

4.2 AIR QUALITY

4.2.1 Existing Setting

The project site is located on the coastal plain in the city of Goleta. The climate in and around Goleta, as in most of Southern California, is dominated by the strength and position of the semi-permanent high-pressure center over the Pacific Ocean near Hawaii. It creates cool summers, mild winters, and infrequent rainfall. It drives the cool daytime sea breeze, and it maintains a comfortable humidity range and ample sunshine after the frequent morning clouds dissipate. However, the same atmospheric processes that create the desirable living climate combine to restrict the ability of the atmosphere to disperse the air pollution generated by the population attracted in part by the desirable climate.

Temperatures in the Goleta area average 59°F annually. Daily and seasonal oscillations of mean temperature are small because of the moderating effects of the nearby oceanic thermal reservoir. In contrast to the steady temperature regime, rainfall is highly variable. Measurable precipitation occurs mainly from early November to mid-April, but total amounts are generally small. Goleta averages 18 inches of rain annually, with January as the wettest month. Winds in the project vicinity display several characteristic regimes. During the day, especially in summer, winds are from the south in the morning and from the west in the afternoon. Daytime wind speeds are 5 to 10 miles per hour (mph) on average. At night, especially in winter, the land becomes cooler than the ocean, and an offshore wind of 3 to 5 mph develops. Early morning winds are briefly from the southeast parallel to the coastline before the daytime onshore flow becomes well established again. One other important wind regime occurs when high pressure builds over the western United States and creates hot, dry, and gusty Santa Ana winds from the north and northeast across Santa Barbara County.

The net effect of the wind pattern on air pollution is that locally generated emissions are carried offshore at night and toward inland Santa Barbara County by day. Dispersion of pollutants is restricted when the wind velocity for nighttime breezes is low. The lack of development in inland Santa Barbara County, however, causes few air quality problems during nocturnal air stagnation. Daytime ventilation is usually much more vigorous. Both summer and winter air quality in the project area is generally very good.

In addition to winds that control the rate and direction of pollution dispersal, Southern California experiences strong temperature inversions that limit the vertical depth through which pollution can be mixed. In summer, coastal areas are characterized by a sharp discontinuity between the cool marine air at the surface and the warm, sinking air aloft within the high pressure cell over the ocean to the west. This marine/subsidence inversion allows for good local mixing, but acts like a giant lid over the basin. Air starting onshore at the beach is relatively clean, but becomes progressively more polluted as sources continue to add pollution from below without any dilution from above. Because of Goleta's location relative to the ocean, the incoming marine air during warm season onshore flow contains little air pollution. Local air quality is not substantially affected by the regional subsidence inversions.

A second inversion type forms on clear winter nights when cold air off the mountains sinks to the surface while the air aloft remains warm. This process forms radiation inversions. These inversions, in conjunction with calm winds, trap pollutants such as automobile exhaust near their sources. During the long nocturnal drainage flow from land to sea, the exhaust pollutants continually accumulate within the shallow, cool layer of air near the ground. Therefore, most

areas of Santa Barbara County may experience stagnation of carbon monoxide and nitrogen oxides because of this winter radiation inversion condition. However, Santa Barbara County does not have enough mobile sources (which continue to become cleaner each year) to create critical conditions, and limited nocturnal mixing effects have not created any localized air pollution “hot spots” at any air monitoring location in over 15 years.

Both types of inversions occur throughout the year to some extent, but the marine inversions are very dominant during the day in summer, and radiation inversions are much stronger on winter nights when nights are long and air is cool. The governing role of these inversions in atmospheric dispersion leads to a substantially different air quality environment in summer than in winter.

4.2.1.1 Sensitive Receptors

Sensitive receptors are generally defined as locations where pollutant-sensitive members of the population may reside or where the presence of air pollutant emissions could adversely affect use of the land. Sensitive members of the population include those who may be more negatively affected by poor air quality than other members of the population, such as children, the elderly, or the infirm. In general, residential areas, hospitals, daycare facilities, elder-care facilities, elementary schools, and parks typically contain a high concentration of these sensitive population groups. Within the vicinity of the project area, a residential subdivision is located approximately 1,500 feet to the west. In addition, U.S. Highway 101 is located approximately 1,750 feet to the north.

