4.5 AIR QUALITY

4.5.1 ENVIRONMENTAL SETTING

IN THIS SECTION:

- Regulatory Setting
- Regional Setting
- Criteria Pollutants
- Existing Air Quality Conditions
- Air Basin Plans
- Climate Change

The following section is based on an air quality and greenhouse gas emissions analysis prepared for this EIR by Illingworth & Rodkin, Inc. The report is included in Appendix E. The section also draws from the City of Santa Cruz *General Plan 2030* EIR (SCH#2009032007), which was certified on June 26, 2013. The General Plan EIR is incorporated by reference in accordance with section 15150 of the State CEQA Guidelines. Relevant discussions are summarized below under the "Climate Change" subsection. The General Plan EIR is available for review at the City of Santa Cruz Planning and Community Development Department (809 Center Street, Room 107, Santa Cruz, California) during business hours: Monday through Thursday, 8 AM to 12 PM and 1 PM to 5 PM. The General Plan EIR is also available online on the City's website at: http://www.cityofsantacruz.com/index.aspx?page=348.

REGULATORY SETTING

Air quality within the Monterey Bay region is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy making, education, and a variety of programs. The agencies responsible for improving the air quality within the air basin are discussed below.

Federal Regulations

The federal Clean Air Act (CAA) and its amendments establish the National Ambient Air Quality Standards (NAAQS). These standards identify levels of air quality for "criteria pollutants" that are regarded as the maximum levels of ambient (background) air pollutants considered to have an adequate margin of safety necessary to protect the public health and welfare. The criteria pollutants are ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2 is a form of NO_x), sulfur oxides (SO_2 is a form of SO_x), particulate matter less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$, respectively), and lead. The U.S. Environmental Protection Agency (EPA) Region IX office oversees compliance with the FCAA.

State Regulations

CALIFORNIA CLEAN AIR ACT

The California Air Resources Control Board (CARB), a department of the California Environmental Protection Agency (CalEPA), oversees air quality planning and control throughout California. Its responsibility lies with ensuring compliance with the California Clean Air Act (CCAA) and its amendments, as well as responding to the FCAA requirements and regulating emissions from motor vehicles sold in California. It also sets fuel specifications to further reduce vehicular emissions. CARB establishes the California Ambient Air Quality Standards – CAAQS, pursuant to the CCAA. These standards apply to the same criteria pollutants as the FCAA and also include sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride.

TOXIC AIR CONTAMINANTS

In addition to the California's Ambient Air Quality Standards, toxic air contaminants (TACs) are other pollutants that include carcinogens and noncarcinogens. California regulates TACs through its air toxics program and Air Toxics "Hot Spots" Information and Assessment of the Health and Safety Code. The CARB identifies TACs in conjunction with the State Office of Environmental Health Hazard Assessment (OEHHA). Air quality control agencies, including the Monterey Bay Unified Air Pollution Control District (MBUAPCD), must incorporate air toxics control measures into their regulatory programs or adopt equally stringent control measures as rules within six months of adoption by CARB.

Diesel particulate matter was identified as a toxic air contaminant (TAC) by the state of California in 1998. The CARB developed a comprehensive strategy to control diesel PM emissions, including preparation of the "Diesel Risk Reduction Plan." Once the Diesel Risk Reduction Plan was adopted, the CARB started developing emission regulations for a number of categories of in-use diesel vehicles and equipment. An important part of the Diesel Risk Reduction Plan is a series of measures for various categories of in-use on- and off-road diesel engines, which generally are based on the following types of controls:

- Retrofitting engines with emission control systems, such as diesel particulate filters or oxidation catalysts,
- Replacement of existing engines with new technology diesel engines or natural gas engines, and
- Restrictions placed on the operation of existing equipment.

Regional Regulations

Regulatory oversight for air quality in the North Central Coast Air Basin ("Basin"), in which the City of Santa Cruz is located, rests at the regional level with the Monterey Bay Unified Air Pollution Control District (MBUAPCD), the CARB at the state level, and the U.S. EPA Region IX office at the federal level. The MBUAPCD is one of 35 air districts established to protect air quality in California. The North Coast Basin is comprised of Santa Cruz, Monterey, and San Benito Counties.

The CCAA requires each nonattainment district in the state to adopt a plan showing how the State Ambient Air Quality Standard for ozone would be met. The CCAA required initial preparation of an Air Quality Management Plan (AQMP) in 1991, with subsequent updates every three years. The MBUAPCD adopted its first AQMP in 1991; the current plan was adopted by the Air District in August 2008.

