The air quality section of the EIR summarizes the existing topography, meteorology, climate, and air quality conditions at the project site; identifies potential air quality impacts related to the implementation of the proposed project; and presents mitigation measures to reduce or eliminate significant air quality impacts. This section is based on an Air Quality Impact Assessment prepared by Ambient Air Quality & Noise Consulting in February 2009, which is incorporated herein. This section was prepared using information from the Monterey Bay Unified Air Pollution Control District (MBUAPCD), their respective air quality management plans and CEQA guidance documents. The Air Quality Impact Assessment including modeling print outs are incorporated as **Appendix B**. The reader is referred to Section 3.13, Greenhouse Gases and Climate Change, for a discussion of project impacts associated with greenhouse gas emissions.

3.2.1 ENVIRONMENTAL SETTING

The proposed project is located in the North Central Coast Air Basin (NCCAB), which is under the jurisdiction of the MBUAPCD. Dispersion of air pollution in an area is determined by such natural factors as topography, meteorology, and climate, coupled with atmospheric stability. The factors affecting the dispersion of air pollution with respect to the NCCAB are discussed below.

TOPOGRAPHY

The NCCAB encompasses Santa Cruz, San Benito, and Monterey counties. The NCCAB is generally bounded by the Diablo Range to the northeast, which together with the southern portion of the Santa Cruz Mountains forms the Santa Clara Valley that extends into the northeastern tip of the NCCAB. Farther south, the Santa Clara Valley transitions into the San Benito Valley, which runs northwest-southeast and has the Gabilan Range as its western boundary. To the west of the Gabilan Range is the Salinas Valley that extends from Salinas at the northwest end to King City at the southeast end. The northwest portion of the NCCAB is dominated by the Santa Cruz Mountains.

METEOROLOGY AND CLIMATE

The climate of the NCCAB is dominated by a semi-permanent high pressure cell over the Pacific Ocean. In the summer, the dominant high pressure cell results in persistent west and northwest winds across the majority of coastal California. As air descends in the Pacific high pressure cell, a stable temperature inversion is formed. As temperatures increase, the warmer air aloft expands, forcing the coastal layer of air to move onshore producing a moderate sea breeze over the coastal plains and valleys. Temperature inversions inhibit vertical air movement and often result in increased transport of air pollutants to inland receptor areas.

In the winter, when the high pressure cell is weakest and farthest south, the inversion associated with the Pacific high pressure cell is typically absent in the NCCAB. Air frequently flows in a southeasterly direction out of the Salinas and San Benito valleys in the NCCAB. The predominant offshore flow during this time of year tends to aid in pollutant

dispersal producing relatively healthful to moderate air quality throughout the majority of the region. Conditions during this time are often characterized by afternoon and evening land breezes and occasional rain storms. However, local inversions caused by the cooling of air close to the ground can form in some areas during the evening and early morning hours.

Winter daytime temperatures in the NCCAB typically average in the mid 50s during the day, with nighttime temperatures averaging in the low 40s. Summer daytime temperatures typically average in the 60s during the day, with nighttime temperatures averaging in the 50s. Precipitation varies within the region, but in general, annual rainfall is lowest in the coastal plain and inland valley, higher in the foothills, and highest in the mountains.

SENSITIVE RECEPTORS

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term sensitive receptors refer to specific population groups, as well as the land uses where individuals would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses would include residences, schools, playgrounds, childcare centers, retirement homes or convalescent homes, hospitals, and clinics.

Sensitive land uses located near the project site consist primarily of residential dwellings. The nearest residential dwellings are located approximately 80 feet from the western property line, across San Benancio Road. Residential dwellings are also located approximately 190 feet north of the project site, across State Route 68. Additional sensitive land uses located in the vicinity of the project site include: San Benancio Middle School, which is located adjacent to the western boundary of the project site; and Toro Park Elementary School, which is located approximately 600 feet north of the project site, across State Route 68. In addition, the proposed project includes construction of residential dwellings, which would also be considered sensitive receptors.

Criteria Pollutants and Human Health

For the protection of public health and welfare, the Federal Clean Air Act (FCAA) requires the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air without harm to the public's health. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. The FCAA allows states to adopt additional or more health-protective standards. Common air pollutants, emission sources, and associated health and welfare effects are summarized in **Table 3.2-1, Common**

Pollutant Sources and Adverse Effects. Within the NCCAB, the air pollutants of primary concern, with regard to human health, include ozone, carbon monoxide (CO), and particulate matter (PM). As depicted in **Table 3.2-1**, **Common Pollutant Sources and Adverse Effects** exposure to increased pollutant concentrations of ozone, PM, and CO can result in various heart and lung ailments, cardiovascular and nervous system impairment, and death.

TABLE 3.2-1
COMMON POLLUTANT SOURCES AND ADVERSE EFFECTS

POLLUTANT	MAJOR MAN-MADE SOURCES	HUMAN HEALTH & WELFARE EFFECTS
Particulate Matter (PM_{10} and $PM_{2.5}$)	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Ozone (O_3)	Formed by a chemical reaction between volatile organic compounds (VOC) and nitrous oxides (NOx) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes.
Sulfur Dioxide (SO_2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned; when gasoline is extracted from oil; or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel; damage crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely;' a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Motor vehicles; electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming, and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: Ambient 2009

AMBIENT AIR QUALITY

Existing air quality concerns within the NCCAB are primarily related to increases of regional criteria air pollutants (i.e., ozone and particulate matter); and exposure of sensitive receptors to toxic air contaminants and odors. Existing air quality conditions and applicable

regulatory background associated with these emissions of primary concern are discussed separately, as follows:

Localized Criteria Air Pollutants

Ambient air quality in the vicinity of the project site can be inferred from ambient air quality measurements conducted by the MBUAPCD at its Salinas #3 air quality monitoring station. **Table 3.2-2, Summary of Ambient Air Quality Data** summarizes the last three years of published data from the Salinas monitoring station.

TABLE 3.2-2
SUMMARY OF AMBIENT AIR QUALITY DATA

POLLUTANT STANDARDS	2005	2006	2007
Salinas #3 Air Monitoring Station			
Ozone (O_3)			
Maximum concentration, 1-hr/8-hr period (ppm)	0.069/0.057	0.066/0.057	0.067/0/059
Number of days state standard exceeded	0	0	0
Number of days federal standard (1-hr/8-hr) exceeded	0/0	0/0	0/0
Carbon Monoxide (CO)			
Maximum concentration, 1-hr/8-hr period (ppm)	2.1/0.86	2.5/1.04	2.0/1.1
Number of days state (1-hr/8-hr) standard exceeded	0/0	0/0	0
Number of days federal (1-hr/8-hr) standard exceeded	0/0	0/0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.052	0.067	0.50
Number of days state standard exceeded	0	0	0
Annual arithmetic mean (AAM)	0.008	0.007	0.0072
AAM exceed federal standard?	0	0	0
Respirable Particulate Matter (PM_{10})			
Maximum 24-hour concentration ($\mu g/m^3$)	36.0	49.0	58[1]
Number of days state standard exceeded (measured/estimated)	0/0	1/5.8	No Information
Number of days federal standard exceeded	0	0	
Fine Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration ($\mu g/m^3$)	16.2	13.0	25[1]
Number of days federal standard exceeded *	0	0	No Information

Notes:
1. Data from Santa Cruz 2544 Soquel Avenue Station.
AAM = Annual Arithmetic Mean; $\mu g/m^3$ =Micrograms per Cubic Meter; ppm = Parts per Million.

