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## 4.2 AIR QUALITY

### 4.2.1 Existing Conditions

#### Meteorological Setting

The project site is located on the coastal plain in Goleta. The climate in and around the City of Goleta, as well as most of southern California, is dominated by the strength and position of the semi-permanent high-pressure center over the Pacific Ocean near Hawaii, which creates cool summers, mild winters, and infrequent rainfall. The high-pressure center also drives the cool daytime sea breeze and maintains a comfortable humidity range and ample sunshine after the frequent morning clouds dissipate. However, the same atmospheric processes that create the area's desirable living climate also 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 degrees 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 17.54 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 5-10 miles per hour on average. At night, especially in winter, the land becomes cooler than the ocean and an offshore wind of 3-5 miles per hour develops. Early morning winds are briefly from the south-east, parallel to the coastline, before the daytime onshore flow becomes well established again. One other important wind regime occurs when a high pressure occurs over the western United States creating 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. However, because of Goleta's location relative to the ocean, the incoming marine air during warm season onshore flow contains little air pollution and local air quality is not substantially affected by the regional subsidence inversions.

A second inversion type forms on clear, winter nights when cold air from 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

source. 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 (CO) and nitrogen oxides (NO<sub>x</sub>) because of this winter radiation inversion condition. However, Santa Barbara County has a comparatively limited number of mobile sources and these continue to become cleaner each year. For this reason, regardless of limited nocturnal mixing effects, localized Santa Barbara County air quality monitoring data (since 1988) shows that CO levels have not exceeded health standards. Monitoring data has indicated that ozone levels have exceeded United States Environmental Protection Agency (USEPA) health standards on various days, creating “hot spots” at monitoring stations throughout the County. NO<sub>x</sub> is a precursor to the creation of ozone; and is therefore, a contributor to these ozone exceedances. However, the days of exceedance per year have substantially decreased from 1989 to 2009, with the 1-hour concentrations reduced by as much as 27 percent and the 8-hour concentrations having decreased by as much as 28 percent. With these reductions, the County is in compliance with the 1-hour standards, but remains out of compliance with the 8-hour standards, although the decreasing trends in concentrations of ozone continues (CAP, 2010).

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.

## Existing Air Quality

The project is located in the South Central Coast Air Basin (SCCAB), which includes San Luis Obispo, Santa Barbara, and Ventura Counties. The project site is located in Santa Barbara County. The California Air Resources Board (ARB) and the Santa Barbara County Air Pollution Control District (APCD) 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: (1) the Goleta monitoring station, located at 380 North Fairview Avenue, which monitors ozone (O<sub>3</sub>), CO, and NO<sub>x</sub>; and (2) the Santa Barbara station, located at 700 East Canon Perdido, which measures inhalable particulate matter (PM<sub>10</sub>), and fine particulate matter (PM<sub>2.5</sub>). **Table 4.2-1** summarizes the last five six years of published data from these monitoring stations. The following conclusions regarding air quality in the City of Goleta can be drawn from these data:

1. Photochemical smog (ozone) levels infrequently exceed standards. The State 1-hour standard for ozone has not been exceeded in six years, and the State and Federal 8-hour standards ~~have not been exceeded since 2005~~ were each exceeded once in 2009.
2. Federal and State CO standards have not been exceeded in the last six years. Maximum one- or 8-hour CO levels at the closest air monitoring station are currently less than 25 percent 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. PM<sub>10</sub> levels occasionally exceed the State standard, but the Federal particulate standard is very rarely exceeded. The State PM<sub>10</sub> standard is exceeded on approximately 5 percent of all days while the more lenient, Federal standard has not been exceeded in the past six years.

4. A substantial fraction of PM<sub>10</sub> is comprised of ultra-small diameter particulates capable of being inhaled into deep lung tissue (PM<sub>2.5</sub>). Even with the revision of the national 24-hour PM<sub>2.5</sub> standard from 65 micrograms per cubic meter (µg/m<sup>3</sup>) to 35 µg/m<sup>3</sup>, the frequency of days exceeding the standard is minimal. PM<sub>2.5</sub> measurements have only exceeded Federal standards once since ~~2004~~ 2005.
5. More localized pollutants such as NO<sub>x</sub>, lead, etc. are likely very low near the project site because background levels never exceed allowable levels. There is substantial excess dispersive capacity to accommodate localized vehicular air pollutants such as NO<sub>x</sub> without any threat of violating the applicable standards.