The MBUAPCD has primary responsibility for local air quality by controlling air pollution from stationary sources of air pollution. The District has adopted a number of rules affecting both stationary and area-wide sources of emissions for the purpose of achieving the state and federal AAQS for ozone.

The MBUAPD also regulates TACs from new or modified sources under Rule 1000, and a Board-approved protocol that applies to any source which requires a permit to construct or operate pursuant to District regulations and has the potential to emit carcinogenic or noncarcinogenic TACs. The District's Rule 1000 also requires sources of carcinogenic TACs to install best control technology and reduce cancer risk to less than one incident per 100,000 population. Sources of noncarcinogenic TACS must apply reasonable control technology. The District also implements Rule 1003, Air Toxic Emissions Inventory and Risk Assessments, which establishes and implements the Air Toxics Hot Spots Act. Rule 1003 also requires that any increased cancer risk resulting from an existing facility's emissions is less than one incident per 100,000 population (Monterey Bay Unified Air Pollution Control District, February 2008).

Local Regulations

The City of Santa Cruz addresses odors and pollutants in its Municipal Code. Section 24.14.264 prohibits emission of odorous gases or matter in readily detectable quantities. Section 24.14.272 prohibits emissions from any source that exceed permissible amounts or limits established by the Monterey Bay Unified Air Pollution Control District.

REGIONAL SETTING

The North Central Coast Air Basin (NCCAB), which is just south of the San Francisco Bay Area Air Basin, covers an area of 5,159 square miles and consists of the counties of Santa Cruz, San Benito, and Monterey. Topography and meteorology heavily influence air quality. In the project vicinity, the northwest sector of the basin is dominated by the Santa Cruz Mountains (Monterey Bay Air Pollution Control District, February 2008).

The semi-permanent high pressure cell in the eastern Pacific is the basic controlling factor in the climate of the air basin. In the summer, the high pressure cell is dominant and causes persistent west and northwest winds over the entire California coast. Air descends in the Pacific High, forming a stable temperature inversion of hot air over a cool coastal layer of air. The onshore air currents pass over cool ocean waters to bring fog and relatively cool air into the coastal valleys. The warmer air aloft acts as a lid to inhibit vertical air movement (Monterey Bay Air Pollution Control District, February 2008).

CRITERIA POLLUTANTS

Ozone, the primary constituent of smog, is not directly emitted but is formed in the atmosphere over several hours from combinations of various precursors in the presence of sunlight. Nitrogen oxides (NO_x) and volatile organic compounds (VOCs) are considered to be the primary compounds, or precursors, contributing to the formation of ozone. Ozone is viewed as both a secondary pollutant and a regional pollutant. The primary sources of VOC within the planning area are on- and off-road motor vehicles, cleaning and surface coatings, solvent evaporation, landfills, petroleum production and marketing, and prescribed burning. The primary sources of NOx are on- and off-road motor vehicles, stationary source fuel combustion, and industrial processes (Monterey Bay Unified Air Pollution Control District, August 2008). Short-term exposure to ozone results in injury and damage to the lung, decreases in pulmonary function, and impairment of immune mechanisms (Ibid.).

Inhalable Particulates refer to particulate matter less than 10 microns in diameter (PM_{10} and $PM_{2.5}$). In 1997, EPA adopted a fine particulate matter standard of 2.5 microns or less in diameter ($PM_{2.5}$), and CARB adopted an annual $PM_{2.5}$ standard in 2002. PM_{10} and $PM_{2.5}$ are respirable particulate matter that are classified as primary or secondary depending on their origin. Primary particles are unchanged after being directly emitted (e.g., road dust) and are the most commonly analyzed and modeled form of PM_{10}. Because it is emitted directly and has limited dispersion characteristics, this type of PM_{10} is considered a localized pollutant. In addition, secondary PM_{10} can be formed in the atmosphere through chemical reactions involving gases.

PM_{10} and $PM_{2.5}$ are respirable particulate matter and because of their small size, they can be inhaled deep into the lungs and are therefore a health concern. Key health effects categories associated with PM include: premature mortality; aggravation of respiratory and cardiovascular disease; changes in lung function and increased respiratory symptoms; and altered respiratory defense mechanisms (Monterey Bay Unified Air Pollution Control District, February 2008).

Carbon monoxide (CO) is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. Because it is directly emitted from combustion engines, carbon monoxide can have adverse localized impacts, primarily in areas of heavy traffic congestion. Because it is emitted directly and has limited dispersion characteristics, CO is considered a localized pollutant (Monterey Bay Unified Air Pollution Control District, February 2008).

