3.3
AIR QUALITY

This section summarizes the existing air quality conditions in the project site and vicinity; identifies potential air quality impacts from project construction and operation; and presents feasible mitigation measures to reduce or eliminate air quality impacts. This analysis is based on the results of an Air Quality Study prepared by Illingworth and Rodkin, Inc. (2008) in connection with the project, included as Appendix F to this Draft EIR; and using information from the Monterey Bay Unified Air Pollution Control District (MBUAPCD), their respective air management plans and CEQA guidance documents, and project application materials.

3.3.1 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, which 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 northwestern end to King City at the southeastern end. The northwestern 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 western and northwestern 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 rainstorms. 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.

Existing Air Quality Conditions

Existing air quality concerns within the NCCAB are primarily related to increases of regional criteria air pollutants (i.e., ozone and particulate matter); exposure of sensitive receptors to toxic air contaminants and odors; as well as increases in greenhouse gas (GHG) emissions contributing to climate change (see Section 3.5 Climate Change). Existing air quality conditions and applicable regulatory background associated with these emissions of primary concern are discussed separately, in the sections that follow.

Air Quality Study

An Air Quality Study was prepared by Illingworth and Rodkin, Inc. in 2008 that evaluated the air quality effects in connection with the construction and operation of the project. The report describes existing air quality, temporary construction-related impacts, potential direct and indirect long-term emissions associated with the project's maximum build-out scenario, and the

impacts of these emissions on both the local and regional scale. Mitigation measures warranted to reduce or eliminate any identified significant impacts are described. The analysis was conducted following guidance provided by the Monterey Bay Unified Air Pollution Control District's (MBUAPCD) CEQA Guidelines. Emissions, which are the quantities of a pollutant that the project would emit both directly and indirectly, are measured in pounds per day. The amount of pollutant material measured per volumetric unit of air is referred to as the concentration and is typically measured in parts per million (ppm) or micrograms per cubic meter (μg/m3).

3.3.2 REGULATORY SETTING

Criteria Air Pollutants

Pollutants subject to federal air quality standards are referred to as "criteria" pollutants because the United States Environmental Protection Agency (EPA) publishes criteria documents to justify the standards. Criteria air pollutants include ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen dioxide (NO_2), lead, and airborne particulate matter (PM_{10} and $PM_{2.5}$). Criteria air pollutants, common sources, and associated effects are summarized in Table 5, Criteria Air Pollutants, Summary of Common Sources and Effects.

Sources of criteria air pollutants are regulated by several agencies including the U.S. EPA, California Air Resources Board (CARB), and the MBUAPCD. Each of these agencies develops rules, regulations, and policies to implement applicable federal and state law. Projects must be consistent with federal law and U.S. EPA regulations, although state and local laws and regulations may be more stringent.

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" refers to specific populations, as well as the land uses where they would reside for long periods. Commonly identified sensitive populations are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses are residences, schools, playgrounds, childcare centers, retirement homes or convalescent homes, hospitals, and clinics.

The federal and state standards for the criteria pollutants, as well as other state regulated air pollutants, are shown in Table 6, Summary of Ambient Air Quality Standards. The federal, state, and local regulatory environments pertaining to the control of these pollutants are discussed separately, as follows.

Table 5 Criteria Air Pollutants, Summary of Common Sources and Effects

Pollutant	Major Human-Generated Sources	Human Health & Welfare Effects
Particulate Matter (PM_{10} & $PM_{2.5}$) Airborne solid particles and liquid particles grouped into 2 categories: "Coarse Particles" (PM_{10}) – up to 10 microns in diameter. "Fine Particles" ($PM_{2.5}$) – less than 2.5 microns in diameter.	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) (Smog) A colorless or bluish gas	Formed by a chemical reaction between volatile organic compounds (VOC) and nitrous oxides (NO_x) 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, such as coal and oil, 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, large ships, and fuel combustion in diesel engines.	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; damages 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, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2) A reddish-brown gas	Fuel combustion in 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	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*:** CARB, 2010

Table 6 Summary of Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards(a)	Federal Standards(b)	
			Primary(c)	Secondary(d,e)
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[f]	35 μg/m^3	
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm	No Federal standards
	8-hour	9.0 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	0.100 ppm	
Sulfur Dioxide (SO_2)	24-hour	0.04 ppm	--	--
	3-hour	--	--	0.5 ppm
	1-hour	0.25 ppm	0.075 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		
Visibility-Reducing Particulate Matter	8-hour	Extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more (0.07 – 30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.		

***Source*:** CARB, 2010

a. California standards for O_3, CO (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, PM (PM_{10} to $PM_{2.5}$), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

b. National standards (other than O_3, PM, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year.

c. The levels of air quality necessary to protect the public health.

d. The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

e. The national 1-hour ozone standard was revoked by the U.S. EPA on June 15, 2005.

f. The annual PM_{10} standard was revoked by the U.S. EPA on September 21, 2006 and a new $PM_{2.5}$ 24-hour standard was established.

AAM = Annual Arithmetic Mean

Federal Regulations

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 Federal Clean Air Act (FCAA), which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990. The FCAA required the U.S. EPA to establish National Ambient Air Quality Standards (NAAQS), and also to set deadlines for their attainment. Two types of NAAQS have been established; primary standards that protect public health, and secondary standards that protect public welfare from non-health-related adverse effects, such as visibility restrictions.

State Regulations

The California Clean Air Act (CCAA), 1988, requires that all air districts in the state endeavor to achieve and maintain California Ambient Air Quality Standards (CAAQS) by the earliest practical date. Plans for attaining CAAQS were required to be submitted to CARB by June 30, 1991. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and 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) 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.

Monterey Bay Unified Air Pollution Control District (MBUAPCD)

As required by the CCAA, the MBUAPCD adopted the 1991 Air Quality Management Plan (AQMP) for the Monterey Bay Region. The 1991 AQMP addressed planning requirements to meet the ozone standard mandated by the CCAA and included measures to control emissions of VOC from stationary and mobile sources. Since the 1991 AQMP was adopted, control requirements have been reduced. The AQMP was most recently updated in 2008 (MBUAPCD, 2008).