Source: Ambient 2009

As shown in **Table 3.2-2, Summary of Ambient Air Quality Data**, ambient air quality has exceeded the state PM_{10} standard at the Salinas monitoring station on multiple occasions during the past three years of available data. No other exceedances of state or federal ambient air quality standards (AAQS) for other pollutants have been measured at the Salinas monitoring station over the past three years. Ozone concentrations within the basin are generally decreasing. In the past, most ozone within the basin was the result of pollutant transport from the San Francisco Bay Area. With local growth, ozone air pollution from local sources is increasing.

Attainment Status for Criteria Air Pollutants

The attainment status of the NCCAB is summarized in **Table 3.2-3, NCCAB Attainment Status Designations**. An attainment designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A nonattainment designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation(s) was caused by an exceptional event, as defined in the criteria. Unclassified designations indicate insufficient data is available to determine attainment status.

TABLE 3.2-3
NCCAB ATTAINMENT STATUS DESIGNATIONS

POLLUTANT	STATE DESIGNATION	NATIONAL DESIGNATION
Ozone (O_3)	Nonattainment[1]	Attainment[2]
Inhalable Particulates (PM_{10})	Nonattainment	Attainment
Fine Particulates ($PM_{2.5}$)	Attainment	Unclassified/Attainment[3]
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead	Attainment	Unclassified/Attainment[4]

Notes:
1) Effective July 26, 2007, the ARB designated the NCCAB a nonattainment area for the State ozone standard, which was revised in 2006 to include an 8-hour standard of 0.070 ppm.
2) On March 12, 2008, EPA adopted a new 8-hour ozone standard of 0.075 ppm, while temporarily retaining the existing 8-hour standard of 0.08 ppm. EPA is expected to issue new designations by March 2010.
3) In 2006, the Federal 24-hour standard for PM2.5 was revised from 65 to 35 µg/m3. Although final designations have yet to be made, it is expected that the NCCAB will remain designated unclassified/attainment.
4) On October 15, 2008 EPA substantially strengthened the national ambient air quality standard for lead by lowering the level of the primary standard from 1.5 µg/m3 to 0.15 µg/m3. Initial recommendations fordesignations are to be made by October 2009 with final designations by January 2012.

Source: MBUAPCD 2009

Toxic Air Contaminants

Toxic air contaminants (TACs) are not considered criteria pollutants in that the federal and California Clean Air Acts do not address them specifically through the setting of National or State Ambient Air Quality Standards. Instead, the U.S. EPA and California Air Resources Board (ARB) regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In general, the terms HAPs and TACs are used interchangeably to describe essentially the same set of air pollutants. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the U.S. EPA has established National Emission Standards for HAPs (NESHAPs), as required by the federal Clean Air Act Amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

At the state level, the ARB has authority for the regulation of emissions, including TACs, from motor vehicles, fuels, and consumer products. Within California, TACs are regulated primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC.

At the local level, air districts have the authority over stationary or industrial sources. Projects that require air quality permits from the MBUAPCD are evaluated for TAC emissions. The MBUAPCD limits emissions and public exposure to TACs through a number of programs. The MBUAPCD prioritizes TAC-emitting stationary sources, based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. The MBUAPCD requires a comprehensive health risk assessment for facilities that are classified in the significant-risk category, pursuant to AB 2588.

California Diesel-Risk Reduction Plan

In September 2000, the ARB adopted the Diesel Risk Reduction Plan (DRRP), which recommends many control measures to reduce the risks associated with diesel-exhaust particulate matter (diesel-PM or DPM) and achieve a goal of 75 percent PM reduction by 2010 and 85 percent by 2020. The DRRP incorporates measures to reduce emissions from diesel-fueled vehicles and stationary diesel-fueled engines. Ongoing efforts of the ARB to reduce diesel-exhaust emissions from these sources includes the development of specific statewide regulations, which are designed to further reduce diesel PM emissions from these sources. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce diesel PM emissions.

Since the initial adoption of the DRRP in September of 2000, the ARB has adopted numerous rules and emissions standards related to the reduction of diesel-PM from mobile sources, as well as, the use of cleaner burning fuels. Transportation sources addressed by these rules include public transit buses, school buses, on-road heavy-duty trucks, and off-road heavy-duty equipment. In July 2007, the ARB adopted regulation aimed at reducing diesel-PM generated by offroad equipment. This regulation requires the installation of diesel-PM control devices, such as particulate filters, for new equipment and encourages the replacement of older engines with newer emission controlled models. By 2020, diesel-PM from offroad equipment subject to this rule is anticipated to be reduced by approximately 74 percent (Ambient Air Quality and Noise Consultants 2009).

Land Use Compatibility with TAC Emission Sources

The ARB published an informational guide entitled: "Air Quality and Land Use Handbook: A Community Health Perspective" (Handbook) in 2005. The purpose of this guide is to provide information to aid local jurisdictions in addressing issues and concerns related to the placement of sensitive land uses near major sources of air pollution. The ARB's

Handbook includes recommended separation distances for various land uses that are based on relatively conservative estimations of emissions based on source-specific information. However, these recommendations are not site specific and should not be interpreted as defined "buffer zones". It is also important to note that the recommendations of the Handbook are advisory and need to be balanced with other State and local policies (ARB 2005). Depending on site and project-specific conditions, an assessment of potential increases in exposure to TACs may be warranted for proposed development projects located within the distances identified. ARB-recommended separation distances for various TAC-emission sources are summarized in **Table 3.2-4, ARB's Recommendations on Siting New Sensitive Land Uses Near Air Pollutant Sources.**

TABLE 3.2-4
ARB'S RECOMMENDATIONS ON SITING NEW SENSITIVE LAND USES NEAR AIR POLLUTANT SOURCES

SOURCE CATEGORY	ADVISORY RECOMMENDATIONS
Freeways and High-Traffic Roads	– Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	– Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). – Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	– Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. – Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	– Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	– Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	– Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	– Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. – Do not site new sensitive land uses in the same building with perc. Dry cleaning operations.
Gasoline Dispensing Facilities	– Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

Notes: Recommendations are advisory, are not site specific, and may not fully account for future reductions in emissions, including those resulting from compliance with existing/future regulatory requirements, such as reductions in diesel-exhaust emissions anticipated to occur with continued implementation of the ARB's Diesel Risk Reduction Plan.