**Table 4.2-1**  
**Project Area Air Quality Monitoring Summary (2004 2005 - 2008 2010)**  
**(Days Standards Were Exceeded and Maximum Observed Levels)**

Pollutant/Standard	2004 2005	2005 2006	2006 2007	2007 2008	2008 2009	2010
<b>Ozone<sup>1</sup></b>						
1-Hour > 0.09 ppm (S)	0	0	0	0	<u>0</u>	<u>0</u>
8-Hour > 0.07 ppm (S)	0	0	0	0	<u>1</u>	<u>0</u>
8- Hour > 0.075 ppm (F)	0	0	0	0	<u>1</u>	<u>0</u>
Max. 1-Hour Conc. (ppm)	0.08	0.083	0.081	0.081	<u>0.09</u>	<u>0.072</u>
Max. 8-Hour Conc. (ppm)	0.066	0.069	0.066	0.066	<u>0.078</u>	<u>0.065</u>
<b>Carbon Monoxide<sup>1</sup></b>						
1-Hour > 20. ppm (S)	0	0	0	0	<u>0</u>	<u>0</u>
1-Hour > 9. ppm (S, F)	0	0	0	0	<u>0</u>	<u>0</u>
Max. 1-Hour Conc. (ppm)	1.8	1.1	2.2	1.4	<u>1.6</u>	<u>xx</u>
Max. 8-Hour Conc. (ppm)	0.8	0.8	1.1	0.6	<u>0.6</u>	<u>0.6</u>
<b>Nitrogen Dioxide<sup>1</sup></b>						
1-Hour > 0.18 ppm (S)	0	0	0	0	<u>0</u>	<u>0</u>
Max. 1-Hour Conc. (ppm)	0.044	0.039	0.046	0.053	<u>0.046</u>	<u>0.044</u>
<b>Inhalable Particulates (PM<sub>10</sub>)<sup>2,3</sup></b>						
24-Hour > 50 µg/m <sup>3</sup> (S)	1/346	12/346	25/353	44/347	<u>8/351</u>	<u>3/xx</u>
24-Hour > 150 µg/m <sup>3</sup> (F)	0/59	0/61	0/147	0/348	<u>0/351</u>	<u>0/xx</u>
Max. 24-Hr. Conc. (µg/m <sup>3</sup> )	59.	108	400*	109	<u>126</u>	<u>58</u>
<b>Ultra-Fine Particulates (PM<sub>2.5</sub>)<sup>2,3</sup></b>						
24-Hour > 35 µg/m <sup>3</sup> (F)	0/52	0/55	0/60	1/59	<u>0/50</u>	<u>0/xx</u>
Max. 24-Hr. Conc. (µg/m <sup>3</sup> )	28.3	27.9	23.5	44.2	<u>25.3</u>	<u>12.1</u>
*wildfire event, not counted as part of regular statistics						
S = State standard						
F = Federal standard						
ppm = parts per million						
µg/m <sup>3</sup> = micrograms per cubic meter						
xx = data not reported on CARB website						
Source: Santa Barbara County Annual Summaries, <del>2003</del> <u>2005</u> - <del>2008</del> <u>2010</u>						
<sup>1</sup> Goleta-Fairview Air Monitoring Station						
<sup>2</sup> Santa Barbara Perdido Station.						
<sup>3</sup> Fractions = (days violations recorded) / (days monitored)						

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## Regulatory Framework

### ***Ambient Air Quality Standards (AAQS)***

Federal and State ambient air quality standards 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 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, called "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 ozone (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 species with states retaining the option to add other pollutants, require more stringent compliance, or to 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 a 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 (CAAA) 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 ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "PM<sub>2.5</sub>"). 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 the California Air Resources Board (CARB) to recommend adoption of a State PM<sub>2.5</sub> standard that is more stringent than the Federal standard. This standard was adopted in 2002. The State PM<sub>2.5</sub> 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, the CARB extensively evaluated health effects of ozone exposure. A new State standard for an 8-hour ozone exposure was adopted in 2005, which aligned with the Federal 8-hour standard. The California 8-hour ozone standard of 0.07 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 of non-attainment. During the same re-evaluation process, the CARB adopted an annual State standard for nitrogen dioxide (NO<sub>2</sub>) that is more stringent than the corresponding Federal standard, and strengthened the state one-hour NO<sub>2</sub> standard.