4.2.1.2 Existing Air Quality

The project is in the South Central Coast Air Basin (SCCAB). The SCCAB encompasses San Luis Obispo, Santa Barbara, and Ventura Counties. The project site is in Santa Barbara County. The California Air Resources Board (CARB) and the Santa Barbara County Air Pollution Control District (SBCAPCD) operate ambient air monitoring stations that measure pollutant concentrations throughout Santa Barbara County and the SCCAB. The nearest monitoring stations to the project site are: the Goleta monitoring station, at 380 North Fairview Avenue, which monitors ozone (O₃), carbon monoxide (CO), and nitrogen dioxide (NO₂); and the Santa Barbara station, at 700 East Canon Perdido, which measures inhalable particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}). Table 4.2-1 summarizes the last 5 years of published data from these monitoring stations. The following conclusions can be drawn from these data:

1. Photochemical smog (ozone) levels infrequently exceed standards. The state 8-hour standard for ozone has been exceeded twice in 5 years.
2. CO measurements in Goleta have been declining, as federal and state CO standards have not been exceeded in the last 5 years. Maximum 1-hour or 8-hour CO levels at the closest air monitoring station are currently less than 10% of their most stringent standards because of continued vehicular improvements. This data suggests that baseline CO levels in the project area are generally healthful and can accommodate a reasonable level of additional traffic emissions before any adverse local air quality effects would be expected.
3. PM₁₀ levels occasionally exceed the state standard, but the federal particulate standard is very rarely exceeded. The state PM₁₀ standard is exceeded on less than 6% of all days, while the more lenient federal standards have not been exceeded once in the past 3 years for which monitoring data is available (2010 to 2012).

4. A substantial fraction of PM₁₀ is composed of ultra-small diameter particulates capable of being inhaled into deep lung tissue (PM_{2.5}). Even with the revision of the national 24-hour PM_{2.5} standard from 65 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 35 $\mu\text{g}/\text{m}^3$, the frequency of days exceeding the standard is minimal. PM_{2.5} measurements have not exceeded federal standards since 2004.
5. More localized pollutants, such as nitrogen oxides (NO_x) and lead, are likely very low near the project site because background levels never exceed allowable levels based on SBCAPCD's monitoring of measured pollutants according to federal standards. There is substantial excess dispersive capacity to accommodate localized vehicular air pollutants such as NO_x without any threat of violating the applicable standards.

**TABLE 4.2-1
SUMMARY OF AIR QUALITY DATA AT GOLETA MONITORING STATION**

Pollutant Standards	2008	2009	2010	2011	2012
Ozone (O₃)					
Maximum 1-hr concentration (ppm)	0.081	0.090	0.072	0.091	0.065
Maximum 8-hr concentration (ppm)	0.065	0.077	0.065	0.075	0.056
Number of days standard exceeded:					
CAAQS 1-hour (>0.09 ppm)	0	0	0	0	0
NAAQS 8-hour (>0.075 ppm)	0	1	0	0	0
CAAQS 8-hour (>0.070 ppm)	0	1	0	1	0
Carbon Monoxide (CO)					
Maximum 8-hr concentration (ppm)	0.60	0.60	0.56	0.56	0.65
Maximum 1-hr concentration (ppm)	1.4	1.6	2.0	2.0	1.6
Number of days standard exceeded:					
NAAQS 8-hour (>9 ppm)	0	0	0	0	0
CAAQS 8-hour (>9.0 ppm)	0	0	0	0	0
NAAQS 1-hour (>35 ppm)	0	0	0	0	0
CAAQS 1-hour (>20 ppm)	0	0	0	0	0
Nitrogen Dioxide (NO₂)					
State maximum 1-hr. concentration (ppm)	0.053	0.046	0.044	0.052	0.041
State 2nd-highest 1-hr. concentration (ppm)	0.041	0.042	0.042	0.038	0.034
Annual average concentration (ppm)	0.008	0.007	0.006	0.006	-
Number of days standard exceeded:					
CAAQS 1-hour (0.18 ppm)	0	0	0	0	0
Suspended Particulates (PM₁₀)					
State maximum 24-hr. concentration ($\mu\text{g}/\text{m}^3$)	-	-	45.2	70.0	48.0
State 2nd highest 24-hr. concentration ($\mu\text{g}/\text{m}^3$)	-	-	40.4	57.3	44.3
National maximum 24-hr. concentration ($\mu\text{g}/\text{m}^3$)	-	-	44.0	67.9	46.5
National 2nd highest 24-hr. concentration ($\mu\text{g}/\text{m}^3$)	-	-	40.5	55.2	44.3