Source: Ambient 2009

Odors

Typically odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from the psychological (i.e. irritation, anger, or anxiety) to the physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor and in fact an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and the MBUAPCD. The MBUAPCD has determined some common types of facilities that have been known to produce odors, including wastewater treatment facilities, chemical manufacturing plants, painting/coating operations, feed lots/dairies, composting facilities, landfills, and transfer stations. Because offensive odors rarely cause any physical harm and no requirements for their control are included in state or federal air quality regulations, the MBUAPCD has no rules or standards related to odor emissions other than its nuisance rule. Any actions related to odors are based on citizen complaints to local governments and the MBUAPCD. No major stationary sources of odors have been identified in the vicinity of the project site.

3.2.2 REGULATORY SETTING

Air quality within the NCCAB is regulated by several jurisdictions including the United States Environmental Protection Agency (U.S. EPA), California Air Resources Board (ARB), and the Monterey Bay Unified Air Pollution Control District (MBUAPCD). Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although U.S. EPA regulations may not be superseded, both state and local regulations may be more stringent. The following is a summary of applicable federal, state, and local regulations:

FEDERAL

U.S. Environmental Protection Agency

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

Federal Clean Air Act

The FCAA required the U.S. EPA to establish National AAQS (NAAQS), and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. National AAQS are summarized in **Table 3.2-5**.

The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The U.S. EPA has responsibility to review all state SIPs to determine conformance to the mandates of the FCAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the U.S. EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

STATE

California Air Resources Board

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA) of 1988. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing California AAQS (CAAQS), which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

TABLE 3.2-5
SUMMARY OF NATIONAL AND STATE AMBIENT AIR QUALITY STANDARDS

POLLUTANT	AVERAGING TIME	CALIFORNIA STANDARDS	NATIONAL STANDARDS	
			PRIMARY [A]	SECONDARY[B]
Ozone (O_3)	1-hour	0.09 ppm	–	Same as Primary
	8-hour	0.070 ppm	0.075 ppm	
Particulate Matter (PM_{10})	AAM	20 µg/m^3	–	
	24-hour	50 µg/m^3	150 µg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m^3	15 µg/m^3	
	24-hour	No Standard	35 µg/m^3	
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm	None
	8-hour	9 ppm	9 ppm	
	8-hour (Lake Tahoe)	6 ppm	–	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	0.053 ppm	Same as Primary
	1-hour	0.18 ppm	–	
Sulfur Dioxide (SO_2)	AAM	–	0.03 ppm	–
	24-hour	0.04 ppm	0.14 ppm	–
	3-hour	–	–	0.5 ppm
	1-hour	0.25 ppm	–	–
Lead	30-day Average	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-Month Average	–	0.15 µg/m^3	Same as Primary
Sulfates	24-hour	25 µg/m^3	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm		
Vinyl Chloride	24-hour	0.01 ppm	No Federal Standards	
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more		

POLLUTANT	AVERAGING TIME	CALIFORNIA STANDARDS	NATIONAL STANDARDS	
			PRIMARY (A)	SECONDARY(B)
		(0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.		

Notes: AAM = Annual Arithmetic Mean; $\mu g/m^3$ = Micrograms per Cubic Meter; ppm = Parts per Million.
Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25EC and a reference pressure of 760 torr.
a. Levels necessary to protect the public health.
b. Levels necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

Source: Ambient 2009

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, Sulfur Dioxide, and Nitrogen Dioxide by the earliest practical date. Plans for attaining CAAQS were initially submitted to ARB in June 1991. The CAAQS have undergone various amendments over the years. The current CAAQS are summarized in **Table 3.2-5**.

The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a 5-percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

California Building Energy Efficiency Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. These standards are codified in Title 24, Part 6, of the California Code of Regulations and are generally referred to as "Title 24 Standards." The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The most recent update was adopted in 2003 and took effect as of October 1, 2005. California's building efficiency standards (along with those for energy efficient appliances) have saved more than $56 billion in electricity and natural gas costs since 1978. Estimates have put savings related to the standards at an additional $23 billion by 2013 (Ambient 2009a). By reducing the heating and cooling demands of buildings, California's Energy Efficiency Standards result in decreased emissions associated with the use of natural gas fired appliances and electricity production. Reduction in energy consumption reduces the amount of air pollutants emitted by energy purveyors.

Assembly Bills 1807 & 2588 - Air Toxics

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

LOCAL

Monterey Bay Unified Air Pollution Control District

The MBUAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the NCCAB, within which the project is located. Responsibilities of the MBUAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA. The most recent *Air Quality Management Plan for the Monterey Bay Region* (AQMP) was adopted in August 2008, the sixth revision to the 1991 plan (MBUAPCD 2008b). In an attempt to achieve NAAQS and CAAQS and maintain air quality, the MBUAPCD has most recently completed the *2008 AQAP* for achieving the state ozone standards and the *2007 Federal Maintenance Plan* for maintaining federal ozone standards. The MBUAPCD has also adopted the *SB 656 Plan* for meeting state standards related to airborne particulate matter (MBUAPCD 2009).

To achieve and maintain ambient air quality standards, the MBUAPCD has adopted various rules and regulations for the control of airborne pollutants. The MBUAPCD Rules and Regulations that are applicable to the proposed project include, but are not limited to, the following:

- **Rule 424 (National Emissions Standards for Hazardous Air Pollutants).** This rule may apply to projects in which portions of an existing building would be renovated, partially demolished or removed. Prior to demolition activity, an asbestos survey of the existing structure may be required to identify the presence of any asbestos containing building materials (ACBM). Removal of identified ACBM must be removed by a certified asbestos contractor in accordance with CAL-OSHA requirements.

- **Rule 402 (Nuisances).** The purpose of this rule is to prohibit emissions that may create a public nuisance. Applies to any source operation that emits or may emit air contaminants or other materials.
- **Rule 438 (Open Outdoor Fires).** This rule regulates the use of open burning and specifies the types of materials that may be open burned. Section 5.2 of this rule applies to the burning of trees and other vegetative (non-agricultural) material whenever the land is being developed for non-agricultural purposes. Individuals conducted burning associated with land development are required to obtain a written permit from the air district.
- **Rule 426 (Architectural Coatings).** The purpose of this rule is to limit emissions of volatile organic compounds from architectural coatings.
- **Rule 425 (Use of Cutback Asphalt).** The purposed of this rule is to limit emissions of vapors of organic compounds from the use of cutback and emulsified asphalt. This rule applies to the manufacture and use of cutback, slow cure, and emulsified asphalt during paving and maintenance operations.
- **Rule 439 (Building Removals).** The purpose of this rule is to limit particulate emissions associated with the removal and demolition of buildings.
- **Rule 207 (Review of New or Modified Sources).** The purpose of this rule is to provide a review of new or modified stationary air pollution sources to meet federal and state clean air act requirements. This rule provides mechanisms by which Authorities to Construct may be granted for stationary emissions sources without interfering with the attainment or maintenance of ambient air quality standards.