As part of EPA's 2002 consent decree 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<sub>2.5</sub> were strengthened, a

new class of PM in the 2.5 to 10 micron size was created, some PM<sub>10</sub> standards were revoked, and a distinction between rural and urban air quality was adopted.

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

**Table 4.2-2  
Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
Ozone (O <sub>3</sub> )	1 Hour	0.09 ppm (180 µg/m <sup>3</sup> )	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (137 µg/m <sup>3</sup> )		0.075 ppm (147 µg/m <sup>3</sup> )		
Respirable Particulate Matter (PM <sub>10</sub> )	24 Hour	50 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	150 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>		-		
Fine Particulate Matter (PM <sub>2.5</sub> )	24 Hour	No Separate State Standard		35 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	15 µg/m <sup>3</sup>		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m <sup>3</sup> )	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m <sup>3</sup> )	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m <sup>3</sup> )		35 ppm (40 mg/m <sup>3</sup> )		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m <sup>3</sup> )		-		
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Arithmetic Mean	0.03 ppm (57 µg/m <sup>3</sup> )	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m <sup>3</sup> )	Same as Primary Standard	Gas Phase Chemilumi- nescence
	1 Hour	0.18 ppm (339 µg/m <sup>3</sup> )		0.100 ppm (188 µg/m <sup>3</sup> )		
Lead	30-Day average	1.5 µg/m <sup>3</sup>	Atomic Absorption	-	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Calendar Quarter	-		1.5 µg/m <sup>3</sup>		
	Rolling 3-month Average	-		0.15 µg/m <sup>3</sup>		
Sulfur Dioxide (SO <sub>2</sub> )	24 Hour	0.04 ppm (105 µg/m <sup>3</sup> )	Ultraviolet Fluorescence	-	0.5 ppm (1,300 µg/m <sup>3</sup> )	Spectrophotometry (Pararosaniline Method)
	3 Hour	-		-		
	1 Hour	0.25 ppm (655 µg/m <sup>3</sup> )		0.075 ppm (196 µg/m <sup>3</sup> )		
Visibility Reducing Particles	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 relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		<b>No Federal Standards</b>		
Sulfates	24 Hour	25 µg/m <sup>3</sup>	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m <sup>3</sup> )	Ultraviolet Fluorescence			
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m <sup>3</sup> )	Gas Chromatography			

Source: California Air Resources Board (09/08/10).