The MBUAPCD prepared its CEQA air quality guidelines (last updated in 2008) to assist lead agencies in the preparation of CEQA-related air quality analysis. Emissions modeling, using an approved model such as the Urban Emissions Model (URBEMIS2007), should be used for proposed projects that exceed screening thresholds. The air quality analysis of an EIR for a project such as Fairview Corners should focus on cumulative effects. Specifically, the EIR should focus on the project's cumulative air quality impact on regional ozone and its localized

impact on carbon monoxide levels. A proposed project's cumulative impact should be analyzed by determining its consistency with the AQMP (MBUAPCD; CEQA Guidelines Section 5.5). Its localized impact should be assessed by identifying whether build-out would create or substantially contribute to carbon monoxide "hotspots" where federal or state AAQS are exceeded (MBUAPCD CEQA Guidelines Section 5.4).

The air district thresholds for PM_{10} emissions are based on maximum daily emissions. According to the guidelines, construction sites with earthmoving activities larger than 2.2 acres in size could lead to emissions of 82 pounds per day or greater, which would be considered a significant impact.

The MBUAPCD guidelines include a threshold for emissions of toxic air contaminants (TACs) that would result in significant human health impacts. Equipment or processes that emit non-carcinogenic TACs could result in significant impacts if emissions would exceed a Hazard Index of 1.0 for acute and chronic exposures. Emissions of carcinogenic TACs that could result in a lifetime cancer incidence of one per 100,000 population or 10 in one million would also be considered significant. In general, diesel particulate matter is the primary TAC of concern associated with land use development projects.

In December 1995, the MBUAPCD also prepared the 1995 Report on Attainment of the California Fine Particulate Standard in the Monterey Bay Region. This report was most recently updated in 2005. The updated report identifies implementation measures to achieve ambient air quality standards and to reduce public exposure to particulate matter (MBUAPCD, 2005).

In accordance with FCAA requirements, the MBUAPCD recently adopted the 2007 Federal Maintenance Plan for Maintaining the National Ozone Standard in the Monterey Bay Region. The maintenance plan includes strategies for maintaining the NAAQS for ozone within the NCCAB. The FCAA requires that projects receiving federal funds demonstrate conformity to the local AQMP. Consistency guidelines for the AQMP extend these requirements to all regionally significant projects, regardless of whether federal funding is being sought. Emission forecasts contained in the AQMP are based, in part, on population forecasts adopted by the Association of Monterey Bay Area Governments (Jean Getchel pers. comm. 2011).

San Benito County General Plan Policies

The San Benito County General Plan Open Space and Conservation Element contains the following policy with regard to air quality:

> **Policy 10: Air Quality.** The County recognizes air as a natural resource and will strive to maintain air quality through proper land use planning. It shall be the County's policy to utilize land use and transportation

controls for the protection and enhancement of air quality. Finally, it will be County's policy to review public and private development proposals in light of possible recreational and open space potential.

1. The County, by resolution, will establish a policy of urban concentration for the protection of air quality. The resolution should specifically discourage the development of commercial and residential areas outside of urban centers, other than those defined in the Land Use Element, in order to reduce the impacts of air pollution caused by commuting and shopping.

2. Require convenient pedestrian and bicycle access to parks and community facilities and the development of on-site private recreation to serve the needs of unincorporated clusters of population.

3. Develop land use programs to reduce vehicle miles and trips, thereby reducing traffic congestion and protecting and enhancing air quality.

4. Allow clustering and encourage conservation easements to direct population growth from natural resources to areas where services are provided.

Ambient Air Quality

Ambient air quality in the Hollister Valley portion of San Benito County can be inferred from ambient air quality measurements conducted by the MBUAPCD at its Hollister-Fairview Road air quality monitoring station, which monitors concentrations of ozone and airborne particulate matter. The nearest station that monitors ambient concentrations of NO_2 and CO is located in Salinas. Table 7 summarizes three years of published data (2007-2009) from these monitoring stations.

As depicted in Table 7, ambient air quality has exceeded both the state and federal ozone standards on one occasion during this 3-year period of time. No other exceedance of state or federal AAQS for other pollutants has been measured at these stations during this period of time. Ozone concentrations within the basin are generally decreasing.

Table 7 Summary of Ambient Air Quality Data – Hollister-Fairview Road Station

Pollutant Standards	2007	2008	2009
Ozone (O_3) Maximum concentration, 1-hr/8-hr period (ppm) Number of days state standard (1-hr/8-hr) exceeded Number of days federal standard (1-hr/8-hr) exceeded	0.087/0.074 0/2 0/0	0.090/0.072 0/2 0/0	0.093/0.073 0/2 0/0
Carbon Monoxide (CO) Maximum concentration, 1-hr/8-hr period (ppm) Number of days state standard (1-hr/8-hr) exceeded Number of days federal standard (1-hr/8-hr) exceeded	2.0/1.15 0/0 0/0	2.2/0.89 0/0 0/0	N/A/0.90 0/0 0/0
Nitrogen Dioxide (NO_2) Maximum 1-hour concentration (ppm) Number of days state standard exceeded Annual arithmetic mean (AAM) AAM exceed federal standard	0.050 0 0.007 0	0.049 0 0.007 0	0.040 0 0.006 0
Respirable Particulate Matter (PM_{10}) Maximum 24-hour concentration (µg/m^3) Number of days state standard exceeded (measured/estimated) Number of days federal standard exceeded (measured/estimated)	40.0 0/0 0/0	40.0 0/0 0/0	38.0 0/0 0/0
Fine particulate Matter ($PM_{2.5}$) Maximum 24-hour concentration (µg/m^3) Number of days federal standard exceeded * (measure/estimated)	20.9 0/0	22.7 0/0	17.3 0/0

***Source*:** CARB 2011; U.S. EPA 2011

***Notes*:**

AAM = Annual Arithmetic Mean; µg/m^3 = Micrograms per Cubic Meter; ppm = Parts per Million; N/A = Data Not Available.

Ozone, PM_{10}, and $PM_{2.5}$ data obtained from the Hollister-Fairview Road Monitoring Station.

CO and NO_2 data obtained from the Salinas Monitoring Station; concentrations are not monitored at the Hollister-Fairview Road Monitoring Station.

Attainment Status for Criteria Air Pollutants

The attainment status of the NCCAB is summarized in Table 8, 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.

Under the FCAA, the NCCAB is currently designated attainment/unclassified for the recently established eight-hour ozone federal AAQS. The NCCAB is designated either attainment or unclassified for the remaining federal AAQS. Under the CCAA, the NCCAB is designated as a nonattainment transitional area for the state ozone AAQS. The NCCAB is also designated a nonattainment area for the state PM_{10} AAQS. Otherwise, the NCCAB is designated either attainment or unclassified for the remaining state AAQS.