Monterey County General Plan

Policies

20.2.3 The County shall continue to support air quality monitoring and air pollution control strategies and enforcement by the Monterey Bay Unified Air Pollution Control District.

20.2.4 The County should operate in accordance with current regional, state, and federal air quality standards.

20.2.5 The County shall encourage the use of the best available control technology as defined in the most current Monterey Bay Unified Air Pollution Control District rules and regulations in reducing air pollution emissions.

3.2.3 PROJECT IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Criteria for determining the significance of air quality impacts were developed based on information contained in the California Environmental Quality Act Guidelines (CEQA Guidelines, Appendix G). According to those guidelines, a project may have a significant effect on the environment if it would result in the following conditions:

1) Conflict with or obstruct implementation of any applicable air quality plan.

2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

3) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

4) Expose sensitive receptors to substantial pollutant concentrations.

5) Create objectionable odors affecting a substantial number of people.

To assist local jurisdictions in the evaluation of air quality impacts, the MBUAPCD has published the *CEQA Air Quality Guidelines* (MBUAPCD 2008a). This guidance document includes recommended thresholds of significance to be used for the evaluation of short-term construction, long-term operational, odor, toxic air contaminant, and cumulative air quality impacts. Accordingly, the MBUAPCD-recommended thresholds of significance are used to determine whether implementation of the proposed project would result in a significant air quality impact:

- **Short-term Emissions of Regional Criteria Air Pollutants**. Construction impacts would be significant if the proposed project would emit greater than 82 pounds per day (lbs/day) of PM_{10}, or will cause a violation of PM_{10} National or State AAQS at nearby receptors. Construction projects using typical construction equipment that temporarily emit precursors of ozone (i.e., ROG or NO_X), are accommodated in the emission inventories of State and federally-required air plans and would not have a significant impact on the attainment or maintenance of ozone AAQS. For this reason, the MBUAPCD has not established significance criteria for construction-generated precursors of ozone.

- **Long-Term Emissions of Regional Criteria Air Pollutants**. Regional (operational) impacts would be significant if the project generates direct and indirect emissions of ROG or NO_X that exceed 137 lbs/day. Emissions of PM_{10} would be significant if the project would exceed 82 lbs/day or if the project would contribute to local PM_{10}

concentrations that exceed Ambient Air Quality Standards. Emissions of SO_X would be significant if the project generates direct emissions of greater than 150 lbs/day;

- **Local Mobile-Source CO Concentrations**. Local mobile-source impacts would be significant if the project generates direct emissions of greater than 550 lbs/day of CO or if the project would contribute to local CO concentrations that exceed the State Ambient Air Quality Standard of 9.0 ppm for 8 hours or 20 ppm for 1 hour. (Indirect emissions are typically considered to include mobile sources that access the project site but generally emit off-site; direct emissions typically include sources that emitted on-site (e.g., stationary sources, on-site mobile equipment).

- **Toxic Air Contaminants**. TAC impacts would be significant if the project would expose the public to substantial levels of TACs so that the probability of contracting cancer for the Maximally Exposed Individual would exceed 10 in 1 million and/or so that ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index greater than 1 for the Maximally Exposed Individual.

- **Odorous Emissions**. Odor impacts would be significant if the project has the potential to frequently expose members of the public to objectionable odors.

- **Cumulative impacts**. Cumulative impacts refer to the incremental effect of several projects that may have an individually minor, but collectively significant, impact on air quality. CEQA Guidelines Section 15355(b) defines cumulative impact as:
  - Two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts, and
  - The change in the environment which results from the incremental impact of the project when added to other closely related past, present, or reasonably foreseeable future projects, and can result from individually minor, but collectively significant, projects taking place over a period of time.

The MBUAPCD has provided guidance on the subject of cumulative impacts. In accordance with MBUAPCD *CEQA Air Quality Guidelines* (2008), project emissions which are not consistent with the AQMP would be considered to have a cumulative regional air quality impact. Consistency of population-related projects with the AQMP is assessed by comparing the projected population growth associated with the project to population forecasts adopted by the Association of Monterey Bay Area Governments (AMBAG). In addition, projects that would result in a significant regional air quality impact at the project level would also be considered to have a cumulative air quality impact.

Methodology

Methodologies employed for the analysis of short-term and long-term air quality impacts associated with the proposed project are discussed in more detail, as follows:

Short-term Regional Air Quality Impacts

The MBUAPCD recommends that construction-generated emissions of PM_{10} be quantified and presented as part of the analysis of project-generated emissions. Ozone precursor pollutants (i.e., ROG and NO_x) are accommodated in the emission inventories of State- and federally-required air plans and would not have a significant impact on the attainment and maintenance of ozone AAQS. As a result, the MBUAPCD has not adopted a significance threshold for construction-generated emissions of ozone precursors. Emissions of $PM_{2.5}$ are a subset of PM_{10} emissions. The MBUAPCD has not adopted a separate significance threshold for construction-generated emissions of $PM_{2.5}$ (MBUAPCD 2008).

In accordance with MBUAPCD recommendations, estimated construction-generated emissions of PM_{10} were calculated using the ARB-approved URBEMIS2007 computer program based on default assumptions contained in the model. For informational purposes, emissions of ROG, NOx, and $PM_{2.5}$ were also quantified. The URBEMIS2007 program is designed to model construction emissions for land use development projects and allows for the input of project-specific information. Construction schedules used in the modeling were based on the proposed project phasing schedules, as summarized under Project Phasing in **Section 2.3** of this document. Each project phase was assumed to be constructed over an approximate 1-year period.

Grading activities were based on an average residential lot size of 1.22 acres, based on information obtained from the proposed site plans prepared for this project (Whitson Engineers 2005) and supplemental grading quantity information. To be conservative, grading associated with the development of Parcel D, which includes the proposed office and wine-related uses, was assumed to occur over the entire project site (i.e., 34.7 acres). Total area to be graded is estimated at 92 acres, consisting of 240,390 cubic yards of cut material and 225,310 cubic yards of fill. Emissions associated with the demolition of existing structures were calculated using the URBEMIS computer program based on the size of the existing structures and assuming an average of two haul truck trips/hour for the transport of demolition material from the project site. All remaining construction-related information, including the duration of construction activities, equipment usage requirements, construction-related vehicle trips, usage rates, and emission factors were based on the default parameters contained in the URBEMIS computer model for Monterey County.