**Table 4.2-3  
Source and Effects of Air Pollutants**

<b>Pollutants</b>	<b>Sources</b>	<b>Primary Effects</b>
Carbon Monoxide (CO)	<ul style="list-style-type: none"> <li>Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust.</li> <li>Natural events, such as decomposition of organic matter.</li> </ul>	<ul style="list-style-type: none"> <li>Reduced tolerance for exercise.</li> <li>Impairment of mental function.</li> <li>Impairment of fetal development.</li> <li>Death at high levels of exposure.</li> <li>Aggravation of some heart diseases (angina).</li> </ul>
Nitrogen Dioxide (NO <sub>2</sub> )	<ul style="list-style-type: none"> <li>Motor vehicle exhaust.</li> <li>High temperature stationary combustion.</li> <li>Atmospheric reactions.</li> </ul>	<ul style="list-style-type: none"> <li>Aggravation of respiratory illness.</li> <li>Reduced visibility.</li> <li>Reduced plant growth.</li> <li>Formation of acid rain.</li> </ul>
Ozone (O <sub>3</sub> )	<ul style="list-style-type: none"> <li>Atmospheric reaction of organic gases with nitrogen oxides in sunlight.</li> </ul>	<ul style="list-style-type: none"> <li>Aggravation of respiratory and cardiovascular diseases.</li> <li>Irritation of eyes.</li> <li>Impairment of cardiopulmonary function.</li> <li>Plant leaf injury.</li> </ul>
Lead (Pb)	<ul style="list-style-type: none"> <li>Contaminated soil.</li> </ul>	<ul style="list-style-type: none"> <li>Impairment of blood function and nerve construction.</li> <li>Behavioral and hearing problems in children.</li> </ul>
Fine Particulate Matter (PM <sub>10</sub> )	<ul style="list-style-type: none"> <li>Stationary combustion of solid fuels.</li> <li>Construction activities.</li> <li>Industrial processes.</li> <li>Atmospheric chemical reactions.</li> </ul>	<ul style="list-style-type: none"> <li>Reduced lung function.</li> <li>Aggravation of the effects of gaseous pollutants.</li> <li>Aggravation of respiratory and cardio respiratory diseases.</li> <li>Increased cough and chest discomfort.</li> <li>Soiling.</li> <li>Reduced visibility.</li> </ul>
Fine Particulate Matter (PM <sub>2.5</sub> )	<ul style="list-style-type: none"> <li>Fuel combustion in motor vehicles, equipment, and industrial sources.</li> <li>Residential and agricultural burning.</li> <li>Industrial processes.</li> <li>Also, formed from photochemical reactions of other pollutants, including NO<sub>x</sub>, sulfur oxides, and organics.</li> </ul>	<ul style="list-style-type: none"> <li>Increases respiratory disease.</li> <li>Lung damage.</li> <li>Cancer and premature death.</li> <li>Reduces visibility and results in surface soiling.</li> </ul>
Sulfur Dioxide (SO <sub>2</sub> )	<ul style="list-style-type: none"> <li>Combustion of sulfur-containing fossil fuels.</li> <li>Smelting of sulfur-bearing metal ores.</li> <li>Industrial processes.</li> </ul>	<ul style="list-style-type: none"> <li>Aggravation of respiratory diseases (asthma, emphysema).</li> <li>Reduced lung function.</li> <li>Irritation of eyes.</li> <li>Reduced visibility.</li> <li>Plant injury.</li> <li>Deterioration of metals, textiles, leather, finishes, coatings, etc.</li> </ul>

Source: California Air Resources Board, 2002.

A new Federal one-hour standard for NO<sub>2</sub> has also recently been adopted. This standard is more stringent than the existing State standard. Based upon air quality monitoring data in the SCCAB, the Basin will likely be designated as “non-attainment” for the national one-hour standard. That designation will require the inclusion of NO<sub>2</sub> in the basin air quality management plan.

### ***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.” The regional APCD is the agency responsible for regulating air pollution in the project area.

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 non-attainment areas to become the State Implementation Plan (SIP). The 2001 Clean Air Plan (CAP) was adopted as the Santa Barbara County portion of the SIP, designed to meet and maintain Federal clean air standards. The 2010 CAP, adopted by the APCD Board on January 11, 2011, incorporates updated data and is currently the most recent Clean Air Plan for ultimately meeting the state ozone standard.

Santa Barbara County is designated as a Federal ozone attainment area for the 8-hour ozone National Ambient Air Quality Standard (the 1-hour Federal standard was revoked for Santa Barbara County). The County is also considered in attainment for the State one-hour standard for ozone as of 2010<sup>1</sup>. A new California 8-hour ozone standard was implemented in May 2006, which the County has violated. The County also continues to violate the State standard for PM<sub>10</sub>, therefore Santa Barbara County is a non-attainment area for the State standards for ozone and for PM<sub>10</sub>. The County is in attainment for the Federal PM<sub>2.5</sub> standard and is designated “unclassified” for the State PM<sub>2.5</sub> standard, and is designated “attainment” or “unclassified” for other State standards and for all Federal clean air standards<sup>2</sup>.

### **4.2.2 Thresholds of Significance**

According to the City of Goleta’s *Environmental Thresholds and Guidelines Manual*, a significant adverse air quality impact may occur when a project individually or cumulatively:

- a. Interferes with progress towards the attainment of the ozone standard by releasing emissions that equal or exceed the established long-term quantitative thresholds for NO<sub>x</sub> and ROC.
- b. Equals or exceeds the State or Federal ambient air quality standard for any criteria pollutant (as determined by modeling).
- c. Results in toxic or hazardous pollutants in amounts, which may increase cancer risks for the affected population.
- d. Causes an odor nuisance problem impacting a considerable number of people.

<sup>1</sup> Santa Barbara County Air Pollution Control District, *2010 Clean Air Plan*, January 2011.