Table 8 NCCAB Attainment Status Designations

Pollutant	Federal Designation	State Designation
Ozone, 1 hour	Attainment/Maintenance	Nonattainment/Moderate
Ozone, 8 hour	Unclassified/Attainment	Nonattainment
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Unclassified/Attainment	Attainment
Carbon Monoxide	Unclassified/Attainment	Unclassified/Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified/Attainment	Attainment
Sulfates	Not Applicable	Attainment
Lead	Not Applicable	Attainment
Hydrogen Sulfide	Not Applicable	Unclassified
Visibility Reducing Particles	Not Applicable	Unclassified

Sources: U.S. EPA, 2011; CARB, 2011

Toxic Air Contaminants (TACs)

Toxic air contaminants (TACs) are regulated through implementation of federal and state laws. Federal law uses the term "hazardous air pollutants" (HAPs) to refer to the same types of

compounds considered as TACs under state law. Both terms encompass essentially the same compounds. For purposes of this Draft EIR, the term "TACs" will be used when referring to these pollutants. It is important to note that TACs are not considered "criteria pollutants" in that the federal and California Clean Air Acts do not address them specifically through the setting of NAAQS or CAAQS. However, enforcement of the NAAQS and CAAQS for the control of criteria pollutants, such as ozone and PM, can result in reducing airborne emissions of TACs. For example, controls on volatile organic compound (VOC) emissions to attain the ozone standard can significantly reduce emissions of TACs from stationary sources. The following is a summary of the major current federal, state, and local laws and regulations and programs for controlling TACs.

Federal Laws and Regulations.

Title III of the FCAA requires the U.S. EPA to promulgate National Emissions Standards for Hazardous Air Pollutants (NESHAPs) for certain categories of sources that emit one or more pollutants identified as HAPs/TACs. Major sources are defined as stationary sources with potential to emit more than 10 tons per year (TPY) of any TAC or more than 25 TPY of any combination of TACs; all other sources are considered area sources. Promulgation of the emission standards involves two phases. In the first phase (1992-2000), the U.S. EPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring Maximum Achievable Control Technology. For area sources, the standards may be different, based on generally available control technology. In the second phase (2001-2008), the U.S. EPA is required to promulgate health risk-based emissions standards where such standards are deemed necessary to address risks remaining after implementation of the technology-based NESHAP standards.

The 1990 amendments to the FCAA required the U.S. EPA to promulgate vehicle or fuel standards containing reasonable requirements to control toxic emissions, applying at a minimum to benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 of the FCAA also required the use of reformulated gasoline in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions, including toxics.

State and Local Laws and Regulations.

The CARB works in partnership with the local air districts to enforce regulations that reduce TACs. It has authority to regulate emissions from motor vehicles, fuels, and consumer products. The CARB identifies the TACs, researches prevention or reduction methods, adopts standards for control, and enforces the standards. The local air districts have the authority over stationary or industrial type sources. In accordance with MBUAPCD permitting requirements, projects

that require air quality permits from the MBUAPCD are evaluated for TAC emissions. 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. Health risk assessments are required for facilities that are categorized as having a potential significant risk under the Air Toxics "Hot Spot" Information and Assessment Act of 1987 (Health and Safety Code § 44300 *et seq.*).

The CARB identified particulate emissions from diesel-fueled engines (diesel PM or DPM) as a TAC in August 1998. DPM is currently CARB's primary TAC of concern for mobile sources, in part because, of all controlled TACs, DPM emissions are estimated to be responsible for approximately 70 percent of the total ambient TAC risk (CARB 2000). In 2000, the CARB developed and approved the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles and the Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines. The CARB is now implementing an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles, and is currently developing regulations designed to reduce DPM emissions from diesel-fueled engines and vehicles. 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 DPM emissions. These regulations required substantial reductions in DPM emissions beginning with the 2004 model year. Additional standards that are more stringent began to apply to engines starting in the 2007 model year. Off-road vehicles will be subject to standards that are more stringent during the upcoming years as well. Each of these sets of regulations will serve to reduce significantly DPM emissions and long-term human health risks attributable to diesel-fueled vehicles and equipment.

The California State Legislature has also examined TAC hazards and has adopted several bills to control TACs. Implementation of state-adopted legislation pertaining to the control of TACs is the responsibility of the CARB and local air pollution control districts. The most important legislation applicable to development projects is summarized below.

The Tanner Toxics Act. The Tanner Toxics Act established the California toxic air contaminant control program (Health and Safety Code § 39650 *et seq*.) to identify and control TACs. Under the Act, the CARB is required to identify a substance as a TAC based on the review of the scientific data and the recommendations by both the Office of Environmental and Health Hazard Assessment and the Scientific Review Panel. After designation, the CARB investigates appropriate measures to limit emissions of the TACs. These measures may include emission limitations, control technologies, operation and maintenance requirements, closed-system engineering, cost, or substitution of compounds. The CARB then prepares a report on the appropriate degree of regulation and adopts Air Toxics Control Measures. These control measures are the minimum regulations that must be imposed by each of the local air districts in the form of regulations. Districts must adopt rules that are at least as stringent as those of the State.

Air Toxics "Hot Spots" Information and Assessment Act. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Health and Safety Code, Division 26, Part 6, commencing with § 44300) is a state law enacted in 1987. The law requires certain facilities to submit information regarding emissions of more than 550 TACs to their local air pollution control districts. The Act addresses public concerns that emissions from individual facilities might cause local concentration of air toxics "hot spots" at a level where individuals may be exposed to an excessive risk of adverse health effects. The program requires facilities to notify all exposed persons if it is determined that there is a significant health risk. Chapter 6 of the Act, entitled the Facility Toxic Air Contaminant Risk Reduction Audit and Plan (Health and Safety Code Division 26, Part 6, Chapter 6, commencing with § 44390) requires local air districts to establish a program to reduce risks from existing facilities that are deemed to pose a significant health risk.

Toxic Emissions Near Schools Program. The Toxic Emissions Near Schools Program (Health and Safety Code §§ 42301.6–42301.9) addresses stationary sources of hazardous air pollutants near schools. Section 42301.6 requires public notice to the parents or guardians of children enrolled in any school located within one-quarter mile of the source and to each address within a 1,000-foot radius of a TAC source. Education Code Section 17213 and Public Resources Code Section 21151.8 of CEQA expand previous requirements to review sources of TACs near school sites. School districts must include in the school site acquisition analysis any emissions sources, including, but not limited to, freeways and other busy traffic corridors, large agricultural operations, and rail yards within one-quarter mile of a school site and the potential health risks of any of those sources to persons attending or working at the school.