When carbon monoxide combines with hemoglobin in the blood, the oxygen-carrying capacity of the blood is reduced and the release of oxygen is inhibited or slowed. This condition puts the following at risk: patients with angina, persons with other cardiovascular diseases, chronic obstructive lung disease, or asthma; persons with anemia, and fetuses. At higher levels, CO also affects the central nervous system. Symptoms of exposure may include headaches, dizziness, sleepiness, nausea, vomiting, confusion, and disorientation (Monterey Bay Unified Air Pollution Control District, February 2008). At high concentrations, CO can reduce the oxygen-carrying capacity of the blood and cause unconsciousness and death.

EXISTING AIR QUALITY CONDITIONS

Ambient Air Quality Standards

Ambient air quality standards (AAQS) are set to establish levels of air quality that must be maintained to protect the public from the adverse effects of air pollution. State standards are established to protect public health, including the most sensitive members of the population. National standards include a primary standard to protect public health and a secondary standard to protect the public welfare including property, vegetation, and visibility. However, the numerical values for both standards are the same (Monterey Bay Unified Air Pollution Control District, August 2008).

As indicated above, the federal and state governments have established AAQS for six criteria pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter smaller than or equal to 10 microns in diameter (PM_{10}) and 25 microns in diameter (PM_{25}), and lead. As indicated above, the state standards also include sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride.

Local Ambient Air Quality & Attainment Status

Ambient air quality is monitored at nine stations within the NCCAB. The network includes seven stations operated by the MBUAPCD, one station operated by the National Park Service at the Pinnacles National Monument, and one station operated by an industry group in King City. The monitoring stations operated by the MBUAPCD are part of the State and Local Air Monitoring Systems (SLAMS) network, and are located in Salinas, Hollister, Santa Cruz, Watsonville, Scotts Valley, and Carmel Valley. There is an existing monitoring station within the City, located on Soquel Avenue, just west of Seventh Avenue.

Designations in relation to state standards are made by the CARB, while designations in relation to national standards are made by the EPA. State designations are updated annually, while the national designations are updated either when the standards change or when an area requests re-designation due to changes in air quality. Designations are made according to air basin, and in some cases designations are made at the county level (Monterey Unified Air Pollution Control District, August 2008). Designations are made for each criteria pollutant according to the categories listed below. Nonattainment designations are of most concern because they indicate that unhealthy levels of the pollutant exist in the area, which typically triggers a need to develop a plan to achieve the applicable standards (Ibid.).

- **Attainment** – Air quality in the area meets the standard.
- **Nonattainment Transitional** – Air quality is approaching the standard (State only).
- **Nonattainment** – Air quality in the area fails to meet the applicable standard.
- **Unclassified** – Insufficient data to designate area, or designations have yet to be made.

Table 4.5-1 summarizes the attainment status for criteria pollutants in the NCCAB. The Basin is currently in attainment for the federal PM_{10} standard and for state and federal nitrogen

dioxide, sulfur dioxide, and carbon monoxide standards. The basin is considered attainment or unclassified for other national standards, and non-attainment for the one-hour state ozone standard and for the state PM_{10} standard. The NCCAB does not meet the state PM_{10} standard, although it is in attainment for the state $PM_{2.5}$ standard.

TABLE 4.5-1
Attainment Status for the North Central Coast Air Basin – January 2013

Pollutant	State [1]	Federal
Ozone (O_3)	**Nonattainment** [2]	Attainment [3]
Inhalable Particulates (PM_{10})	**Nonattainment**	Attainment
Fine Particulates ($PM_{2.5}$)	Attainment	Unclassified/Attainment [4]
Carbon Monoxide (CO)	Monterey Co. – Attainment San Benito Co. – Unclassified Santa Cruz Co. - Unclassified	Attainment/Unclassified
Nitrogen Dioxide (NO_2)	Attainment	Attainment/Unclassified [5]
Sulfur Dioxide (SO_2)	Attainment	Attainment [6]
Lead	Attainment	Unclassified/Attainment [7]]

[1] State designations based on 2009 to 2011 air monitoring data.
[2] 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 eight-hour standard of 0.070 ppm.
[3] On March 12, 2008, EPA adopted a new eight-hour ozone standard of 0.075 ppm. In April 2012, EPA designated the NCCAB attainment/unclassified based on 2009-2011 data, with a design value of 0.70 ppm.
[4] In 2006, the Federal 24-hour standard for PM2.5 was revised from 65 to 35 ug/m3. In 2009, EPA designated the NCCAB as attainment/unclassified.
[5] In 2011, EPA indicated its plans to designate the entire state as attainment/ unclassified for the 2010 NO_2 standard. Final designations have yet to be made by EPA.
[6] In June 2011, the ARB recommended to EPA that the entire state be designated as attainment for the 2010 Primary SO_2 standard. Final designations have yet to be made by EPA.
[7] 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 ug/m3 to 0.15 ug/m3. Final designations were made by EPA in November 2011.