<sup>2</sup> Ibid.

Cumulative air quality impacts and consistency with the policies and measures in the Air Quality Supplement of the Comprehensive Plan, other general plans, and the Air Quality Attainment Plan (AQAP) should be determined for all projects (i.e., whether the project exceeds the AQAP standards).

~~The City thresholds also state that toxic or hazardous air pollutants in amounts that may increase cancer risks for the affected population should be discussed as applicable.~~

The following significance thresholds have been established by the Santa Barbara County APCD (Scope and Content of Air Quality Sections in Environmental Documents, SPCAPCD, December 2011 2010). While the City of Goleta has not yet adopted any new threshold criteria, these APCD thresholds are considered appropriate for use as a guideline for the impact analysis.

### **APCD Operation Impacts Thresholds**

Based on APCD Thresholds, the project would result in a significant impact, either individually or cumulatively, if it would:

- e. Emit 240 pounds per day or more of ROG and NO<sub>x</sub> from all sources;
- f. Emit 25 pounds per day or more of unmitigated ROG from any motor vehicle trips only;
- g. Emit 25 pounds per day or more of unmitigated NO<sub>x</sub> from any motor vehicle trips only;
- h. Emit 80 pounds per day or more of PM<sub>10</sub>;
- i. Cause or contribute to a violation of any California or National Ambient Air Quality standard (except ozone);
- j. Exceed the APCD health risk public notification thresholds adopted by the APCD Board (10 excess cancer cases in a million for cancer risk and a Hazard Index of more than 1.0 for non-cancer risk); or
- k. 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 Clean Air Plan (CAP; 2010).

l. Due to the County's non-attainment status for ozone and the regional nature of ozone as a pollutant, if a project's emissions from traffic sources of either of the ozone precursors (NO<sub>x</sub> or ROG), exceed the operational thresholds, then the projects' cumulative impacts are considered significant.

m. For projects that do not have significant ozone precursor emissions or localized pollutant impacts, if emissions have been taken into account in the 2010 CAP growth projections, regional cumulative impacts may be considered to be less than significant.

This project is accounted for in the 2010 CAP growth projections (see below).

### **APCD Construction Impacts Thresholds**

Quantitative thresholds of significance are not currently in place for short-term emissions. However, CEQA requires that the short-term impacts such as exhaust emissions from construction equipment and fugitive dust generation during grading ~~must be discussed~~ analyzed



~~In the interest of public disclosure.~~ APCD recommends that construction-related NO<sub>x</sub>, ROG, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions, from diesel and gasoline powered equipment, paving, and other activities, be quantified.

n. The APCD uses 25 tons per year for NO<sub>x</sub> and ROG as a guideline for determining the significance of construction impacts.

Under APCD Rule 202 D.16 (APCD Rule 202, 2012), if the combined emissions from all construction equipment used to construct a stationary source which requires an Authority to Construct permit, have the potential to exceed 25 tons of any pollutant, except carbon monoxide, in a 12-month period, the permittee shall provide offsets under the provisions of Rule 804 (APCD, Rule 804, 2012) and shall demonstrate that no ambient air quality standard will be violated.

### 4.2.3 Project Impacts

#### Construction Period Impacts<sup>3</sup>

***Impact AQ 1: Construction of the project would generate air pollutant emissions, including dust and equipment exhaust emissions.***

***Significance Before Mitigation: Potentially Significant***

Temporary construction activity emissions would occur during project build-out. Such emissions include on-site generation of dust and equipment exhaust from demolition, grading, and construction activities, and off-site emissions from construction employee commuting and/or trucks delivering building materials or exporting cut soils.

Construction activity emissions are difficult to quantify, since the exact type and amount of equipment that would be used or the acreage that may be disturbed on any given day in the future is not known with any reasonable certainty. The emphasis in environmental documents relative to construction activity emission impacts has therefore been to minimize the emissions as fully as possible through comprehensive mitigation even if the exact amount of emissions cannot be precisely quantified. Though no quantitative threshold has been established for short-term construction-related emissions, an analysis is nevertheless provided below.

Dust is normally the primary concern during construction of new buildings and infrastructure. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions." Emission rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance, or excavation, etc.). These parameters are not known with any reasonable certainty prior to project development and may change from day to day.