Land Use Compatibility with TAC Emission Sources. The CARB 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 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 (CARB, 2005). The CARB recommends separation distances for various sources of emissions such as distribution centers, railroads and ports, none of which is relevant to the proposed project. However, the CARB also recommends that new sensitive land uses, such as residential uses, should not be placed within 500 feet of a freeway or urban road with more than 100,000 vehicles per day, or rural roads with more than 50,000 vehicles per day (CARB, 2005).

Odors

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. Common types of facilities that have been known to produce odors include wastewater treatment facilities, chemical manufacturing plants, 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.

3.3.3 STANDARDS OF SIGNIFICANCE

For the purpose of this analysis, the following thresholds of significance from the MBUAPCD's CEQA Air Quality Guidelines (MBUAPCD 2008) and the County's local CEQA procedures are used to determine if the proposed project would result in a significant air quality impact:

- **Short-term Increases in Regional Criteria Pollutants.** Construction impacts would be significant if the proposed project would emit 82 pounds per day (lbs/day) or greater of PM_{10}, or would cause a violation of PM_{10} federal 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 emissions 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 Increases in Regional Criteria 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. Impacts from emissions of PM_{10} would be significant if the project emissions would emit 82 lbs/day or greater or if the project would contribute to local PM_{10} concentrations that exceed Ambient Air Quality Standards. The impact from emissions of SO_x would be significant if the project generates direct emissions that are greater than 150 lbs/day.

- **Increases in Local Mobile-Source CO Concentrations.** Local mobile-source impacts would be significant if the project generates direct emissions of CO that are greater than 550 lbs/day or if the project would contribute to local CO concentrations that exceed the State AAQS of 9.0 ppm for eight hours or 20 ppm for one 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 emit on-site (e.g., stationary sources, on-site mobile equipment).

- **Increases in 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 that project-related ground-level concentrations of non-carcinogenic TACs would result in a Hazard Index greater than 1 for the Maximally Exposed Individual.
- **Increases in Odorous Emissions.** Odor impacts would be significant if the project has the potential to frequently expose members of the public to objectionable odors.
- Conflict with or obstruct implementation of the applicable air quality plan.
- Expose sensitive receptors to substantial pollutant concentrations.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the NCCAB is in nonattainment under an applicable federal or state ambient air quality standard.

Methodology

Air quality analysis in this section is based on the Air Quality Study (Illingworth and Rodkin 2008) prepared in connection with the proposed project. As noted previously, the Air Quality Study is included in Appendix F of this EIR.

Short-term construction-generated criteria pollutants and TACs from exhaust emissions were estimated using the URBEMIS2007 (Version 9.2.4) computer program. The URBEMIS2007 program is designed to model emissions associated with land use development projects and allows for the input of project-specific information, including construction equipment information, for this analysis. Project-specific construction information is not yet available, so default values for construction equipment were used. The MBUAPCD CEQA Guidelines recommend determining construction dust emissions based on the total area of daily ground disturbance. Actual daily emissions would likely vary, depending on the specific construction activities conducted. Details about project phasing are not currently known. Therefore, for purposes of this Draft EIR, the analysis conservatively assumes that disturbance of approximately 25 percent of the total site acreage would occur during any one phase (i.e., approximately 15 acres).

Regional area- and mobile-source emissions associated with proposed land uses were also estimated using the URBEMIS2007 computer program. Emissions were calculated for both summer and winter conditions based on the default parameters contained in the model. Default trip generation rates contained in the model were revised to correspond with predicted trip generation rates for the development of 220 single-family residential units identified in the traffic analysis prepared for this project.

The Air Quality Study (Illingworth and Rodkin 2008) also analyzed the impacts of the proposed project on local air quality. CO emissions from project traffic would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high localized concentrations of carbon monoxide. MBUAPCD CEQA Air Quality Guidelines require CO hotspot analysis under the following conditions:

- Intersections where the Level of Service (LOS) would degrade below D;
- Volume to capacity ratio increases by 0.05 at LOS E or F intersections;
- The delay at LOS E or F intersections increases by 10 seconds or more; and/or
- Reserve capacity at unsignalized LOS E or F intersection decreases by 50 or more.

For intersections that meet one or more of the above conditions, CO concentrations were predicted using the Caline4 model following the Transportation Project Level Carbon Monoxide Protocol, developed by UC Davis. This assessment involved estimating CO emission rates from the EMFAC2007 model and using those along with peak-hour traffic and screening meteorological conditions in the Caline4 model to predict roadside CO levels. If modeling demonstrates that the project would not cause an exceedance of the CO ambient air quality standards, the project would not have a significant impact on CO concentrations. The standards are a concentration of 20 ppm over a 1-hour averaging period and 9.0 ppm over an 8-hour averaging period. The 1-hour levels are adjusted to 8-hour average levels using a persistence factor of 0.7. For both averaging periods, the 1-hour and 8-hour background concentrations are added to the modeled values and compared to the standards (Illingworth and Rodkin 2008).

3.3.4 PROJECT IMPACTS AND MITIGATION MEASURES

Short-Term Construction-Generated Emissions (Airborne Particulate Matter, Toxic Air Contaminants, and Criteria Pollutants)

Impact AQ-1: Short-term construction-generated emissions could exceed MBUAPCD significance thresholds and could be inconsistent with the AQMP. As a result, this impact is considered **potentially significant**.

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 project would result in the temporary generation of emissions from site grading and excavation, road paving, the application of architectural coatings, engine exhaust associated with construction equipment and worker trips, the movement of construction equipment (especially on unpaved surfaces), and wind blowing over bare ground.

Dust Emissions

Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities. The peak construction phase emissions typically occur during initial site preparation, including grading and excavation, due to the increased amount of surface disturbance that can generate dust and to construction equipment emissions. The MBUAPCD CEQA Guidelines (2008) allow the use of the acres of disturbance to determine the significance of grading and construction activities. Table 5-2 of the MBUAPCD CEQA Guidelines identifies the level of construction activity that could result in significant impacts if not mitigated. Within the NCCAB, construction PM_{10} emission impacts on regional air quality are assessed based on the quantity of earth movement that would take place on a given day of construction. The MBUAPCD has determined that construction activities that involve minimal earth moving over an area of 8.1 acres, or more, could result in 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 dust impacts if the area of disturbance were to exceed 2.2 acres per day (MBUAPCD 2008). Construction projects below the screening level thresholds are assumed to be below the applicable 82 lb/day significance threshold (MBUAPCD 2008).