SOURCE: Monterey Bay Unified Air Pollution Control District website: http://www.mbuapcd.org/programs/planning

AIR BASIN PLANS

Air Quality Management Plan

The 1991 AQMP for the Monterey Bay Area was the first plan prepared in response to the California Clean Air Act of 1988 that established specific planning requirements to meet the ozone standard. The Act requires that the AQMP be updated every three years. The current AQMP, adopted in 2008, is the fifth update to the 1991 AQMP, with the first four updates completed in 1994, 1997, 2000, and 2004.

The air basin is a nonattainment area for the State Ambient Air Quality Standards for both ozone and inhalable particulate matter (PM_{10}). The AQMP addresses only attainment of the state ozone standard. Attainment of the state PM_{10} standard is addressed in the District's Particulate Plan, which was adopted in December 2005 and is summarized further below.

Maintenance of the national eight-hour standard for ozone is addressed in the District's "Federal Maintenance Plan for the Monterey Bay Region," which was adopted in March 2007 and also is summarized below.

The 2008 AQMP includes an updated air quality trends analysis, which now reflects both the 1- and eight-hour standards, as well as an updated emission inventory. The inventory includes stationary sources, area-wide sources, and mobile sources. The emissions forecasts consider growth factors such as population, housing, employment, industrial output, vehicle miles traveled, etc., developed by state and local agencies such as the Association of Monterey Bay Area Governments (AMBAG). These growth factors are used to estimate forces which increase emissions, while "control factors" estimate the offsetting effect of emissions controls (Monterey Bay Unified Air Pollution Control District, August 2008). The AQMP indicates that, despite a significant overall increase in population of over 360,000 persons within the NCCAB between 1990 and 2030 (59 percent increase), emissions are expected to decrease by over 130 tons/day (55 percent decrease). This demonstrates a major success for regional control strategies in that despite a significant increase in population, emissions are expected to decline significantly. This is largely due to reductions in tail-pipe emissions from motor vehicles, as well as the application of clean air technologies on power plants (Monterey Bay Unified Air Pollution Control District, August 2008).

Federal Maintenance Plan

The "Federal Maintenance Plan" (May 2007) presents the strategy for maintaining the NAAQS for ozone in the NCCAB. It is an update to the 1994 Federal Maintenance Plan, which was prepared for maintaining the one-hour NAAQS for ozone that since has been revoked and is superseded by the current eight-hour ozone standard. Effective June 15, 2004, the U.S. EPA designated the NCCAB as an attainment area for the eight-hour NAAQS for ozone. The plan includes an emission inventory for the years 1990 to 2030 for VOC and NO_X, the two primary ozone precursor gases, as explained above. A contingency plan is included to ensure that any future violation of the standard is promptly corrected (Monterey Bay Unified Air Pollution Control District, May 2007).

Particulate Matter Plan

The purpose of the "Particulate Matter Plan" (December 2005) is to fulfill the requirements of Senate Bill 655, which was approved by the California Legislature in 2003 with the objective of reducing public exposure to particulate matter. The legislation requires CARB, in conjunction wit local air pollution control districts, to adopt a list of the most readily available, feasible, and cost-effective control measures that could be implemented by air pollution control districts to reduce ambient levels of particulate matter in their air basins (Monterey Bay Unified Air Pollution Control District, December 2005). The Plan's proposed activities include control measures for fugitive dust, public education, administrative functions, and continued enhancements to the Air District's Smoke Management and emission reduction incentive programs.

CLIMATE CHANGE

A full discussion of global climate change is presented in the *General Plan 2030* EIR (DEIR pages 4.12-1 to 4.12-20 and FEIR pages 3-26 to 3-27), which is incorporated by reference; key elements of the discussion are summarized below. Climate change refers to any significant change in measures of climate, such as average temperature, precipitation, or wind patterns over a period of time. Climate change may result from natural factors, natural processes, and human activities that change the composition of the atmosphere and alter the surface and features of the land. Significant changes in global climate patterns recently have been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of greenhouse gas (GHG) emissions in the atmosphere. Greenhouse gases trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. Climate change models predict changes in temperature, precipitation patterns, water availability, and rising sea levels, and these altered conditions can have impacts on natural and human systems in California that can affect California's public health, habitats, ocean and coastal resources, water supplies, agriculture, forestry, and energy use.