Because of the inherent uncertainty in the predictive factors for estimating fugitive dust generation, regulatory agencies typically use one universal "default" factor based on the area disturbed assuming that all other input parameters into emission rate prediction fall into mid-range average values. This assumption may or may not necessarily be applicable to site-specific conditions on the project site.

<sup>3</sup> -Addresses Thresholds "a," "b," "c," and "n."

APCD Rule 345 requires that dust control measures ~~are required~~ be implemented for all construction activities as standard conditions on grading permits. Use of enhanced dust control procedures such as continual soil wetting, use of supplemental binders, early paving, etc. can achieve a significant improvement in PM<sub>10</sub> control efficiency. The CARB Urban Emissions Model 2007 (URBEMIS2007) version 9.2.4 computer model predicts that with the use of such control measures emissions can be reduced to 1-2 pounds per acre of disturbance per day. The non-attainment status of Santa Barbara County for PM<sub>10</sub> dictates that all available mitigation measures should be implemented during grading and construction activities. Recommended PM<sub>10</sub> mitigation measures are included in the mitigation section, below.

Current research in particulate exposure health effects suggests that the most adverse effect derives from ultra-small diameter (2.5 microns or smaller) particulate matter known as PM<sub>2.5</sub>. This ultra-small particulate matter is composed of a mixture of particles directly emitted into the air, and particles formed in the air from the chemical transformation of gaseous pollutants such as sulfates, nitrates, or organic material. Currently, APCD guidelines do not list a threshold for PM<sub>2.5</sub> from construction activities.

Construction equipment exhaust contains carcinogenic compounds within the diesel exhaust particulates. Exhaust emissions would be generated by the operation of vehicles and equipment on the construction site. The majority of construction equipment and vehicles would be diesel powered, which tends to be more efficient than gasoline-powered equipment, producing lower carbon monoxide and hydrocarbon emissions than gasoline-powered equipment; however, diesel-powered equipment produces greater amounts of NO<sub>x</sub>, SO<sub>x</sub>, and particulates per hour of activity. The toxicity of diesel exhaust is evaluated based on a 24 hours per day, 365 days per year, 70-year lifetime exposure. Public exposure to heavy equipment operating during the project's construction phase will be an extremely small fraction of the above dosage assumption. Therefore, construction of the project is not expected to result in a significant public health risk associated with project-related heavy equipment operations exhaust.

Construction activity air quality impacts occur mainly in close proximity to the surface disturbance area. There may, however, be some "spill-over" into the surrounding community. That spill-over may occur as vehicles drop or carry out dirt or silt is washed into public streets. Passing non-project vehicles then pulverize the dirt to create off-site dust impacts. Spill-over may also occur through traffic congestion effects due to the addition of construction vehicles (trucks and contractor employee commuting) to existing ambient traffic volume. Emissions controls require good housekeeping procedures and a construction traffic management plan that will maintain such "spill-over" effects at a less-than-significant level.

Exhaust emissions would result from operation of on and off-site heavy equipment. The types and numbers of equipment would vary among contractors such that these emissions cannot be quantified with certainty. Initial grading activity will gradually be followed by building construction and then continue on to finish construction, paving, landscaping, etc. Construction of the residential and commercial portions of the project is anticipated to occur simultaneously. The URBEMIS2007 computer model was used to calculate emissions from the prototype construction equipment fleet and grading information listed in **Table 4.2-4**.

**Table 4.2-4  
Project Equipment Fleet**

Demolition (9,546 square feet)	1 Concrete Saw
	1 Dozer
	2 Tractor/Loader/Backhoes
	1 Haul Truck
Grading	1 Grader
	1 Tractor/Loader/Backhoe
	1 Excavator
	1 Dozer
	1 Roller
	1 Water Truck
Construction	2 Forklifts
	1 Tractor/Loader/Backhoe
	1 Crane
	1 Generator Set
	3 Welders
Paving	2 Paving Equipment
	1 Paver
	1 Roller
	1 Tractor/Loader/Backhoe
	4 Cement Mixers

Grading quantities are as follows:

- On-site cut 49,100 cubic yards (cy)
- On-site fill 48,800 cy
- Off-site export 300 cy, assumed 30 miles transport (round trip); however, the applicant has identified Cabrillo Business Park as a likely location

Utilizing the prototype equipment fleet and earthworks, listed in Table 4.2-4, daily emissions were calculated by URBEMIS2007 and are shown in **Table 4.2-5**.