Long-term Regional Air Quality Impacts

Regional area- and mobile-source emissions were estimated using the URBEMIS2007 (Version 9.2.4) computer program for buildout conditions. Emissions were calculated for annual operational conditions based on the default parameters contained in the model for Monterey County. Default trip-generation rates contained in the model were revised to correspond with the trip-generation rates identified in the traffic analysis prepared for this project.

Local Air Quality Impacts

Localized concentrations of mobile-source carbon monoxide (CO) concentrations were quantitatively assessed for roadway intersections projected to operate at unacceptable levels of service (i.e., LOS E or worse) based on data obtained from the traffic analysis prepared for this project. Predicted 1-hour and 8-hour CO concentrations were assessed utilizing Caline4 screening methodology developed by the Bay Area Air Quality Management District and approved for use by the MBUAPCD. Background CO concentrations were based on the highest measured 1-hour and 8-hour CO concentrations (i.e., 2.5 and 1.2 ppm, respectively) obtained from the nearest air quality monitoring station for the last three years of available data (i.e., 2006-2008) for both near-term and future cumulative conditions. Traffic volumes were derived from the traffic analysis prepared for this project (Hatch Mott MacDonald 2010). Eight-hour concentrations were calculated based on predicted 1-hour concentrations and assuming a persistence factor of 0.7.

Exposure to localized concentrations of odors and TACs were qualitatively assessed based on the projects potential to result in increased exposure of sensitive receptors to new or existing TAC emission sources. Exposure of proposed sensitive receptors to mobile-source concentrations of diesel-exhaust PM were assessed utilizing land-use compatibility criteria recommended by the ARB (**Table 3.2-4**).

PROJECT IMPACTS AND MITIGATION MEASURES

Short-Term Exposure of Sensitive Receptors to Construction Emissions

Impact 3.2-1 Construction activities associated with implementation of the proposed project would generate temporary emission of criteria pollutants that could exceed MBUAPCD significance thresholds. This would be considered a **potentially significant short-term impact**.

Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but possess the potential to represent a significant air quality impact. The construction of the proposed land uses and related improvements would result in the temporary generation of emissions resulting from site grading and excavation, road paving, the application of architectural coatings, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment, especially on unpaved surfaces. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities. According to the MBUAPCD construction activities that involve minimal earth moving over an area of 8.1 acres, or more, could result in a potentially significant temporary air quality impacts, if not mitigated. Construction activities that require more extensive site preparation (e.g., grading and excavation) may result in significant unmitigated impacts if the area of disturbance were to exceed 2.2 acres per day.

Daily construction-generated emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ are summarized in **Table 3.2-6**. It is important to note, however, that ozone precursor pollutants (i.e., ROG and NO_X) are accommodated in the emission inventories of State- and federally-required

air plans. For this reason, the MBUAPCD has determined that emissions of ozone-precursor pollutants would not have a significant impact on the attainment and maintenance of ozone AAQS. Therefore, MBUAPCD has not adopted a significance threshold for construction-generated emissions of ozone precursors. Emissions of $PM_{2.5}$ are a subset of PM_{10} emissions. The MBUAPCD has not adopted a separate significance threshold for construction-generated emissions of $PM_{2.5}$. However, for informational purposes, emissions of ozone precursor pollutants and $PM_{2.5}$ were quantified in **Table 3.2-6**.

TABLE 3.2-6
SHORT-TERM CONSTRUCTION GENERATED EMISSIONS (UNMITIGATED)

PROJECT PHASE/ACTIVITY	MAXIMUM DAILY EMISSIONS (LBS/DAY) [1]			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
PHASE 1				
Demolition	6.55	57.60	9.45	3.89
Grading	10.02	83.16	657.83	140.39
Paving	12.73	40.03	2.63	2.37
Building	5.48	27.54	1.94	1.71
Architectural Coating	222.53	0.47	0.04	0.02
Maximum Daily Emissions:	*228.01*	*143.63*	*662.01*	*144.11*
MBUAPCD Significance Threshold:	*None*	*None*	*82*	*None*
PHASE 2				
Grading	5.71	43.82	312.54	67.07
Paving	7.28	25.95	1.90	1.72
Building	4.28	23.41	1.68	1.52
Architectural Coating	71.16	0.18	0.01	0.01
Maximum Daily Emissions:	*75.43*	*88.82*	*315.87*	*70.08*
MBUAPCD Significance Threshold:	*None*	*None*	*82*	*None*
Phase 3				
Grading	3.98	31.76	233.50	49.97
Paving	5.99	22.37	1.72	1.56
Building	3.60	16.93	1.16	1.04
Architectural Coating	53.01	0.12	0.01	0.01
Maximum Daily Emissions:	*56.62*	*67.64*	*236.12*	*52.34*
MBUAPCD Significance Threshold:	*None*	*None*	*82*	*None*
Phase 4				
Demolition	4.15	36.87	16.69	4.84
Grading	3.78	29.75	269.95	57.47
Paving	6.31	21.80	1.65	1.50
Building	3.35	16.00	1.06	0.95
Architectural Coating	61.38	0.13	0.01	0.01
Maximum Daily Emissions:	*64.73*	*64.23*	*272.41*	*59.69*
MBUAPCD Significance Threshold:	*None*	*None*	*82*	*None*

Notes: Based on URBEMIS2007 computer modeling for the Monterey County region and proposed project phasing schedules. Maximum daily emissions are based on modeling assumptions taking into account multiple activities occurring during a single day and do not represent the sum total of emissions associated with individual construction activities, as identified above.

Source: Ambient 2009

As depicted in **Table 3.2-6**, development of the proposed project would result in maximum uncontrolled emissions of approximately 236 to 662 lbs/day of PM_{10}. Maximum daily emissions would be occur during initial site preparation/grading of the project site and would vary, by project phase, depending on the overall area to be graded. Predicted daily emissions of PM_{10} occurring during site preparation/grading could exceed the MBUAPCD's

emissions threshold of 82 lbs/day. Other construction-related activities, such as asphalt paving, building construction, and application of architectural coatings, would not generate daily emissions of PM_{10} in excess of the MBUAPCD's recommended significance threshold. Since the predicted maximum daily emissions of PM_{10} occurring during the site preparation/grading phase would exceed MBUAPCD's emissions threshold of 82 lbs/day, this impact would be considered a **potentially significant impact**.