The most common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide. The primary contributors to GHG emissions in California (as of 2008) are transportation (about 37 percent), electric power production (24 percent), industry (20 percent), agriculture and forestry (6 percent), and other sources, including commercial and residential uses (13 percent). Approximately 81 percent of California's GHG emissions are carbon dioxide produced from fossil fuel combustion.

The State of California passed the Global Warming Solutions Act of 2006 (AB 32), which requires reductions of GHG emissions generated within California. The Governor's Executive Order S-3-05 and AB 32 (Health & Safety Code, § 38501 et seq.) both seek to achieve 1990 emissions levels by the year 2020. Executive Order S-3-05 further requires that California's GHG emissions be 80 percent below 1990 levels by the year 2050. AB 32 defines GHGs to include carbon dioxide, methane, nitrous oxide, hydrocarbons, perfluorocarbons, and sulfur hexafluoride.

The California Air Resources Board (CARB) is the lead agency for implementing AB 32. In accordance with provisions of AB 32, CARB has completed a statewide Greenhouse Gas (GHG) Inventory that provides estimates of the amount of GHGs emitted to, and removed from, the atmosphere by human activities within California. Based on review of this inventory, in December 2007 CARB approved a 2020 emissions limit of 427 CO_2 equivalent million metric tons (MMT CO_2e)[1], which is equivalent to the 1990 emissions level. In accordance with requirements of AB 32, a Scoping Plan was released in October 2008 and adopted by CARB in December 2008, which includes elements for reducing the state's greenhouse gas emissions to

[1] The CO_2 equivalent emissions are commonly expressed as "million metric tons of carbon dioxide equivalent ($MMTCO_2E$)." The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated Global Warming Potential (GWP).

1990 levels. The Scoping Plan must be updated every five years. CARB is currently in the process of updating the Scoping Plan, and a discussion draft was released in October 2013.

The Scoping Plan identifies 18 emissions-reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related greenhouse gas targets, vehicle efficiency measures, goods movement, solar roofs program, industrial emissions, high speed rail, green building strategy, recycling, sustainable forests, water, and air. Key elements for reducing the state's greenhouse gas emissions to 1990 levels by 2020 include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards;
- Achieving a statewide renewable energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related greenhouse gas emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation.

The City's *General Plan 2030* includes goals, policies, and actions on climate change, including reducing community-wide greenhouse gas emissions 30 percent by 2020, reducing greenhouse gas emissions 80 percent by 2050 (compared to 1990 levels), and for all new buildings to be emissions-neutral by 2030. In October 2012, the City adopted a "Climate Action Plan" (CAP) that outlines the actions the City will take over the next 10 years to reduce greenhouse gasses by 30 percent and to implement the policies and actions identified in the *General Plan 2030*. The CAP addresses citywide greenhouse gas reduction strategies. The CAP provides City emissions inventories, identifies an emissions reduction target for the year 2020, and includes measures to reduce energy use, reduce vehicle trips, implement water conservation programs, reduce emissions from waste collection, increase use of solar systems, and develop public partnerships to aide sustainable practices. Measures are outlined for the following sectors: municipal, residential, commercial, and community programs. The CAP includes an implementation chapter that identifies tracking and reporting of the success of the measures, including City staff responsibilities.

4.5.2 RELEVANT PROJECT ELEMENTS

The proposed La Bahia Hotel project consists of demolition of the existing 44-unit La Bahia apartment complex, with the exception of a portion of the existing bell tower building in the southeastern portion of the site, and construction of a 165-room hotel. Hotel amenities include 3,500 square feet of meeting room space, a 150-seat restaurant, 2,500 square feet of retail space, and a 750-square foot day spa.

The project design includes solar panels for pool and spa heating. Some hot water will be recovered from the Variable Refrigerant Flow (VRF) heat pumps of the heating system and provide a reduction of the annual domestic hot water load.

The project plans show provision of 70 bicycle parking spaces. The Applicant has provided a framework for an Alternative Transportation Program for the proposed hotel project that includes membership in the Ecology Action alternative transportation program or other equivalent transportation management program, and the hotel operator will actively encourage carpooling, transit and/or bicycle commuting for hotel employees, including provision of free bus passes and free emergency rides home for employees. The hotel operator shall provide hotel patrons information to encourage alternative methods of transportation to the hotel and beach area, including, but not limited to promoting use of the Beach/Downtown Trolley.