**Table 4.2-5**  
**Construction Activity Emissions (pounds/day)**

Activity	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
<b>Demolition</b>							
No Mitigation	1.3/2.0	10.0/15.3	6.7/10.3	0.0	3.7/5.7	1.2/1.8	1,191.6/1,823.1
With Mitigation	1.3/2.0	8.9/13.6	6.7/10.3	0.0	3.3/5.0	0.8/1.2	1,191.6/1,823.1
<b>Grading</b>							
No Mitigation	4.4/6.7	35.5/53.6	19.5/29.8	0.0	117.4/179.6	25.8/39.5	3,516.9/5,380.9
With Mitigation	4.4/6.7	30.2/46.2	19.5/29.8	0.0	11.8/18.1	2.7/4.1	3,516.9/5,380.9
<b>Construction</b>							
No Mitigation	4.7/7.2	21.1/32.3	43.7/66.9	0.0	1.4/2.1	1.2	4,716.3/7,215.9
With Mitigation	4.7/7.2	18.9/28.9	43.7/66.9	0.0	0.5/0.8	0.4	4,716.3/7,215.9
<b>Painting and Paving</b>							
No Mitigation	70.8/108.32	15.8/24.2	13.3/20.3	0.0	1.3/2.0	1.2	1,709.2/2,615.1
With Mitigation	64.0/97.9	13.5/20.7	13.3/20.3	0.0	0.2/0.3	0.2	1,709.2/2,615.1
Source: URBEMIS2007 Model, Output in Appendix A.							
Data displayed is shown as: standard 23-month schedule / project accelerated 15-month schedule							

Thresholds for all emissions from construction equipment are established by the APCD on a tons per year basis. The total timeframe for the construction period was assumed to be 23 months (as is typical for the type of project, size, and site conditions), including: one month for demolition, four months for grading, 12 months for building construction, and six months for paving and painting. With this schedule, URBEMIS2007 was run to determine annual emissions from construction activities. The results are as shown below in **Table 4.2-6**. As shown on this table, peak annual construction activity emissions would be below Santa Barbara County APCD threshold guidelines of 25 tons per year for ROG and NO<sub>x</sub>. Nevertheless, because of the area's non-attainment status for PM<sub>10</sub>, APCD requires fugitive dust control mitigation measures for any project involving earth-moving activities. Prior to implementation of these measures, which are incorporated below in Section 4.2.5, the project would result in the potential for a significant impact related to PM<sub>10</sub> emissions.

**Table 4.2-6**  
**Construction Activity Emissions (tons/year)**

Activity	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
<b>Demolition</b>							
No Mitigation	0.01/0.02	0.11/0.17	0.07/0.11	0.00	0.04/0.06	0.01/0.06	13.11/20.06
With Mitigation	0.01/0.02	0.10/0.15	0.07/0.11	0.00	0.04/0.06	0.01/0.06	13.11/20.06
<b>Grading</b>							
No Mitigation	0.19/0.29	1.54/2.36	0.85/1.30	0.00	5.10/7.80	1.12/1.71	152.98/234.06
With Mitigation	0.19/0.29	1.54/2.36	0.85/1.30	0.00	5.10/7.80	1.12/1.71	152.98/234.06
<b>Construction</b>							
No Mitigation	0.61/0.93	2.75/4.21	5.71/8.74	0.00	0.18/0.28	0.16/0.24	615.47/941.67
With Mitigation	0.61/0.93	2.75/4.21	5.71/8.74	0.00	0.18/0.28	0.16/0.24	615.47/941.67
<b>Painting and Paving</b>							
No Mitigation	4.57/6.99	1.02/1.56	0.86/1.32	0.00	0.09/0.14	0.08/0.12	110.25/168.68
With Mitigation	4.13/6.32	0.87/1.33	0.86/1.32	0.00	0.01/0.06	0.01/0.06	110.25/168.68
APCD Guideline	25	25	-	-	-	-	-
Source: URBEMIS2007 Model, Output in Appendix A. Data displayed is shown as: standard 23-month schedule / project accelerated 15-month schedule							