Pollutant Standards	2008	2009	2010	2011	2012
State annual average concentration ($\mu\text{g}/\text{m}^3$)	-	-	-	-	18.8
National annual average concentration ($\mu\text{g}/\text{m}^3$)	-	-	16.9	18.4	18.4
Number of days standard exceeded:					
CAAQS 24-hour ($>50 \mu\text{g}/\text{m}^3$)	-	-	-	-	0.0
NAAQS 24-hour ($>150 \mu\text{g}/\text{m}^3$)	-	-	-	0.0	0.0
Suspended Particulates (PM2.5)					
State maximum 24-hr. concentration ($\mu\text{g}/\text{m}^3$)	-	-	23.6	18.4	29.0
State 2nd highest 24-hr. concentration ($\mu\text{g}/\text{m}^3$)	-	-	22.7	17.3	23.7
National maximum 24-hr. concentration ($\mu\text{g}/\text{m}^3$)	-	-	-	-	-
National 2nd highest 24-hr. concentration ($\mu\text{g}/\text{m}^3$)	-	-	-	-	-
State annual average concentration ($\mu\text{g}/\text{m}^3$)	-	-	8.2	8.4	9.0
National annual average concentration ($\mu\text{g}/\text{m}^3$)	-	-	-	-	-
Number of days standard exceeded:					
NAAQS 24-hour ($>35 \mu\text{g}/\text{m}^3$)	-	-	-	-	-
Notes: NAAQS = National Ambient Air Quality Standards CAAQS = California Ambient Air Quality Standards ppm = parts per million $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter Sources: California Air Resources Board 2013b.					

4.2.2 Regulatory Framework

4.2.2.1 Ambient Air Quality Standards

Federal and State ambient air quality standards (AAQS) are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise (sensitive receptors). Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research has shown, however, that chronic exposure to O_3 (the primary ingredient in photochemical smog) may lead to adverse respiratory health even at concentrations close to the ambient standard.

National AAQS were established in 1971 for six pollution constituents with states retaining the option to add other pollutants, require more stringent compliance, or include different exposure periods. The initial attainment deadline of 1977 was extended several times in air quality problem areas like Southern California. Because California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between State and federal clean air standards. Those standards currently in effect in California are shown in Table 4.2-2. Sources and health effects of criteria air pollutants are summarized in Table 4.2-3.

The federal Clean Air Act Amendments of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of currently known health effects. EPA was charged with modifying existing standards or promulgating new ones, where appropriate. EPA subsequently developed standards for chronic O₃ exposure (8+ hours per day) and for PM_{2.5}. New national AAQS were adopted in 1997 for these pollutants.

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted CARB to recommend adoption of the State PM_{2.5} standard that is more stringent than the federal standard. This standard was adopted in 2002. The State PM_{2.5} standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard, but only requires continued progress towards attainment.

Similarly, CARB extensively evaluated health effects of O₃ exposure. A new State standard for an 8-hour O₃ exposure was adopted in 2005, which aligned with the federal 8-hour standard. The California 8-hour O₃ standard of 0.07 parts per million (ppm) is more stringent than the federal 8-hour standard of 0.075 ppm. The State standard, however, does not have a specific attainment deadline. California air quality jurisdictions are required to make steady progress towards attaining State standards, but there are no hard deadlines or any consequences associated with nonattainment. During the same re-evaluation process, CARB adopted an annual State standard for NO₂ that is more stringent than the corresponding federal standard, and strengthened the State 1-hour NO₂ standard.

**TABLE 4.2-2
AMBIENT AIR QUALITY STANDARDS**

Criteria Pollutant	Average Time	California Standards	National Standards ^a		Attainment Status of Santa Barbara County ^b	
			Primary	Secondary	State	National
Ozone	1-hour	0.09 ppm	None	None	--	-- ^c
	8-hour	0.070 ppm	0.075 ppm	0.075 ppm	Nonattainment ^d	Unclassified/ Attainment ^d
Particulate Matter (PM ₁₀)	24-hour	50 µg/m ³	150 µg/m ³	150 µg/m ³	Nonattainment	Attainment
	Annual mean	20 µg/m ³	None	None	Nonattainment	Attainment
Fine Particulate Matter (PM _{2.5})	24-hour	None	35 µg/m ³	35 µg/m ³	--	Unclassified/ Attainment
	Annual mean	12 µg/m ³	15.0 µg/m ³	15.0 µg/m ³	Unclassified ^d	Unclassified/ Attainment
Carbon Monoxide	8-hour	9.0 ppm	9 ppm	None	Attainment ^d	Maintenance ^d
	1-hour	20 ppm	35 ppm	None		
Nitrogen Dioxide	Annual mean	0.030 ppm	0.053 ppm	0.053 ppm	Attainment	Unclassified/ Attainment
	1-hour	0.18 ppm	0.100 ppm	None	Attainment	Unclassified/ Attainment
Sulfur Dioxide ^e	Annual mean	None	0.030 ppm	None	--	--
	24-hour	0.04 ppm	0.014 ppm	None	Attainment	--
	3-hour	None	None	0.5 ppm	--	--

