impact in this regard would be considered *significant and unavoidable*.

Mitigation Measure AQ-1: Implement Mitigation Measures AQ-2a and AQ-2b and Mitigation Measures GHG-1b through 1d.

Significance after Mitigation: S*ignificant and unavoidable*.

Impact AQ-2: Construction of the Project could emit significant levels of ROG, NO_x and PM_{10}, and would cumulatively contribute to the ozone and particulate matter non-attainment designations of the SJVAB. While feasible mitigation measures would be imposed (as set forth below), due to the nature and scope of the Project along with its anticipated buildout horizon, construction period emissions would be considered *significant and unavoidable.*

Mitigation Measure AQ-2a: Each applicant for individual, site-specific developments under the Specific Plan shall comply with the San Joaquin Valley Air Pollution Control District (SJVAPCD) rules and regulations, including, without limitation, Indirect Source Rule 9510. The applicant shall document, to the City's reasonable satisfaction, its compliance with this mitigation measure.

Mitigation Measure AQ-2b: Prior to issuance of a grading permit by the City of Tracy, the applicant for an individual, site-specific development under the Specific Plan shall be required to develop and obtain approval of a fugitive dust and emissions control plan to mitigate, as feasible, the identified impacts, which satisfies the requirements set forth under then-applicable SJVAPCD Rules and Regulations, including, without limitation, Regulation VIII. Depending on the size, location and nature of the individual development at issue, the fugitive dust and emissions control plan shall consider the following mitigation measures, for example:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover;
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant;
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled

of fugitive dust emissions utilizing application of water or by presoaking;

- When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inched of freeboard space from the top of the container shall be maintained;
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.);
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant;
- Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday;
- Any site with 150 or more vehicle trips per day shall prevent carryout and trackout;
- Limit traffic speeds on unpaved roads to 15 mph;
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the Specific Plan Area;
- Adhere to Regulation VIII's 20 percent opacity limitation, as applicable;
- Use of construction equipment rated by the United States Environmental Protection Agency (US EPA) as having Tier 3 or higher exhaust emission limits for equipment over 50 horsepower that are on-

site for more than 5 days, if available and feasible. Tier 3 engines between 50 and 750 horsepower are available for 2006 to 2008 model years. After January 1, 2015, encourage the use of equipment over 50 horsepower that are on-site for more than 5 days to meet the Tier 4 standards, if available and feasible. A list of construction equipment by type and model year shall be maintained by the construction contractor on-site, which shall be available for City review upon request.

- Use of alternative-fueled or catalyst-equipped diesel construction equipment, if available and feasible; and
- Clearly posted signs that require operators of trucks and construction equipment to minimize idling time (e.g. 5-minute maximum).

Significance After Mitigation. The above mitigation measures would reduce the identified impacts to the extent feasible. However, despite imposition of these mitigation measures, it is not certain that the identified impacts can be mitigated to less than significant levels. As a result, the impact is *significant and unavoidable.*

Impact AQ-3: Operation of the Project could emit significant levels of ROG, NO_x, CO, and PM_{10}, and would cumulatively contribute to the ozone and particulate matter non-attainment designations of the SJVAB. Due to the operational emissions, this would remain significant with mitigation.

Mitigation Measure AQ-3: Adhere to Mitigation Measures GHG-1b through GHG-1d, also included in Chapter 4.7 (Greenhouse Gas Emissions), repeated below:

Mitigation Measure GHG-1a: Applicants for individual, site-specific developments shall conform to the then-applicable requirements of the California Building Code, including the Green Code's provisions relating to "solar readiness." Applicants will be encouraged to utilize or otherwise facilitate the use of alternative energy generation technologies, as feasible, to offset their energy consumption, by, for ex-

ample, ensuring that roof structures are built such that they can accommodate the weight of solar panels in accordance with the California Building and Energy Standards; providing for energy storage within their buildings; and installing electrical switch gears to facilitate solar usage.

Mitigation Measure GHG-1b: Prior to issuance of a building permit for an individual, site-specific development that requires refrigerated vehicles, the construction documents shall demonstrate an adequate number of electrical service connections at loading docks for plug in of the anticipated number of refrigerated trailers to reduce idling time and emissions.