The proposed project would result in potentially significant air quality impacts with regard to dust (PM_{10}). For purposes of this analysis, construction activities are assumed to occur at times over a 10-year or longer period on the undeveloped site. Site grading would primarily be accomplished using diesel-powered heavy equipment. During other construction phases, additional material would be imported to the site. This would include base rock, select soil/gravel for trenches and building pads, concrete, and asphalt for paving. Building materials would also be imported to the site. The proposed project would require grading and site contouring to accommodate the proposed improvements. A grading plan for the proposed project is not yet available; however, the proposed project's ground disturbance activities are expected to be extensive and are likely to exceed the 2.2-acre threshold on any given day during construction, which would be a **potentially significant impact** (Illingworth and Rodkin 2008).

The Air Quality Study approximated daily fugitive dust emissions for grading and construction activities using emission factors developed by the South Coast Air Quality Management District (Illingworth and Rodkin 2008). A general overall emission factor of 10 pounds per acre per day was found to represent typical daily emissions. On the most active days during grading, emissions would be higher. A conservative overall emission factor of 38.2 pounds per acre per day would apply to the most intense construction sites, which includes emissions associated with general construction activities, as well as those from intensive earth-moving activities. Specific emission factors require specific construction information, such as the amount of earthwork and the detail of control measures. Since that type of information is not available from the proposed project, the overall emission factors described above were used to estimate daily construction emissions (Illingworth and Rodkin 2008).

Using an emission factor of 10 pounds per acre per day would result in significant emissions if over 8.2 acres were disturbed on a typical day. For the most active construction phases, emissions would be significant if over 2.2 acres were disturbed in one day. Grading activity that encompasses more than 2.2 acres in a single day could result in on-site PM_{10} emissions that would be considered a **short term potentially significant impact.**

Emissions from wind erosion are difficult to predict since it is based on the amount of disturbed soil and changing wind speeds. Wind erosion emissions would vary considerably, but could be effectively controlled through active watering of the site or use of soil stabilization methods throughout the construction period. To greatly reduce wind erosion, disturbed areas also would have to be controlled on weekends or holidays when construction is not occurring. In general, the MBUAPCD recommends that grading activities be prohibited during periods of high wind (over 15 miles per hour) and that inactive storage piles be covered.

Diesel Emissions/TACs

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 limiting the concentrations at any one particular point.

The Air Quality Study analyzed the air quality impacts of the proposed project in regard to TACs. Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. Diesel engines emit a complex mix of pollutants including NO_X, particulate matter, and TACs. The most visible constituents of diesel exhaust are very small carbon particles or "soot," known as diesel PM or DPM. Diesel exhaust contains over 40 cancer-causing substances, most of which are readily adsorbed onto the soot particles. Among the TACs contained in diesel exhaust are dioxin, lead, polycyclic organic matter, and acrolein.

Short-term exposure to DPM is associated with variable irritation and inflammatory symptoms. Diesel engine emissions are responsible for a majority of California's estimated cancer risk attributable to air pollution. In 2000, the CARB identified an average potential cancer risk of 540 excess cases per million people, statewide, from DPM. In addition, DPM is a significant fraction of California's particulate pollution. Assessments by the CARB and the U.S. EPA estimate that DPM contributes to approximately 3,500 premature respiratory and cardiovascular deaths and thousands of hospital admissions annually in California. Diesel exhaust contains several chemicals detrimental to visibility and vegetation (OEHHA 2001).

The Air Quality Study concluded that the proposed project could result in significant construction-related air quality impacts from diesel exhaust and included recommendations to reduce the impact to a less than significant level. However, since the Air Quality Study was prepared, the MBUAPCD has suspended the use of its recommended mitigation measures for diesel exhaust, in lieu of changes in diesel emissions thresholds and control measures at the state and federal level, and the increasing availability of low emissions diesel fuel.

The U.S. EPA regulates diesel engine design and fuel composition at the federal level, and has implemented a series of measures since 1994 to reduce NO_X and particulate emissions from off-road diesel equipment. The U.S. EPA Tier 2 diesel engine standards were implemented from 2001 through 2006, Tier 3 standards from 2006 through 2008, and Tier 4 standards are being phased in through 2014. Ultra low sulfur off-road diesel fuel (15 ppm) became standard in 2010, replacing the prior 500 ppm fuel. The Tier 4 engines and ultra low sulfur fuels will reduce emissions by up to 65 percent compared to older engines and fuel (U.S. EPA 2004). The CARB's Regulation for In-use Off-road Diesel Vehicles establishes a state program to reduce emissions from older construction equipment. Although the implementation phasing for this regulation was delayed by budget legislation in early 2009, the regulation is currently in effect and will reduce construction equipment emissions over time.

Although the project buildout is likely to occur in several phases over a period of five to 16 years, the duration of construction activities per phase would occur over relatively short periods of time. Construction activity would be located a minimum of approximately 100 to 150 feet from sensitive receptors but would typically be located more than 500 feet away the majority of the time (Illingworth and Rodkin 2008). Exposure of sensitive receptors to diesel emissions during construction would be limited in duration and reduced through improvements in low emissions diesel fuel. However, if diesel-powered equipment were to be used within 100 feet of residences, a **short term potentially significant impact** could result. This impact would be mitigated to a less than significant level with implementation of MM AQ-1c (prohibiting idling longer than 5 minutes) and MM AQ-1e (staging large diesel vehicles at least 200 feet from residences).

Construction Criteria Air Pollutant Emissions

Construction period criteria pollutants are released in the form of exhaust from worker commute vehicles, generators, and construction equipment. URBEMIS modeling indicates that construction emissions for the proposed project could be as much as 322.5 lbs/day for ROG, 113.9 lbs/day for NO_X, 377 lbs/day of PM_{10} and 79 lbs/day of $PM_{2.5}$ (Illingworth and Rodkin 2008).

However, as noted above, ozone precursor emissions are accommodated in the emission inventories of State- and federally-required air plans and therefore would not have a significant impact on the attainment and maintenance of ozone standards. Therefore, the impact from these emissions is considered to be **less than significant.** Total emissions of PM_{10} (fugitive dust plus diesel exhaust) would, however, exceed 82 pounds per day during construction prior to mitigation. Therefore, the impact from PM_{10} is considered a short-term **potentially significant impact**. Mitigation Measures MM AQ-1a through MM AQ-1f are recommended below to address this potentially significant impact. The impact would be **less than significant with mitigation incorporated**.