Construction of the proposed project will include demolition of most of the existing La Bahia structures, including courtyards, with the exception of the bell tower and southeastern portion of the existing building. Demolition would result in removal of approximately 2,750 tons of material and is estimated to be completed in approximately six weeks. Grading activities would result in excavation of 22,250 cubic yards of soil, all of which would be exported offsite. Grading is estimated to take approximately three weeks.

4.5.3 IMPACTS AND MITIGATION MEASURES

CRITERIA FOR DETERMINING SIGNIFICANCE

In accordance with the California Environmental Quality Act (CEQA); State CEQA Guidelines (including Appendix G); City of Santa Cruz plans, policies, and/or guidelines; and agency and professional standards, a project impact would be considered significant if the project would:

5a Conflict with or obstruct implementation of the air quality management plan;

5b Violate any air quality standards or contribute substantially to an existing or projected air quality violation;

5c Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;

5d Expose sensitive receptors (i.e., residents, schools, hospitals) to substantial pollutant concentrations, i.e. those that exceed the MBUAPCD standards identified above and/or toxic air contaminants that exceed health exposure rates;

5e Create objectionable odors in substantial concentrations, affecting a substantial number of people, which could result in injury, nuisance, or annoyance to a considerable number of persons, or would endanger the comfort, health, or safety of the public;

5f Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

5g Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

IMPACT ANALYSIS

As described in the Initial Study (see Appendix A), the project would not expose sensitive receptors to substantial pollutant concentrations (5d), or result in creation of objectionable odors (5e), or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions (5g). The following impact analyses address criteria pollutant emissions and potential violation of an air quality standard (5b-c) and greenhouse gas emissions (1f).

The MBUAPCD was contacted as part of the preparation of this EIR to discuss whether the proposed project would conflict with or obstruct implementation of the adopted AQMP. Discussions with Air District staff indicated that the project would not conflict with the AQMP if project emissions did not exceed the project-level emissions thresholds established in the MBUAPCD's CEQA Guidelines. As discussed below under Impact 4.5-1, the proposed project would not result in construction or operational air emissions that exceed the District's adopted thresholds, and thus, the project would not conflict with or obstruct implementation of the adopted AQMP (5a), and no further discussion is required.

Criteria Pollutant Emissions

Impact 4.5-1 Emissions of Criteria Pollutants
Project construction and operations will result in emissions of criteria pollutants, but would not exceed adopted thresholds of significance. Therefore, this is a *less-than-significant* impact.

Project construction and operational emissions were calculated as part of the emissions assessment prepared for this EIR that is included in Appendix E. The California Emissions Estimator Model, Version 2013.2.2 (CalEEMod) was used. CalEEMod results for ROG (reactive organic gases) were assumed to be VOC, as these terms can be used interchangeably.

CONSTRUCTION EMISSIONS

Demolition, excavation, and construction could result in generation of dust and PM_{10} emissions. According to MBUAPCD's "CEQA Air Quality Guidelines" (as updated in June 2008), 8.1 acres could be graded per day with minimal earthmoving, or 2.2 acres per day with grading and excavation, without exceeding the MBUAPCD's PM_{10} threshold of 82 lbs/day. The project site area is approximately 1.5 acres, which would be below the 2.2 acre grading threshold. However, there will be demolition of the existing facility and excavation to potentially densify the soil to provide protection against liquefaction hazards, and to construct a partially underground parking garage. Therefore, emissions modeling was conducted based on an anticipated construction start date in May 2015. A project-specific construction phasing schedule and anticipated construction equipment list for use were provided by the project applicant. Modeling also included truck trips from material export (e.g., soils) and demolition hauling volume estimates. CalEEMod output worksheets and construction assumptions are included in Appendix E.

During grading and construction activities, dust would be generated. Most of the dust would result during grading activities. The amount of dust generated would be highly variable and is dependent on the size of the area disturbed at any given time, amount of activity, soil conditions and meteorological conditions. Typical winds during late spring through summer are from the southwest. Therefore, maximum daily emissions were computed. CalEEMod modeling results indicated that construction of the project could generate up to 10.6 pounds per day of PM_{10} emissions during the first year of construction and grading activities, which would not exceed the MBUAPCD threshold of 82 pounds per day. This impact would be considered less than significant.

Construction exhaust emissions of ozone precursors VOC and NO_X would be generated by both onsite activities, including diesel equipment such as dozers, tractors, graders, and pavers, and offsite activities due to materials hauling, and worker and vendor trips. However, based on MBUAPCD CEQA Guidelines, exhaust emissions from these typical construction activities would not result in a significant impact because their emissions are already accounted for in the emissions inventories of the state- and federally-required air plans. They would not have a significant impact on the attainment and maintenance of the ozone AAQS.