Criteria Pollutant	Average Time	California Standards	National Standards ^a		Attainment Status of Santa Barbara County ^b	
			Primary	Secondary	State	National
	1-hour	0.25 ppm	0.075 ppm	None	Attainment	--
Lead	30-day Average	1.5 µg/m ³	None	None	Attainment	--
	Calendar quarter	None	1.5 µg/m ³	1.5 µg/m ³	--	Attainment
	3-month average	None	0.15 µg/m ³	0.15 µg/m ³	--	Unclassified
Sulfates	24-hour	25 µg/m ³	None	None	Attainment	--
Hydrogen Sulfide	1-hour	0.03 ppm	None	None	Attainment	--
Vinyl Chloride	24-hour	0.01 ppm	None	None	--	--

Notes:

ppm= parts per million

µg/m³ = micrograms per cubic meter

^a National standards are divided into primary and secondary standards. Primary standards are intended to protect public health, whereas secondary standards are intended to protect public welfare and the environment.

^b Local monitoring data are used to designate areas as nonattainment, maintenance, attainment, or unclassified for the NAAQS and CAAQS. The four designations are further defined as:

Nonattainment—assigned to areas where monitored pollutant concentrations consistently violate the standard in question.

Maintenance—assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard.

Attainment—assigned to areas where pollutant concentrations meet the standard in question over a designated period of time.

Unclassified—assigned to areas where data are insufficient to determine whether a pollutant is violating the standard in question.

^c The federal 1-hour standard of 12 parts per hundred million was in effect from 1979 through June 15, 2005. The revoked standard is referenced because it was employed for such a long period and is a benchmark for State Implementation Plans.

^d Standard applies to a portion of the County.

^e The annual and 24-hour NAAQS for SO₂ only apply for one year after designation of the new 1-hour standard to those areas that were previously nonattainment for 24-hour and annual NAAQS.

Source: California Air Resources Board 2013a.

**TABLE 4.2-3
SOURCE AND EFFECTS OF AIR POLLUTANTS**

Pollutants	Sources	Primary Effects
Ozone (O ₃)	Formed when reactive organic gases (ROG) and nitrogen oxides react in the presence of sunlight. ROG sources include any source that burns fuels, (e.g., gasoline, natural gas, wood, oil) solvents, petroleum processing and storage and pesticides.	Breathing difficulties, lung tissue damage, damage to rubber and some plastics
Respirable Particulate Matter (PM ₁₀)	Road dust, windblown dust (Agriculture) and construction (Fireplaces) Also formed from other pollutants (acid rain, NO _x , SO _x , organics). Incomplete combustion of any fuel.	Increased respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling
Fine Particulate Matter (PM _{2.5})	Fuel combustion in motor vehicles, equipment and industrial sources, and residential and agricultural burning. Also formed from reaction of other pollutants (acid rain, NO _x , SO _x , organics).	Increased respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling
Carbon Monoxide (CO)	Any source that burns fuel such as automobiles, trucks, heavy construction equipment, farming equipment and residential heating.	Chest pain in heart patients, headaches, reduced mental alertness
Nitrogen Dioxide (NO ₂)	See carbon monoxide	Lung irritation and damage. Reacts in the atmosphere to form ozone and acid rain
Lead (Pb)	Metal Smelters, Resource Recovery, Leaded Gasoline, Deterioration of Lead Paint	Learning disabilities, brain and kidney damage
Sulfur Dioxide (SO ₂)	Coal or Oil Burning Power Plants and Industries, Refineries, Diesel Engines	Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain.
Visibility Reducing Particles	See PM _{2.5}	Reduces visibility (e.g., obscures mountains and other scenery), reduced airport safety, lower real estate value, discourages tourism.
Sulfates	Produced by the reaction in the air of SO ₂ (see SO ₂ sources), a component of acid rain.	Breathing difficulties, aggravates asthma, reduced visibility
Hydrogen Sulfide	Geothermal Power Plants, Petroleum Production and Refining, Sewer Gas	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations).
Source: California Air Resources Board 2009.		

As part of EPA's 2003 consent decree¹ on clean air standards, a further review of airborne particulate matter (PM) and human health was initiated. A substantial modification of federal clean air standards for PM was promulgated in 2006. Standards for PM_{2.5} were strengthened, a new class of PM in the 2.5 to 10 micron size was created, some PM₁₀ standards were revoked, and a distinction between rural and urban air quality was adopted.