Specific Plan Policies Designed to Reduce Emissions

The Fairview Corners Residential Specific Plan contains a number of policies that are designed to reduce impacts associated with short-term construction generated emissions. These are summarized as follows:

- Minimize impacts to air quality. (Policy RM-6.1)

Action #2

- Provide a construction dust mitigation plan prior to the start of construction that specifies the methods of dust control and other measures to be implemented. At a minimum, this plan shall include the following measures:

- Limit the amount of acreage to be graded at one time.
- Water all construction areas for specified periods of time.
- Cover soil or maintain at least 2 feet of freeboard on all hauling trucks.
- Pave, apply water, apply (non-toxic) soil stabilizers, and/or hydroseed active construction areas, etc. according to certain criteria.
- Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles.
- Limit traffic speeds on unpaved roads to 15 mph.
- Replant vegetation in disturbed areas as quickly as possible.
- Suspend excavation and grading activity when hourly-average winds exceed 15 mph and visible dust clouds cannot be contained within the site.

Action #3

- Reduce NO_X exhaust and particulate matter emissions by preparing and implementing a plan, acceptable to MBUAPCD, which demonstrates that either:
  - heavy duty construction vehicles and equipment will achieve specified NO_X and PM reduction; or
  - heavy duty construction vehicles and equipment will meet certain criteria in terms of manufacturing year, ability to meet certain emissions standards, and being equipped with diesel particulate matter filters.
- Install temporary electrical service whenever possible to avoid the need for independently powered equipment.
- Prohibit diesel equipment idling for longer than 5 minutes (except under certain conditions) and install signage to that effect.
- Properly tune and maintain construction equipment and vehicles.
- Stage large diesel-powered equipment at least 200 feet from any active land uses (e.g., residences).

Action #4

- Divert a minimum of 25 percent of total materials taken off the construction site from landfills or incinerators.

Implementation of the above-referenced Specific Plan policies and actions would help reduce the project's short-term construction-related impacts. To ensure construction-related impacts are mitigated to a less than significant level, implementation of MM GEO-1 and MM GEO-3 (to reduce related impacts to soil erosion from grading) and Mitigation Measures AQ-1a through AQ-1f, below, are proposed.

MM AQ-1a: The developer shall reduce exhaust NOx and particulate matter emissions by implementing one of the following measures:

1. The project shall prepare and implement a plan, acceptable to the MBUAPCD, demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles and equipment to be used to construct the project, including owned, leased and subcontractor vehicles, shall achieve a minimum project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction, in compliance with the then-most recent MBUAPCD standards and CARB fleet average that are in effect at the time of construction; or

2. The developer shall prepare and implement a plan, acceptable to the MBUAPCD, demonstrating that all off-road construction vehicles/equipment greater than 50 horsepower that will be used on site for more than one week shall: 1) be manufactured during or after 1996, 2) shall meet the NOx emissions standard of 6.9 grams per brakehorsepower hour or better, and 3) shall be equipped with CARB-verified level 2 or 3 diesel particulate matter filters.

MM AQ-1b: The developer shall install and maintain temporary electrical service on the site whenever possible to avoid the need for independently powered equipment (e.g., compressors) during construction of the project.

MM AQ-1c: The developer shall prohibit diesel equipment or vehicles from idling for longer than five minutes, except for rotating drum concrete trucks, which may keep their engines running continuously so long as they are staged more than 200 feet away from residences. The developer shall install clearly visible signage on the construction site that states these requirements.

MM AQ-1d: The developer shall ensure that construction equipment and vehicles are properly maintained for low emissions.

MM AQ-1e: The developer shall ensure that all large diesel powered vehicles and equipment are staged at least 200 feet from any residences.

MM AQ-1f: In addition to implementing Mitigation Measures MM AQ-1a through 1e above, the developer shall implement best-available control measures for the control of

construction-related emissions from the project, as set forth in the then-applicable MBUAPCD's CEQA Guidelines. For example, such mitigation measures may include the following:

- Water all active construction areas at least twice daily. Frequency should be based on the type of operation, soil and wind exposure.
- Prohibit all grading activities during periods of high wind (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 to exposed areas after cut and fill operations and hydroseed area.
- Maintain at least 2 feet of freeboard on haul trucks.
- Cover all trucks hauling dirt, sand or loose materials.
- Plant the windbreaks on the windward perimeter of construction projects if adjacent to open land.
- Plant vegetative cover in disturbed areas as soon as possible.
- Cover inactive storage piles.
- Install wheel washers at the entrance to construction sites for all existing trucks.
- Pave all roads on construction sites.
- Sweep streets if visible soil material is carried out from the construction site.
- Post a publicly visible sign that specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and take corrective action within 48 hours. The phone number for the Monterey Bay Unified Air Pollution Control District shall be visible to ensure compliance with Rule 402 (Nuisance).
- Limit the area under construction at any one time.

With implementation of the above-referenced mitigation measures, the project's construction-related impacts would be **less than significant with mitigation incorporated**.

Long-Term Emissions of Criteria Air Pollutants

Impact AQ-2: Long-term operational emissions of the proposed project would not exceed MBUAPCD significance thresholds. Therefore, this would be a **less than significant** impact.

Operational Impacts

Regional area (direct) and mobile-source (indirect) emissions associated with the proposed land uses were estimated using the CARB-approved URBEMIS2007 (version 9.2.4) computer program, based on model default settings and vehicle trip characteristics for San Benito County. Vehicle trip generation rates for proposed land uses were based on data obtained from the transportation analysis prepared for this project.

Table 5-4 in the MBUAPCD CEQA Guidelines identifies indirect sources that could significantly affect regional air quality if not mitigated. Projects that exceed the thresholds listed in Table 5-4 would contribute to a significant cumulative impact. According to Table 5-4, the threshold of significance for single-family residential projects is 810 dwelling units. Because the project's maximum unit count would not exceed this threshold, the project's contribution of indirect source ozone precursor emissions to regional air quality impacts would not be cumulatively considerable. Therefore, the project would result in a **less than significant** impact.