Therefore, construction-related emissions of criteria pollutants would be considered a less-than-significant impact, as the MBUAPCD's adopted significance thresholds will not be exceeded.

OPERATIONAL EMISSIONS

Once construction has been completed, the proposed hotel project will not result in stationary source emissions. Operational emissions would be associated with indirect mobile emissions generated by project traffic. The CalEEMod model was utilized, which included the project trip generation rates. Emissions associated with vehicle travel depend on the year of analysis. The earlier the vehicle model year, the higher the emission rates, as CalEEMod uses the California Air Resources Board's EMFAC2011 motor vehicle emissions model. This computer model assumes reduced emission rates as newer vehicles with lower emission rates replace older, more polluting vehicles through attrition of the overall vehicle fleet. The earliest full year the project could possibly be operational would be 2017. Full buildout occurring later than 2017 would result in lower emissions. A separate model for year 2013 also was run for the existing apartment uses.

Table 4.5-2 summarizes the results of the emissions modeling. As shown, daily emissions associated with project operation would not exceed the MBUAPCD significance thresholds. Therefore, emissions of criteria pollutants associated with operation of the proposed hotel would result in a less-than-significant impact.

Table 4.5-2: Daily Air Pollutant Emissions from Operation of the Project (pounds/day)

Scenario	VOC	NO_X	CO	PM_{10}	SO_2
Proposed Project 2017	10.5	10.1	46.7	5.2	<0.1
Existing Apartments 2013	18.9	4.3	43.3	4.5	<0.1
Project Net Emissions	-8.4	5.8	3.4	0.7	<0.1
Daily Emission Thresholds	137	137	550	82	150
Exceed Threshold?	No	No	No	No	No

SOURCE: Illingworth & Rodkin, Inc., November 2013.

As discussed above, the project emissions would be below the significance thresholds adopted by MBUAPCD for evaluating impacts to ozone and particulate matter. Therefore, the project would not contribute substantially to existing or projected violations of those standards. Carbon monoxide emissions from traffic generated by the project 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. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below state and federal standards) for years, reflecting improvements in tailpipe emissions controls. As a result, the region has been designated as attainment/unclassified for the standard. There is an ambient air quality monitoring station in Santa Cruz that measures carbon monoxide concentrations. The highest measured level over any eight-hour averaging period during the last three years is less than 1.0 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm.

The proposed project would generate traffic that could affect these levels. However, consultation with MBUAPCD indicated that there are no roadway segments or intersections within the basin that have traffic volumes that would approach levels under which CO emissions would exceed air quality standards, and no further emissions modeling for CO was deemed necessary (A. Clymo, MBUPCD, personal communication, October 2013). Therefore, the project does not have the potential to cause a CO violation at affected intersections to which the project contributes traffic.

Furthermore, according to the MBUAPCD CEQA Guidelines, projects that are consistent with the "Air Quality Management Plan" (AQMP) would not result in cumulative impacts, as regional emissions have been factored into the Plan. The MBUAPCD prepares air quality plans, which address attainment of state and federal emission standards, and which incorporate growth forecasts developed by AMBAG. As indicated above, the proposed project would not conflict with the AQMP, which takes into account cumulative development within the City, and thus, cumulative emissions have been accounted for in the Plan.

Therefore, operational-related emissions of criteria pollutants would be considered a less-than-significant impact, as the MBUAPCD's adopted significance thresholds will not be exceeded.

Mitigation Measures

No mitigation measures are required, as a significant impact has not been identified. Although mitigation measures are not warranted, implementation of dust suppression measures during construction, as recommended in the MBUAPCD's "CEQA Guidelines" and in the certified Beach and South of Laurel Comprehensive Area Plan EIR is recommended as a condition of approval to help prevent potential nuisances to nearby receptors due to fugitive dust.

> Recommended Condition of Approval: Implement dust control measures during construction, including but not limited to:
> - Water all active construction areas at least twice daily;
> - Prohibit all grading activities during periods of high wind (i.e., over 15 mph);
> - Cover all trucks hauling dirt, sand, or loose materials;

- Plant vegetative ground cover in disturbed areas as soon as possible after construction and grading;
- Cover inactive storage piles;
- Install wheel washers at the entrance to the construction site for all exiting trucks;
- Sweep streets if visible soil material is carried out from the construction site; and
- Post a publicly visible sign which 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 of the MBUAPCD shall be visible.