¹ See *American Lung Assoc. v. Whitman* (D.D.C. 2003) D.D.C., Case No. 03-778.

In response to continuing evidence that O₃ exposure at levels just meeting federal clean air standards is demonstrably unhealthful, EPA has proposed a further strengthening of the 8-hour standard.

A new federal 1-hour standard for NO₂ has also recently been adopted. This standard is more stringent than the existing State standard. Based on air quality monitoring data in the SCCAB, the basin will likely be designated as “nonattainment” for the national 1-hour standard. That designation will require the inclusion of NO₂ in the basin air quality management plan.

4.2.2.2 Air Quality Planning

State and federal laws require that jurisdictions that do not meet clean air standards develop plans and programs that will bring those areas into compliance. These plans typically contain emission reduction measures and attainment schedules to meet specified deadlines. If and when attainment is reached, the attainment plan becomes a “maintenance plan.”

In 2001, an attainment plan was developed that was designed to meet both federal and state planning requirements. The federal attainment plan was combined with those from other statewide nonattainment areas to become the State Implementation Plan (SIP). The 2001 Clean Air Plan (CAP) was adopted as the Santa Barbara portion of the SIP, designed to meet and maintain federal clean air standards.

The 2004 CAP demonstrates how the county will make progress towards meeting the State 1-hour ozone standard, while the 2007 CAP pertains to provisions of the federal Clean Air Act that apply to the county’s current designation as an attainment area for the federal 8-hour O₃ standard. The adopted 2010 CAP incorporates updated data and is currently the most recent CAP for ultimately meeting the State O₃ standard.

As of 2008, Santa Barbara County is designated as a federal O₃ attainment area for the 8-hour O₃ standard (the 1-hour federal standard was revoked for Santa Barbara County). A new California 8-hour O₃ standard was implemented in May 2006. This standard has been exceeded by air quality conditions in the county, and the State standard for PM₁₀ continues to be exceeded. Santa Barbara County is therefore a nonattainment area for the State standards for O₃ and PM₁₀. The county is in attainment for the federal PM_{2.5} standard and unclassified for the State PM_{2.5} standard (based on monitored data from 2006 to 2008), and is designated “attainment” or “unclassified” for other State standards and for all federal clean air standards.

4.2.2.3 Santa Barbara County Air Pollution Control District Rules and Regulations

SBCAPCD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and State air quality laws. The proposed project may be subject to the following SBCAPCD rules (as well as others):

- Rule 302—Visible Emissions
- Rule 303—Nuisance
- Rule 305—Particulate Matter
- Rule 323—Architectural Coatings
- Rule 329—Cutback and Emulsified Asphalt Paving Materials
- Rule 345—Control of Fugitive Dust from Construction and Demolition Activities

- Rule 352—Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters
- Rule 360—Emissions of Oxides of Nitrogen From Large Water Heaters and Small Boilers

Stationary construction equipment, such as emergency generators if proposed in the future, may also trigger an individual permit from the SBCAPCD.

4.2.3 Project Impacts and Mitigation

4.2.3.1 Thresholds of Significance

Based on both the City's Initial Study Checklist (CEQA Guidelines, Appendix G; Environmental Checklist Form) and the City's *Environmental Thresholds and Guidelines Manual* (Thresholds Manual), a significant impact on air quality could occur if the project would:

- a. Conflict with or obstruct implementation of the applicable air quality plan.
- b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for O₃ precursors).
- d. Expose sensitive receptors² to substantial pollutant concentrations.
- e. Create objectionable odors affecting a substantial number of people.
- f. Interfere with progress toward the attainment of the O₃ standard by releasing emissions that equal or exceed the established long-term quantitative thresholds for NO_x and reactive organic compounds (ROC; same as reactive organic gases [ROG]). Thresholds are 25 pounds/day of either NO_x or ROC.
- g. Equal or exceed the State or federal ambient air quality standards for any criteria pollutant (as determined by modeling).
- h. Result in toxic or hazardous air pollutants in amounts that may increase cancer risks for the affected population.

Items a through e are from the Initial Study Checklist, and Items f through h are from the City's *Environmental Thresholds and Guidelines Manual* (Thresholds Manual).

Santa Barbara County Air Pollution Control District Thresholds

According to the CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make significance determinations for items a through e above. The following criteria pollutant significance thresholds have been established by SBCAPCD (SBCAPCD 2011). Although the City has not yet adopted any new threshold criteria, these SBCAPCD thresholds are considered appropriate for use as a guideline for the impact analysis.