In accordance with MBUAPCD guidance, long-term operational emissions attributable to the proposed project were quantified assuming full buildout of 220 single-family residential units for both summer and winter conditions, and the project's direct and indirect operational contribution to regional air quality was evaluated. The URBEMIS analysis looked at emissions of volatile organic compounds (VOC), also known as reactive organic gases (ROG), nitrogen oxides (NOx), carbon monoxide (CO), and PM_{10}. The results of the URBEMIS analysis of the proposed project can be found in Table 9, Estimated Daily Project Emissions (Ongoing Operations for Direct and Indirect Sources).

According to the MBUAPCD guidance, the ROG and NOx thresholds of significance are applicable to the sum of direct and indirect emissions while the CO threshold is applicable to direct emissions and the PM10 threshold is applicable to emissions occurring on the project site. Emissions occurring on the project site would be from direct sources. According to the analysis, the proposed project would result in 29.3 lbs/day of ROG and 26 lbs/day of NOx from direct and indirect sources, 11 lbs/day of CO from direct sources, and 28 lbs/day of PM_{10} from direct sources. All emissions are predicted to be below MBUAPCD significance thresholds. Therefore, impacts from project emissions would be **less than significant**. The URBEMIS results are included in the Air Quality Study in Appendix F of this EIR.

Table 9 Estimated Daily Project Emissions (Ongoing Operations for Direct and Indirect Sources)

Scenario	Modeled Daily Emissions (lbs/day)			
	Reactive Organic Gases (ROG) - Summer	Nitrogen Oxides (NOx) – Summer	Carbon Monoxide (CO) – Winter	Respirable Particulates (PM_{10}) - Winter
Residential (2020)				
Area Source Emissions (Direct)	14.9	2.9	11	27.8
Mobile Source Emissions (Indirect)	14.4	23.1	See note 3	See note 3
Total	29.3	26	11	28
MBUAPCD Thresholds	137	137	550[1]	82[2]

Source: URBEMIS2007 Air Emissions From Land Use Ver. 9.2.4 in the year 2020 and 2035, Illingworth and Rodkin 2008.

Notes: 1. For stationary sources only
2. Applies only to on-site emissions
3. These emissions are not listed in this table because they do not count towards the significance thresholds.

Based on the MBUAPCD thresholds, the proposed project's operational ozone precursor emissions would contribute to a cumulative impact on regional air quality; however, the proposed project's contribution to that impact would not be cumulatively considerable. As previously demonstrated, the project would not exceed the screening level for single-family residential projects of 810 dwelling units and would not exceed the threshold for ROG and NO_x. According to the MBUAPCD CEQA Guidelines, the project would not significantly affect attainment or maintenance of the ozone standards and would not have a significant impact on regional air quality (MBUAPCD CEQA Guidelines § 5.4).

No mitigation is required.

Specific Plan Policies Designed to Further Reduce Air Quality Impacts

Although the proposed project would already have less than significant individual and cumulative air quality effects from indirect and direct criteria air emissions, implementation of various Specific Plan policies and related actions would further reduce these emissions by promoting energy efficiency and encouraging alternatives to motorized transportation within the project site. Following is a summary of those relevant policies:

- Facilitate alternative energy sources. (Policy RM-8.1)
- Pre-plumb/pre-wire at least one-third of units for solar power and offer solar power as an option on all units. (Policy RM-8.1, Action #1)
- Consider connecting the project to the Gavilan San Benito College Campus community geothermal heat pump energy or heating system, in the event such a system is constructed. (Policy RM-8.1, Action #2)
- Facilitate energy conservation through design techniques. (Policy RM-8.2)
- Design houses to facilitate passive solar heating during the winter, and use cool roofs and thermal window coverings to reduce solar heat gain during the summer. (Policy RM-8.2, Action #1)
- Design lots and houses to maximize rooftop solar energy output potential. Where feasible, roof pitches and roof orientation should be designed to maximize solar exposure to roof-top energy panels (minimum 300 feet of unobstructed roof area facing within 30 degrees of south). (Policy RM-8.2, Action #2)
- Make photovoltaic electrical systems and solar hot water available for at least one-third of dwelling units. Photovoltaic pre-wiring/conduit shall be installed and photo-voltaic electrical systems and solar hot water shall be offered as an option on all dwelling units. (Policy RM-8.2, Action #3)
- Equip dwellings with energy efficient water heaters and heat recovery drain systems. (Policy RM-8.2, Action #4)
- Vegetation within 10 feet of a property line that is deemed to interfere with solar access at an adjoining lot shall be subject to height restrictions as necessary to protect such solar access. (Policy RM-8.2, Action #5)
- Porches shall be placed only on the east, south, or west side of houses to provide shading in the summer, and to maximize northern light exposure to the interior of houses. (Policy RM-8.2, Action #6)
- South and west facing elevations shall be designed with roof overhangs that block summer sun from windows and allow penetration of winter sun. (Policy RM-8.2, Action #7)
- Design residences to minimize the need for artificial lighting. Provide ample windows; light towers; light wells; dormers; skylights; or other features to enhance natural lighting. (Policy RM-8.2, Action #8)

- To increase natural light to small residential lots, consideration should be given to the orientation of roof gables and the effect of the roof line on yard shading. (Policy RM-8.2, Action #9)
- Landscaping should include deciduous trees to shade south and west-facing walls in the summer and allow sunlight penetration in the winter. (Policy RM-8.2, Action #10)
- Provide communications wiring within all dwelling units to facilitate telecommuting. (Policy RM-8.2, Action #11)
- Provide programmable thermostats for all heating systems. (Policy RM-8.2, Action #12)
- Use heating systems with an Annual Fuel Use Efficiency (AFUE) of 95% or greater, seal all ducts, and insulate ducts in unconditioned spaces. (Policy RM 8.2, Action #13)
- Equip all garages/carports with a 240-volt 40-amp circuit suitable for electric vehicle charging. (Policy RM-8.2, Action #14)
- If multi-family uses are developed, the parking lot shall be shaded by either high albedo (reflective) roofs, roofs with solar panels, or trees that provide a minimum of 50 percent shade within 10 years of planting. (Policy RM-8.2, Action #15)

Contribution to Local Mobile-Source CO Concentrations

Impact AQ-3: Localized mobile-source emissions of carbon monoxide would not exceed applicable ambient air quality standards. As a result, this impact is considered **less than significant**.