Greenhouse Gas Emissions

Impact 4.5-2 Greenhouse Gas (GHG) Emissions
Project construction and operations will result in GHG emissions, which are not considered significant. Therefore, this is a *less-than-significant* impact.

A greenhouse gas emissions analysis was prepared as part of this EIR by Illingworth & Rodkin, which used the CalEEMod model (see Appendix E). The analysis assumed that construction-related emissions would occur in 2015 and 2016. Under this scenario, construction of the project would emit 278 MT of CO_2e (in 2015) per year.

Once construction has been completed, the proposed hotel project will not result in stationary source emissions. Operational emissions would be associated with indirect mobile emissions generated by project traffic. As indicated above, project trip generation rates were incorporated into the CalEEMod model. It should be noted that the GHG emissions threshold is based on an annual emissions level. Inputs to the CalEEMod model are based on daily inputs.

Table 4.5-3 presents the results of the CalEEMod model analysis in terms of annual metric tons of equivalent CO_2 emissions (MT of CO_2e/year). As the table shows, operation of the project would result in net annual GHG emissions of 1,092 MT CO_2e/year. This represents a potential net increase in emissions after considering the current GHG emissions from existing onsite apartments. Additionally, the assessment conservatively assumed that these conditions and associated emissions would occur 365 days per year. The hotel occupancy rate was not considered, and therefore the calculated emissions are conservatively high.

The MBUAPCD does not yet have an adopted threshold for GHG emissions. However, the District has been reviewing the matter, and in February 2013 a staff report to the District Board indicated that the staff's current recommendation is to further review a GHG threshold of 2,000 MT CO_2e per year for land-use projects or compliance with an adopted GHG Reduction Plan/Climate Action Plan (Monterey Bay Unified Air Pollution Control District, February 2013). This recommendation was made after considering AB 32 goals and scoping plan measures that would reduce regional emissions and MBUAPCD staff review of thresholds adopted or considered in other air districts throughout the state. A threshold was considered based on projects that would contribute 75-90% of future GHG emissions was considered. Therefore, for the purposes of this analysis, projects that have emissions below 2,000 MT of CO_2e per year are considered to have less than significant GHG emissions based on current MBUPACD staff

recommendations, although it is acknowledged that the District Board has not yet taken action on adopting a GHG emissions threshold. MBUAPCD staff has recommended that adoption of the thresholds occur after the ARB Scoping Plan update is released and reviewed by District staff.

TABLE 4.5-3 Project GHG Emissions (MT CO_2e/year)

Source Category	2013 Existing Apartments	2017 Proposed Project
Area	69	<1
Energy Consumption	51	575
Mobile	384	987
Solid Waste Generation	9	41
Water Usage	8	9
Total	521	1,613
Net Project Emissions		**1,092**

SOURCE: Illingworth & Rodkin, Inc., November 2013

Therefore, because the estimated net project GHG emissions of 1,092 MT CO_2e/year would not exceed the current recommendation of 2,000 MT of CO_2e/year, the impact is considered less than significant. Additionally, the City's *General Plan 2030* EIR estimated greenhouse gas emissions that could result in 2030 from potential development and buildout accommodated by the plan that included 3,350 residential dwelling units and approximately 3,140,000 additional square feet of new commercial, office, and industrial uses. The General Plan EIR analysis determined that the GHG emissions levels associated with potential buildout that would be accommodated by the General Plan would not be considered substantial compared to long-term forecasts and state and regional targets, and would be less than forecast statewide per capita emission rates. The proposed project was factored into the General Plan buildout and EIR analyses based on a 125-room hotel. Although the current project proposes 165 rooms, which results in 40 additional rooms that would not have been considered in the buildout analysis, the additional rooms would be within the overall total commercial square footage that was assumed in the General Plan analysis. The findings support the conclusion that project-level GHG emissions would not be substantial.

Subsequent to the adoption of the *General Plan 2030*, the City adopted a "Climate Action Plan." There are no specific measures that would apply to the proposed hotel project, although some of the CAP's reduction measures are aimed at the commercial sector. The proposed project will be subject to applicable provisions of the City's Green Building Code requirements and water conservation features, including drought-resistant landscaping. Additionally, the project design includes solar panels for pool and spa heating. Some hot water will be recovered from the Variable Refrigerant Flow (VRF) heat pumps of the heating system and provide a reduction of the annual domestic hot water load. These measures are consistent with those recommended for commercial and other uses in the CAP related to building and energy efficiency and water conservation..

Based on the above considerations, the proposed project would not result in significant emissions of greenhouse gas emissions, and the impact is less than significant.

Mitigation Measures

None are required, as a significant impact has not been identified.