² For purposes of evaluating air quality impacts, the City's Thresholds Manual, Air Quality section (page 27) identifies examples of sensitive receptors as children, elderly, or acutely ill.

Operational Impacts Thresholds

The project would result in a significant impact, either individually or cumulatively, if it would:

1. Emit 240 pounds/day or more of ROG (same as ROC) from all sources (both stationary and mobile).
2. Emit 240 pounds/day or more of NO_x from all sources (both stationary and mobile).
3. Emit 25 pounds/day or more of unmitigated ROG from any motor vehicles trips only.
4. Emit 25 pounds/day or more of unmitigated NO_x from any motor vehicle trips only.
5. Emit 80 pounds/day or more of PM10.
6. Cause or contribute to a violation of any California or Ambient Air Quality standard (except O₃).
7. Exceed the SBCAPCD health risk public notification thresholds adopted by the SBCAPCD Board (10 excess cancer cases in a million for cancer risk and a Hazard Index of more than 1.0 for non-cancer risk).
8. Be inconsistent with federal or State air quality plans for Santa Barbara County.

The cumulative contribution of project emissions to regional levels should be compared with existing programs and plans, including the most recent CAP (2010). Due to the County's nonattainment status for O₃ and the regional nature of O₃ as a pollutant, if a project's emissions of either of the O₃ precursors (NO_x or ROC) exceed the operational thresholds, then the project's cumulative impacts are considered significant.

For projects that do not have significant O₃ precursor emissions or localized pollutant impacts, if emissions have been taken into account in the 2010 CAP growth projections (i.e., if growth associated with the project does not exceeds the growth assumptions in the air quality plan), regional cumulative impacts may be considered to be less than significant.

Construction Impacts Thresholds

Quantitative thresholds of significance are not currently in place for short-term emissions. However, short-term impacts such as exhaust emissions from construction equipment and fugitive dust generation during grading must be discussed. SBCAPCD recommends that construction-related NO_x, ROC, PM10, and PM2.5 emissions from diesel- and gasoline-powered equipment, paving, and other activities be quantified. SBCAPCD uses 25 tons per year for NO_x and ROC as a guideline for determining the significance of construction impacts.

Under SBCAPCD Rule 202 D.16, if the combined emissions from all construction equipment used to construct a stationary source that requires an Authority to Construct permit have the potential to exceed 25 tons of any pollutant, except CO, in a 12-month period, the permittee must provide offsets under the provisions of Rule 804 and demonstrate that no ambient air quality standard will be violated. SBCAPCD Rule 345 regulates generation of visible fugitive dust emissions at demolition and construction sites. In addition, implementation of SBCAPCD's required standard dust control measures would result in less-than-significant fugitive dust emissions.

4.2.3.2 Project-Specific Impacts

Impact AQ-1. Consistency with SBCAPCD Clean Air Plan

General growth (such as the project) is not explicitly incorporated into the CAP, which is the County's plan to achieve attainment status of the State O₃ standard. General development is, however, indirectly incorporated into air quality planning through the growth projections and regional transportation plans prepared by the Santa Barbara County Association of Governments. The project site's current land use designation in the City's General Plan/Coastal Land Use Plan (GP/CLUP, 2006) is Agriculture. If the General Plan Amendment (GPA) proposed by Shelby is approved, the land use designation would be changed to Single Family Residential.

A discussion of the effect of the project's increase over the GP/CLUP's growth projections, and thereby its effect on the GP/CLUP's consistency with the CAP, is discussed in Section 4.3 of the Shelby GPA SEIR. This discussion is incorporated herein by reference; in summary, the project is consistent with the most recently adopted CAP, and the project's impacts due to the increase in the GP/CLUP's growth projections are considered less than significant.

Impact AQ-2. Air Quality Impacts

Short-term Construction Impacts

Short-term impacts include those associated with grading and construction of the project. Dust would be generated during grading (23,500 cubic yards of fill and 27,500 cubic yards of cut), implementation of infrastructure, and construction of the new building. Use of heavy equipment/trucks and other construction-related vehicles would result in on- and off-site exhaust emissions. The grading and construction period is estimated to be 12 to 14 months (420 days). The project's emissions resulting from grading and construction activities are summarized in Table 4.2-4, below.