Mitigation Measure

MM 3.2-1 Prior to issuance of building permits for on-site and off-site improvements, the Monterey County Resource Management Agency (RMA)-Planning Department shall require that the project applicant implement Best-Available Control Measures (BACM) during site preparation and construction of proposed land uses. Prior to approval of building permits, a construction emissions reduction plan (CERP) shall be prepared and submitted to MBUAPCD for endorsement. Implementation of the CERP will reduce construction-generated fugitive and mobile-source emissions as shown in **Table 3.2-7**. The MBUAPCD shall be consulted to identify the specific measures to be implemented to minimize impacts to nearby sensitive receptors. Measures to be included in the CERP prepared for this project, as currently recommended by the MBUAPCD, include but are not limited to the following:

- Water all active construction areas at least twice daily depending on weather and soil moisture conditions. Frequency should be based on the type of operation, soil and wind exposure;
- Prohibit all grading activities during periods of high wind (sustained winds over 15 mph);
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days);
- Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed areas;
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.
- Replant vegetation in disturbed areas as quickly as possible.
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles, such as dirt, sand, etc.
- Sweep daily, with water sweepers, all paved access roads, parking areas and staging areas at construction sites.

- Sweep streets daily, with water sweepers, if visible soil materials are carried onto adjacent public streets.
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Limit areas of active disturbance to no more than 2.2 acres per day for initial site preparation activities that involve extensive earth-moving activities (grubbing, excavation, rough grading), or 8.1 acres per day for activities that involve minimal earth moving (e.g., finish grading). Limits on maximum daily area to be graded may be increased if dispersion modeling demonstrates that localized concentrations at nearby sensitive land uses would not exceed applicable ambient air quality standards. If performed, dispersion modeling shall be conducted in accordance with MBUAPCD recommendations and included in the CERP to be endorsed by the MBUAPCD.
- Diesel equipment used on-site should be year 2003, or newer; or, retrofitted with DPM-emission control technology (e.g., diesel-particulate filter); or, use alternative fuels (e.g., biodiesel). For equipment retrofitted to operate with diesel-exhaust emissions control technology, the CERP shall include verification of installation or presence of these devices for review by the MBUAPCD.
- Construction equipment shall not be left idling for periods longer than 5 minutes when not in use.
- Post a publicly visible sign which specifies the telephone number and person to contact regarding emissions-related complaints. This person shall respond to complaints and take corrective action within 48 hours. The phone number of the Monterey Bay Unified Air Pollution Control District shall be visible to ensure compliance with Rule 402 (Nuisance).

Implementation of the above mitigation measures would reduce fugitive dust emissions associated with individual construction activities, sufficiently reduce short-term construction-generated emissions to within acceptable levels, and ensure that on-site ground-disturbing activities do not exceed the screening thresholds identified by the MBUAPCD as typically having a potential to exceed local ambient air quality standards (i.e., 2.2 acres per day for initial site preparation activities or 8.1 acres per day for activities that involve minimal earth moving.)

TABLE 3.2-7
SHORT-TERM CONSTRUCTION GENERATED PM_{10} EMISSIONS (MITIGATED)

PROJECT PHASE	MAXIMUM DAILY EMISSIONS (LBS/DAY)
Phase 1	53.94
Phase 2	27.47
Phase 3	20.47
Phase 4	22.71
MBUAPCD Significance Threshold:	*82*
Exceeds Threshold After Mitigation?	*No*

Notes: Based on URBEMIS2007 computer modeling. Refer to Appendix A for modeling assumptions and results.

Source: Ambient 2009

As shown in **Table 3.2-7**, the maximum construction-generated emissions associated with individual activities (i.e., demolition, grading, building construction) would be reduced to a maximum of approximately 54 lbs/day of PM_{10} with mitigation applied. Fugitive dust emissions would be reduced by approximately 4 to 90 percent, with overall fugitive dust emission reductions exceeding approximately 50 percent, depending on the activities conducted (Ambient Air Quality and Noise Consultants 2009). Mitigated construction-generated emissions of PM_{10} would not exceed the MBUAPCD's significance threshold of 82 lbs/day. With restriction of on-site areas of disturbance and implementation of recommended dust-control measures, predicted concentrations at nearby receptors would not be anticipated to exceed applicable standards. Therefore, the short-term construction generated emissions would be reduced to a **less than significant level**.

Long-term Emissions of Criteria Air Pollutants

Impact 3.2-2 Operational emissions associated with buildout of the proposed project would result in emission of criteria air pollutants that may exceed MBUAPCD's thresholds of significance. However, the predicted long-term direct and indirect operational emissions of ROG, NOX, PM_{10}, SOX, and CO would not exceed MBUAPCD significance thresholds. Therefore, this would be considered a **less than significant impact**.

The proposed project's long-term operational emissions would be generated from regional area-sources and mobile-sources associated with the proposed land uses. Regional area-source and mobile-source emissions were estimated using the ARB-approved URBEMIS2007 computer program, which includes options for the estimation of operational emissions for land use development projects. Vehicle trip generation rates for proposed land uses were based on data obtained from the transportation analysis prepared for this project (Hatch Mott MacDonald 2010). In accordance with MBUAPCD recommendations, long-term operational emissions attributable to the proposed project were quantified assuming full buildout for both summer and winter conditions. To be conservative, emissions were modeled assuming a buildout year of 2010. Operational emissions are summarized in **Table 3.2-8**.

TABLE 3.2-8
LONG-TERM OPERATIONAL EMISSIONS

SOURCE	ESTIMATED EMISSIONS (LBS/DAY)					
	ROG	NO_X	CO[1]	SO_X	PM_{10}	$PM_{2.5}$
SUMMER CONDITIONS						
Area (Direct) Sources: Natural Gas	0.26	3.39	1.75	0.00	0.01	0.01
Hearth	No Summer Emissions					
Landscaping	1.96	0.15	12.55	0.00	0.04	0.04
Consumer Products	10.37	--	--	--	--	--
Architectural Coatings	2.34	--	--	--	--	--
Subtotal (Direct Sources):	*14.93*	*3.54*	*14.30*	*0.00*	*0.05*	*0.05*
Mobile (Indirect) Sources:	25.27	37.70	296.35	0.18	35.41	7.14
Total (Direct & Indirect):	*40.20*	*41.24*	*310.65*	*0.18*	*35.46*	*7.19*
MBUAPCD Significance Thresholds:	*137*	*137*	*550[2]*	*150[2]*	*82*	*None*
Exceeds Threshold? :	*No*	*No*	*No*	*No*	*No*	*--*
WINTER CONDITIONS						
Area (Direct) Sources: Natural Gas	0.26	3.39	1.75	0.00	0.01	0.01
Hearth	35.89	3.95	169.32	0.50	26.07	25.09
Landscaping	No Winter Emissions					
Consumer Products	10.37	--	--	--	--	--
Architectural Coatings	2.34	--	--	--	--	--
Subtotal (Direct Sources):	48.86	7.34	165.07	0.50	26.08	25.10
Mobile (Indirect) Sources:	28.59	46.54	331.42	0.18	35.41	7.14
Total (Direct & Indirect):	77.45	53.88	496.49	0.68	61.49	32.24
MBUAPCD Significance Thresholds:	*137*	*137*	*550[2]*	*150[2]*	*82*	*None*
Exceeds Threshold? :	*No*	*No*	*No*	*No*	*No*	*--*

Notes: Emissions were estimated using the URBEMIS2007 computer program, based on default model settings, and trip generation rates obtained from the traffic analysis prepared for this project (Hatch Mott MacDonald 2010).
1. Area source emissions of CO are based on winter operating conditions.
2. Applies to Direct Source Emissions Only.