Mitigation Measure GHG-1c: Applicants for individual, site-specific developments with truck delivery and loading areas, and truck parking spaces, shall include signage as a reminder to limit idling of vehicles while parked for loading/unloading in accordance with California Air Resources Board Rule 2845 (13 CCR Chapter 10 §2485).

Mitigation Measure GHG-1d: Applicants for individual, site-specific developments shall identify in the grading plans that non-essential idling of construction equipment and vehicles shall be restricted to no more than 5 minutes in accordance with California Air Resources Board Rule 2485 (13 CCR Chapter 10 §2485).

Significance after Mitigation: The above mitigation measures would reduce the identified impacts to the extent feasible. However, despite imposition of these mitigation measures, it is not certain that the identified impacts can be mitigated to less than significant levels. As a result, the impact is *significant and unavoidable.*

Impact AQ-4: Emissions of ozone precursors and particulate matter caused by construction and operation of the Project are considered significant.

Mitigation Measure AQ-4: Adhere to Mitigation Measures AQ-2a and 2b.

Significance after Mitigation: The above mitigation measures would reduce the identified impacts to the extent feasible. However, despite imposition of these mitigation measures, it is not certain that the identified impacts can be mitigated to less than significant levels. As a result, the impact is *significant and unavoidable.*

Impact AQ-5: Operation of the Project would emit TACs, primarily from DPM emitted by trucks, that would cause increased cancer risk, that exceeds 10 excess cancer cases per million, at residents on-site (Phase 1 only) and off-site. While individual, site-specific development projects under the Specific Plan may not individually result in excess cancer risk above the SJVAPCD threshold, the cumulative contribution of diesel truck traffic from Project developments would significantly contribute to a substantial increase in concentrations of TACs at sensitive receptors in the Project vicinity. This is a significant and adverse impact of the Project.

Mitigation Measure AQ-5: Applicants for industrial or warehousing land uses that: 1) are expected to generate 100 or more diesel truck trips per day or have 40 or more trucks with operating diesel-powered transport refrigeration units (TRUs), and 2) are located within 1,000 feet of a sensitive receptor, as measured from the property line of the development at issue to the property line of the nearest sensitive receptor, shall adhere to applicable Best Available Control Technologies for Toxics (T-BACT), as set forth in CARB or SJVAQPD guidance (as applicable), for the purpose of reducing potential cancer and non-cancer risks to below the applicable thresholds, as feasible (e.g., restricting idling onsite, electrifying warehouse docks, requiring use of newer equipment and/or vehicles, restricting offsite truck travel through the creation of truck routes). Provided, however, that an applicant may submit a health risk assessment (HRA) to the City of Tracy prepared in accordance with policies and procedures of the state Office of Environmental Health Hazard Assessment (OEHHA) and the San Joaquin Valley Air Pollution Control District (SJVAPCD); if

this HRA demonstrates that the incremental cancer risk for the individual development at issue would not exceed ten in one million (10E-06) or the appropriate non-cancer hazard index would not exceed 1.0, then no further mitigation shall be required.

Significance After Mitigation: The above mitigation measures would reduce the identified impacts to the extent feasible. However, despite imposition of these mitigation measures, it is not certain that the identified impacts can be mitigated to less than significant levels. As a result, the impact is *significant and unavoidable*.

Impact AQ-6: Day care centers may be located within the Specific Plan Area and have the potential to be exposed to elevated concentrations of TACs. This is a significant impact of the Project.

Mitigation Measure AQ-6: No day care center shall be located within 1,000 feet of a major source of TACs (e.g. warehouses, industrial, or roadways with traffic volumes over 10,000 vehicle per day), as measured from the property line of the development at issue to the property line of the source/edge of the nearest travel lane unless a health risk assessment (HRA) is submitted and approved by the City that demonstrates that the incremental cancer risk for the individual development at issue would not exceed ten in one million (10E-06) or the appropriate non-cancer hazard index would not exceed 1.0. Such HRA shall be prepared in accordance with policies and procedures of the state Office of Environmental Health Hazard Assessment (OEHHA) and the San Joaquin Valley Air Pollution Control District (SJVAPCD), including the latest OEHHA guidelines that address age sensitivity factors, breathing rates, and body weights appropriate for children age 0 to 6 years.

Significance After Mitigation: Mitigation Measure AQ-6 would ensure that risk at day care centers are mitigated in accordance with SJVAPCD's standards. The impact, therefore, would be considered *less than significant.*