Localized 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. However, under certain meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels. Congested intersections with a large volume of traffic have the greatest potential to cause high localized concentrations of carbon monoxide. The highest carbon monoxide concentrations typically occur during winter in areas where traffic congestion occurs. 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 LOS E or F. Unsignalized intersections projected to operate at unacceptable levels of service do not typically have sufficient traffic volumes to result in localized concentrations of CO that would exceed applicable standards.

Currently, the California AAQS for mobile sources of carbon monoxide is nine parts per million (ppm). The highest carbon monoxide level measured in the NCCAB is one (1) ppm for an eight-hour exposure. The air quality analysis reported that the highest concentration of mobile source carbon monoxide that would occur in connection with the project would be 2.5 ppm, which would occur at the intersection of Fairview Road and Airline Highway (page 94). This level is well below state standards and therefore the impacts on local air quality resulting from the proposed project individually would be **less than significant**.

No mitigation is required.

Odors Produced by the Proposed Project or Affecting the Proposed Project

Impact AQ-4: The proposed project would not create new odor sources and would not be affected by existing nearby odors. As a result, this impact is considered **less than significant**.

According to the MBUAPCD CEQA Guidelines, odors are objectionable emissions of one or more pollutants (sulfur compounds, methane, etc.) that are a nuisance to persons and may trigger asthma episodes in people with sensitive airways. Nuisance odors are commonly associated with refineries, landfills, sewage treatment, agriculture, etc. The proposed project may result in some short-term construction-related odors (e.g., asphalt during paving), but is not anticipated to produce offensive odors during operation, given the typical residential uses. Adjacent uses are not expected to result in significant odors that would be a nuisance to future project site residents. A small farm adjoins the southeast corner of the project site. This farm is a certified producer of dried herbs and flowers such as Lavender, Roses, Lemon, Orange, Calendula, Comfrey, Elderflower, Lemon Balm, Lemon Verbena, Marjoram, Rosemary, White Sage, and Willow. There are no indications of any livestock or other agricultural activities that would pose significant odors that would constitute a nuisance to future project residents. Further, the open space area and/or perimeter pathway would provide a sufficient buffer between the farm and residential uses, which should further reduce any potential odor impacts. The impact would be **less than significant.**

No mitigation is required.

Consistency with the Applicable Air Quality Plan

Impact AQ-5: The proposed project would not conflict with the local Air Quality Plan. As a result, this impact is considered **less than significant**.

To achieve compliance with state AAQS, the MBUAPCD adopted the Air Quality Management Plan (AQMP) in 1991 (latest revision August 2008). Conformity of population-related projects with the AQMP is assessed by comparing the total potential population growth generated by the project to population forecasts adopted by Association of Monterey Bay Area Government (AMBAG). These population projections are used to generate emission forecasts upon which the AQMP is based. The 2008 Population, Housing Unit, and Employment Forecasts adopted by the AMBAG Board of Directors on June 11, 2008 have been incorporated into the current AQMP (2008). Therefore, project consistency with the Population, Housing Unit and Employment Forecast also indicates project consistency with the AQMP. MBUAPCD has determined that the project is consistent with the forecast (Jean Getchell, email corresp. May 26, 2011). Therefore, the project is consistent with the AQMP, and impacts would be **less than significant**.

No mitigation is required.

Long-Term Exposure of Sensitive Receptors to Toxic Air Contaminants

Impact AQ-6: Residential receptors associated with the proposed project would not be exposed to localized concentrations of toxic air contaminants exceeding applicable thresholds. As a result, this impact is considered **less than significant**.

Sensitive receptors could be exposed to low levels of TACs during operational phases of the proposed project. As noted above, health-related risks in connection with the emissions of DPM are primarily associated with long-term exposure and the related risk to 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.

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 that can include stationary or mobile sources. Major stationary sources of TACs have not been identified within the vicinity of the project site nor are any major stationary sources of TACs included in the proposed project. According to information provided by the County's transportation consultant for the pending Comprehensive General Plan Update, the Average Daily Traffic (ADT) on Fairview Road near the project site is about 3,890 vehicles per day and the ADT on Airline Highway ranges from 9,505 cars per day to about 19,328 cars per day in the vicinity of the project site (Jeff Elia. Personal communication March 10, 2011). Both of these roadways operate well under the threshold of 50,000 to 100,000 ADT, which is the volume of traffic that has the potential to result in a significant exposure to TAC emissions from mobile sources (CARB 2005). The proposed project is also not located within 500 feet of a freeway or Airline Highway.

Therefore, impacts related to long-term TAC emissions would be **less than significant.**

No mitigation is required.

3.3.5 CUMULATIVE IMPACTS AND MITIGATION MEASURES

The geographic extent of the cumulative setting consists of the project site and the remainder of San Benito County, including the City of Hollister, as well as consideration of regional activities and attributes (e.g., regional traffic volumes and patterns) that could adversely affect the NCCAB. Traffic volumes and patterns used in the analysis of cumulative impacts include consideration of past, present and reasonably foreseeable probable future land use development. Current and reasonably foreseeable, probable future projects include:

- **Gavilan College San Benito Campus:** This project involves the construction of a 3,500 full-time equivalent (FTE) student college facility, as well as approximately 285 residential units and 35,000 square feet of retail space, on a 77-acre site at the northeast corner of Fairview Road and Airline Highway.
- **Award Homes Project:** This project involves the construction of 595 single-family homes and 100 apartment units on the west side of Fairview Road, south of St. Benedict's Church and east of Calistoga Drive within the City of Hollister.
- **Santana Ranch Project:** This project involves the construction of a maximum of 1,092 dwelling units, 65,000 square feet of neighborhood commercial uses, up to an additional 41,000 square feet of commercial mixed uses, and related community facilities and project infrastructure on a 292-acre site adjacent to the City of Hollister.

The cumulative projects list (**Section 3.0**) also includes a number of smaller residential projects within the City of Hollister, as well as a number of industrial and warehousing projects in the vicinity of the Hollister Municipal Airport. Project-generated emissions of ozone-precursor pollutants would contribute cumulatively to the entire air basin.

Cumulative Contribution to Regional Air Quality Conditions

Impact AQ-7: The proposed project's population along with the population projections for other cumulative projects is within projections for San Benito County, and therefore the proposed project is consistent with the AQMP. This cumulative impact is considered **less than significant**.

As discussed earlier in this section, the proposed project is consistent with the AQMP. In accordance with the MBUAPCD CEQA Guidelines, a project that is consistent with the AQMP is considered to have a **less than significant impact** on cumulative criteria air pollutant emissions.

No mitigation is required.