**TABLE 4.2-4
TOTAL SHORT-TERM CONSTRUCTION UNMITIGATED EMISSIONS
(FUGITIVE AND EXHAUST SOURCES, TONS/YEAR)**

	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Project Emissions	2.4	6.3	4.5	0.0059	0.67	0.48
Threshold	25	25	none	none	none	none
Threshold exceeded?	No	No	N/A	N/A	N/A	N/A

Source: CalEEMod v.2013.2.2 computer model (modeling results contained in Appendix B).

The project's construction emissions of ROG and NO_x would not exceed the threshold of 25 tons/year. Neither the City nor the SBCAPCD has adopted any significance thresholds for construction-generated PM₁₀. Therefore, the project's construction emissions are considered less than significant. In addition, implementation of SBCAPCD-required construction dust control measures (Recommended Mitigation Measure MM AQ-2a) would reduce construction-related fugitive dust emissions to less than significant, while SBCAPCD-recommended

construction exhaust control measures (Recommended Mitigation Measures MM AQ-2b and MM AQ-2c) would further reduce construction-related exhaust emissions.

Long-term Operational Impacts

Long-term emissions would be generated from vehicular trips associated with the project. The project is estimated to generate 574 average daily trips per day. Area source emissions would also be generated from the operation of the new building (e.g., heating, air conditioning). The project's operational emissions are summarized in Table 4.2-5, below.

**TABLE 4.2-5
OPERATIONAL UNMITIGATED EMISSIONS**

Source	Emissions (lbs/day)					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Area Sources	3.32	0.03	2.50	0.0001	0.01	0.01
Mobile Sources	0.05	7.55	33.79	0.0435	3.36	0.96
Energy Sources	3.01	0.44	0.19	0.0028	0.04	0.04
Total	6.38	8.02	36.47	0.0464	3.40	1.01
APCD Threshold	25/55 ^a	25/55 ^a	N/A	N/A	80	N/A

Totals may be off slightly due to rounding.
^a Transportation (mobile) sources only/total emissions.
 Source: CalEEMod v.2013.2.2 computer model (modeling results contained in Appendix B).

The project's emissions would not exceed significance threshold levels as indicated in Table 4.2-5 above. Therefore, the project's operational air quality impacts would be considered less than significant.

Impact AQ-3. Objectionable Odors

Construction of new parking areas on site would require application of aggregate concrete (asphalt) that could create objectionable odors. Such odors would be temporary and localized and would be subject to SBCAPCD Rule 329. This rule governs the application of asphalt paving materials and would apply to all project paving activities. Based on this regulation, impacts associated with construction of new parking areas on site are considered less than significant.

Impact AQ-4. Health Risk Assessment Regarding Exposure to Toxic Air Contaminants

SBCAPCD's Thresholds Manual indicates that an evaluation of construction-related health risks is not required for short-term or construction projects. Consequently, construction-related health risks are not evaluated in this analysis and are considered less than significant.

There are no identified stationary toxic sources near the project site. The nearest source, the Ellwood Onshore Facility owned by Venoco, Inc., is located at 7979 Hollister Avenue, 1.6 miles from the project site. Therefore, the risk associated with toxic air contaminants at the project site is considered less than significant.

SBCAPCD has established a policy indicating that sensitive land uses should not be sited within 500 feet of a freeway (Santa Barbara County Air Pollution Control District n.d.). As previously indicated, U.S. Highway 101 is approximately 0.6 miles (3,168 feet) to the south of the project site, well beyond SBCAPCD's recommended buffer distance of 500 feet. Consequently, impacts

associated with exposure of proposed sensitive receptors to toxic air contaminants are considered less than significant.

4.2.4 Cumulative Impacts

The significance thresholds used for this analysis address cumulative air quality impacts. Due to the County's nonattainment status for O₃ and the regional nature of this pollutant, if a project's total emissions of the O₃ precursors, NO_x or ROG, exceed the motor vehicle long-term threshold of 25 pounds/day or total thresholds (combined stationary and mobile source), or the thresholds of 240 pounds/day or more of ROG or NO_x, then the project's cumulative impacts would be considered significant. As shown above, the project's operational would not exceed these SBCAPCD thresholds. Therefore, the project's contribution to cumulative air quality impacts is considered less than significant.

4.2.5 Mitigation Measures

Because impacts to air quality would be less than significant with the project, no mitigation is required. However, these mitigation measures are recommended to comply with SBCAPCD permitting regulations.

Recommended MM AQ-2a. Implement SBCAPCD-Required Construction Dust Control Measures

Dust generated by construction and/or demolition activities must be kept to a minimum.