Source: Ambient 2009

As shown in **Table 3.2-8**, the predicted total operational emissions attributable to the proposed project during the summer months would be approximately 40 lbs/day of ROG, 41 lbs/day NO_X, 311 lbs/day of CO, 0.2 lbs/day of SO_X, 36 lbs/day of PM_{10}, and 7 lbs/day of $PM_{2.5}$. During the winter months, the predicted operational emissions would total approximately 78 lbs/day of ROG, 54 lbs/day NO_X, 497 lbs/day of CO, 0.7 lbs/day SO_X, 62 lbs/day of PM_{10}, and 32 lbs/day of $PM_{2.5}$. Based on the modeling conducted, predicted long-term direct and indirect operational emissions of ROG and NO_X would not exceed the MBUAPCD's significance thresholds of 137 lbs/day/pollutant. The maximum daily operational emissions of PM_{10} would not exceed MBUAPCD significance threshold of 82 lbs/day. Likewise, operational emissions of SO_X and CO from direct sources would not exceed MBUAPCD significance threshold of 550 lbs/day/pollutant. Because project-generated emissions would not exceed the MBUAPCD's significance thresholds, this would be considered a **less than significant impact**.

Contribution to Local Mobile-Source CO Concentrations

Impact 3.2-3 The proposed project will increase traffic in the area where unacceptable levels of service exist at nearby signalized intersections along State Route 68, which could contribute CO emissions that may exceed applicable air quality standards. However, based on the modeling conducted, predicted maximum 1-hour and 8-hour CO concentrations would not exceed the more stringent CAAQS. Therefore, this would be considered a **less than significant impact.**

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, 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. For this reason, modeling of CO concentrations is typically recommended for sensitive land uses located near signalized roadway intersections that are projected to operate at unacceptable levels of service (i.e., LOS E or F) (MBUAPCD 2008a). Unsignalized intersections projected to operate at unacceptable levels of service do not typically have sufficient traffic volumes, such that projected unacceptable levels of service at these intersections would typically result in localized concentrations of CO that would exceed applicable standards.

Implementation of the proposed project would result in unacceptable levels of service at existing nearby intersections during both the AM-peak and PM-peak commute hours. Predicted 1-hour and 8-hour CO concentrations at these intersections were modeled for both AM and PM peak hours. Localized CO concentrations were evaluated for both near-term (i.e., background plus project) and future (i.e., cumulative plus project) conditions. The predicted CO concentrations for background plus project and cumulative plus project traffic conditions are summarized in **Table 3.2-9** and **Table 3.2-10**, respectively.

TABLE 3.2-9
PREDICTED LOCAL MOBILE SOURCE CARBON MONOXIDE CONCENTRATIONS BACKGROUND PLUS PROJECT

INTERSECTION	PREDICTED CO CONCENTRATIONS (PPM)			
	AM-PEAK HOUR		PM-PEAK HOUR	
	1-HOUR	8-HOUR	1-HOUR	8-HOUR
State Route 68 and Josselyn Canyon Road	6.4	2.7	6.3	2.6
State Route 68 and Olmsted Road	6.7	2.8	6.9	2.9
State Route 68 and York Road	6.8	2.8	7.1	2.9
State Route 68 and Laureles Grade Road	6.9	2.9	7.3	3.0
State Route 68 and Corral de Tierra Road	6.8	2.8	7.3	3.0
State Route 68 and San Benancio Road	6.8	2.8	7.4	3.0
State Route 68 and Blanco Road	8.5	3.6	9.2	3.8
Blanco Road and Davis Road	7.7	3.3	8.7	3.7
CAAQS:	*20.0*	*9.0*	*20.0*	*9.0*
Predicted Concentrations exceed CAAQS? :	*No*	*No*	*No*	*No*

Notes Predicted concentrations were calculated based on Caline4 screening methodology developed by the BAAQMD and approved for use by the MBUAPCD. To ensure a conservative analysis, background concentrations were based on the highest measured value obtained from the nearest ambient air quality monitoring station for the last three years of available data (i.e., 2.5 and 1.2 ppm, respectively). 8-hour concentrations assume a persistence factor of 0.7.

Source: Ambient 2009

TABLE 3.2-10
PREDICTED LOCAL MOBILE SOURCE CARBON MONOXIDE CONCENTRATIONS CUMULATIVE PLUS PROJECT

INTERSECTION	PREDICTED CO CONCENTRATIONS (PPM)			
	AM-PEAK HOUR		PM-PEAK HOUR	
	1-HOUR	8-HOUR	1-HOUR	8-HOUR
State Route 68 and Josselyn Canyon Road	8.0	3.2	7.8	3.2
State Route 68 and Olmsted Road	8.4	3.4	8.6	3.5
State Route 68 and York Road	8.4	3.5	8.7	3.5
State Route 68 and Laureles Grade Road	8.4	3.5	8.8	3.6
State Route 68 and Corral de Tierra Road	8.5	3.5	9.1	3.7
State Route 68 and San Benancio Road	8.4	3.4	8.9	3.6
State Route 68 and Blanco Road	8.6	3.6	9.7	4.0
Blanco Road and Davis Road	8.7	3.7	9.1	3.8
CAAQS:	*20.0*	*9.0*	*20.0*	*9.0*
Predicted Concentrations exceed CAAQS?:	*No*	*No*	*No*	*No*

Notes: Predicted concentrations were calculated based on Caline4 screening methodology developed by the BAAQMD and approved for use by the MBUAPCD. To ensure a conservative analysis, background concentrations were based on the highest measured value obtained from the nearest ambient air quality monitoring station for the last three years of available data (i.e., 2.5 and 1.2 ppm, respectively). 8-hour concentrations assume a persistence factor of 0.7.