Plan Requirements and Timing: Consistent with SBCAPCD Rule 345, the following dust control measures must be shown on all building and grading plans, and the permittee must ensure that these measures are implemented by the contractor/builder:

- a. During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency should be required whenever the wind speed exceeds 15 mph. Reclaimed water should be used whenever possible. However, reclaimed water should not be used in or around crops for human consumption.
- b. Minimize the amount of disturbed area and reduce on-site vehicle speeds to 15 mph or less.
- c. If importation, exportation, and stockpiling of fill material is involved, soil stockpiled for more than 2 days must be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site must be tarped from the point of origin.
- d. Gravel pads must be installed at all access points to prevent tracking of mud onto public roads.
- e. After clearing, grading, earth moving, or excavation is completed, treat the disturbed area by watering or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur.
- f. Monitor the dust control program and order increased watering, as necessary, to prevent transport of dust off site. The contractor or builder must designate a person or persons to perform these tasks. Their duties will include holiday and weekend periods when work may not be in progress. The names and telephone numbers of such persons must be provided to

SBCAPCD before land use clearance for map recordation and before land use clearance for finish grading of the structure.

- g. Before land use clearance for map recordation, the permittee must include, as a note on a separate informational sheet to be recorded with the map, these dust control requirements. All requirements must be shown on grading and building plans.

Monitoring: The Planning and Environmental Review Director, or designee, must verify inclusion of these measures in the project's building and grading plans and must periodically site inspect to ensure compliance. SBCAPCD inspectors will respond to complaints.

Recommended MM AQ-2b. Implement SBCAPCD-Recommended Construction Exhaust Control Measures

Grading and construction contracts must specify that contractors must adhere to requirements that reduce emissions of O₃ precursors and particulate emissions from diesel exhaust.

Plan Requirements and Timing: The following must apply:

- a. Diesel construction equipment meeting the CARB Tier 1 emission standards for off-road heavy-duty diesel engines will be used. Equipment meeting CARB Tier 2 or higher emission standards must be used to the maximum extent feasible.
- b. Diesel-powered equipment must be replaced by electric equipment whenever feasible.
- c. If feasible, diesel construction equipment must be equipped with selective catalytic reduction systems, diesel oxidation catalysts, and diesel particulate filters as certified and/or verified by EPA or the State.
- d. Catalytic converters must be installed on gasoline-powered equipment, if feasible.
- e. All construction equipment must be maintained in tune per the manufacturer's specifications.
- f. The engine size of construction equipment must be the minimum practical size.
- g. The number of construction equipment operating simultaneously must be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.
- h. Construction worker trips must be minimized by requiring carpooling and by providing for lunch on site.

All requirements must be noted on all clearance plans and will be reviewed and approved by the Planning and Environmental Review Director, or designee, prior to land use permit issuance. Requirements must be adhered to throughout all grading and construction periods.

Monitoring: The Planning and Environmental Review Director, or designee, must verify inclusion of these measures in the project's building and grading plans and must periodically site inspect to ensure compliance. SBCAPCD inspectors will respond to complaints.

Recommended MM AQ-2c. Limit Diesel Emissions

Diesel fuel emissions must be limited.

Plan Requirements and Timing: The following limitations on diesel-fueled vehicles in excess of 10,000 pounds must apply during all construction and subsequent operational activities:

- a. Diesel-fueled vehicles in excess of 10,000 pounds must not idle in one location for more than 5 minutes at a time.
- b. Diesel-fueled vehicles in excess of 10,000 pounds must not use diesel-fueled auxiliary power units for more than 5 minutes to power heating, air conditioning, or other ancillary equipment on any such vehicle.
- c. The permittee must designate one or more locations as deemed appropriate for the permanent posting of a notice(s) to all drivers of diesel-fueled vehicles in excess of 10,000 pounds of these limitations on vehicle idling in all areas of the property that may be frequented by such vehicles. Such signs must be maintained in their approved location(s) as long as diesel-fueled vehicles in excess of 10,000 pounds are being used.

All requirements must be noted on all clearance plans and will be reviewed and approved by the Planning and Environmental Review Director, or designee, before the City issues any land use permit. Requirements must be adhered to throughout all grading and construction periods. The location and information provided on the sign(s) must be reviewed and approved by the Planning and Environmental Review Director, or designee, before the City issues any land use permit.

Monitoring: The Planning and Environmental Review Director, or designee, must verify inclusion of these measures in the project's building and grading plans and must periodically site inspect to ensure compliance. SBCAPCD inspectors will respond to complaints.

4.2.6 Residual Impacts

With implementation of these mitigation measures, residual project-specific and project contributions to cumulative impacts on air quality would remain less than significant.

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