Source: Ambient 2009

As shown in **Table 3.2-9**, under background plus project traffic conditions, the proposed project would contribute to maximum 1-hour and 8-hour CO concentrations at nearby intersections of approximately 9.2 and 3.8 ppm, respectively, or less. As shown in **Table 3.2-10**, under cumulative plus project traffic conditions, the proposed project would contribute to maximum 1-hour and 8-hour CO concentrations at nearby intersections of approximately 9.7 and 4.0 ppm, respectively. It is important to note that these estimates are based on conservative screening assumptions, and may not fully account for future reductions in mobile-source CO concentrations due to anticipated improvements in vehicle emissions standards. Based on the modeling conducted, predicted maximum 1-hour and 8-hour CO concentrations would not exceed the more stringent CAAQS. Since the traffic volumes and traffic flow conditions at other affected intersections and during other periods of the day would be anticipated to be less than the intersections included in this analysis, the predicted CO concentrations at other locations would, likewise, not be anticipated to exceed applicable air quality standards. Therefore, the proposed project's contribution to localized concentrations of mobile-source CO would be considered a **less than significant impact**.

Exposure of Sensitive Receptors to Odorous Emissions

Impact 3.2-4 The proposed project could result in the increased exposure of sensitive receptors to odor sources. However, the proposed project would not result in the installation of any major odor emission sources and no major sources of odors have been identified in the project vicinity. Therefore, this would be considered a **less than significant impact.**

The occurrence and severity of odor impacts depends on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

The proposed project would not result in the installation of any major odor emission sources that would result in a potentially significant impact to the occupants of the proposed on-site or existing off-site land uses. The proposed commercial land uses would consist of a wine-tasting and retail sales facility and would not involve on-site processing or manufacturing facilities or other processes that would be anticipated to emit odors. In addition, no major sources of odors have been identified in the project vicinity. As a result, this would be considered a **less than significant impact.**

Long-term Exposure of Sensitive Receptors to Toxic Air Contaminants (TAC)

Impact 3.2-5 The proposed project would increase traffic along State Route 68, which may result in the generation of TACs, including diesel-exhaust PM emissions. Exposure to TACs, particularly mobile source TACs, may exceed MBUAPCD significance thresholds. However, the proposed project would not result in the installation of any major stationary sources of TACs and no major sources of TACs have been identified in the project vicinity. Therefore, this would be considered a **less than significant impact.**

The exposure of sensitive receptors to TACs associated with proposed development projects could potentially occur during both the construction and operational phases of the proposed project.

Short-Term Construction Emissions

Construction of the proposed project would result in temporary emissions of diesel-PM associated with the operation of off-road construction equipment. As discussed earlier in this report, diesel-PM is identified by ARB as a TAC. Health-related risks associated with emissions of diesel-PM are primarily associated with long-term exposure and the associated risk of contracting cancer. For residential land uses, calculations of the cancer risk associated with exposure to TACs are typically made based on a 70-year period of exposure. However, the use of diesel-powered construction equipment associated with the proposed project would be temporary and episodic and would occur over a relatively large area. Assuming an overall construction period of approximately four years, short-term construction activities would account for less than one percent of the 70-year exposure period typically used for the calculation of diesel-PM cancer risk. Furthermore, in July 2007 the ARB adopted regulation aimed at reducing diesel-PM generated by off-road equipment.

This regulation will require the installation of diesel-PM control devices, such as particulate filters, for new equipment and encourages the replacement of older engines with newer emission controlled models. By 2020, diesel-PM reductions are anticipated to be reduced by approximately 74 percent (Ambient Air Quality and Noise Consultants 2009). For these reasons, diesel PM generated by project construction, in and of itself, would not be expected to create conditions where the probability of contracting cancer is greater than 10 in one million for nearby sensitive receptors. Therefore, short-term exposure to TACs would be considered a **less than significant impact**.

Long-Term Operational Emissions

Long-term increases in health risks can result from either the operation of new stationary sources of TACs in the vicinity of existing sensitive receptors, or by introducing new sensitive receptors to existing sources of TACs. Major stationary sources of TACs have not been identified within the vicinity of the project site. In addition, no major stationary sources of TACs would be developed as part of the proposed project. Some proposed residential parcels would be located within approximately 500 feet of State Route 68. However, predicted traffic volumes along this segment of State Route 68 currently average approximately 26,400 vehicles per day, which is substantially less than the minimum criterion established by the ARB for evaluation of TACs along major roadways (i.e., 50,000 vehicles per day). Therefore, further analysis of mobile-source TACs would not be required for the proposed project according to ARB and long-term exposure to TACs would be considered a **less than significant impact**.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Regional Air Quality Impacts

Impact 3.2-6 Development of the proposed project combined with other reasonably foreseeable projects in the project vicinity, would contribute to increased air quality emission within NCCAB, which may result in the generation of emissions that would be inconsistent with the Monterey Bay Region Air Quality Management Plan. However, the Association of Monterey Bay Area Governments (AMBAG) made an evaluation of emission forecasts based on population projection and determined that the proposed project is consistent with the Monterey Bay Region Air Quality Management Plan. Therefore, this would be considered a **less than significant cumulative impact.**

In accordance with MBUAPCD *CEQA Air Quality Guidelines*, project emissions which are not consistent with the AQMP would be considered to have a cumulative regional air quality impact. As discussed previously, consistency of population-related projects with the AQMP is assessed by comparing the projected population growth associated with the project to population forecasts adopted by AMBAG. These population projections are used to generate emission forecasts upon which the AQMP is based.

A consistency evaluation of the proposed project was conducted by AMBAG on November 16, 2006 (AMBAG 2006) and reconfirmed on August 20, 2009 (AMBAG 2009). Based on the evaluation conducted by AMBAG, the proposed project was deemed consistent with the 2008 regional forecasts and the AQMP. In addition, as noted in **Impact 3.2-2**, long-term operational emissions associated with the proposed project would not exceed MBUAPCD significance thresholds. For these reasons, this would be considered a **less than significant impact.**

Cumulative Local Air Quality Impacts

Impact 3.2-7 Development of the proposed project, combined with other reasonably foreseeable projects in the project vicinity, would contribute to increased local air quality emissions. However, implementation of the proposed project would not result in the long-term operation of any major stationary sources of odors or TACs, and no major existing sources of emissions were identified in the project vicinity. In addition, increases in mobile-source emissions would not result in a significant contribution to either near-term or future cumulative localized concentrations of CO that would exceed applicable standards. Therefore, this would be considered a **less than significant cumulative impact.**

As discussed in **Impacts 3.2-4** and **3.2-5**, implementation of the proposed project would not result in the long-term operation of any major stationary sources of odors or TACs, and no major existing sources of emissions were identified in the project vicinity. In addition, as discussed in **Impact 3.2-3**, increases in mobile-source emissions would not result in a significant contribution to either near-term or future cumulative localized concentrations of CO that would exceed applicable standards. Therefore, the proposed project's cumulative contribution to local air quality impacts would be considered **less than significant**.

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