Should the ~~permittee accelerate~~ project implement accelerated the construction schedule condensed to a 15-month period, the equipment fleet, and associated daily and annual rate of emissions, would increase. For an accelerated overall schedule of 15 months (vs. the standard 23 months described above), the emissions would increase by a factor of 1.53 (23/15). Based on emission rates listed in Table 4.2-6, which show peak year levels of ROG during “Painting and Paving” and NO<sub>x</sub> during “Construction,” these values would be approximately 6.99<sup>4</sup> and 4.21<sup>5</sup>, respectively. An accelerated construction schedule of 15 months duration would not exceed thresholds for either of these air pollutants.

See Section 4.7 *Hazards and Hazardous Materials* for discussion regarding the potential for asbestos containing materials in the existing on-site structures to be demolished.

### Operational Impacts – Mobile and Area Source Emissions<sup>6</sup>

#### ***Impact AQ 2: Operation of the project would generate mobile and area source air pollutant emissions.***

##### *Significance Before Mitigation: Potentially Significant*

Long-term project emissions are primarily associated with traffic generated by the project. Although the project may introduce certain stationary sources typical of retail commercial centers including dry cleaning establishments, restaurants, and gas stations, the specific uses that would occur at the project site have not been identified and therefore are not assessed herein. However, these stationary sources would typically require additional permits or and review by the City prior to issuance of a Land Use Permit and would be subject to regulation by the APCD that would prevent significant air quality impacts.

<sup>4</sup> Painting and Paving/No Mitigation: 4.57 x 1.53 = 6.99

<sup>5</sup> Construction/No Mitigation: 2.75 x 1.53 = 4.21

<sup>6</sup> \_Addresses Thresholds “a,” “b,” “e”-“i,” and “k.”

The project would develop 274 apartments and 90,054 square feet within commercial buildings (including a community shopping center and 5 additional live/work condominiums). As discussed in Section 4.13 *Transportation and Traffic*, the project is predicted to generate 5,235 new trip ends per day (trip reductions associated with the mixed-use aspect of the project are accounted for in this estimate). Operational mobile and area source emissions for the project were calculated using CalEEMod URBEMIS2007, the computer model developed by the CARB South Coast Air Quality Management District (SCAQMD) for urban growth emissions. The CalEEMod URBEMIS2007 model was run using the trip generation factors specified in the project's traffic study (Appendix H). The model was used to calculate area source emissions from the increased operation of the new buildings and the resulting vehicular operational emissions for the increase of daily trips to/from the site. The results are shown below in **Table 4.2-7**.

**Table 4.2-7  
Project Operations - Mobile and Area Source Emissions**

Year 2011	Emissions (lbs/day)						
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub> (e) <sup>1</sup>
Area Sources	16.7 <u>11.7</u>	3.0 <u>0.3</u>	6.3 <u>24.5</u>	0.0	≤0.1	0.0 <0.1	3,739.2 <u>43.0</u>
Mobile Sources	<b>32.4</b> <b>28.3</b>	<b>43.6</b> <b>47.5</b>	371.6 <u>271.3</u>	0.23	54.4 <u>28.3</u>	10.5 <u>2.1</u>	28,563.9 <u>22,422.9</u>
Energy Sources	<b>0.1</b>	<b>0.9</b>	0.4	0.0	<0.1	<0.1	1,165.3
<b>Total</b>	49.4 <u>40.1</u>	46.6 <u>48.7</u>	377.9 <u>296.2</u>	0.3 <u>0.2</u>	54.5 <u>28.4</u>	10.5 <u>2.1</u>	32,303.4 <u>23,631.1</u>
APCD Threshold	25/55 <sup>a</sup>	25/55 <sup>a</sup>	N/A	N/A	80	**	

**Bold numbers** indicate an exceedance of the threshold.

<sup>1</sup> CO<sub>2</sub>(e) is a metric measure used to compare emissions from various greenhouse gases based on their global warming potential as equivalents ("e") to units of Carbon Dioxide (SBAPCD, CEQA *Significance Thresholds for GHGs Questions and Answers, June 2012*).

<sup>a</sup> Transportation (mobile) sources only/total emissions.

\*\* Table 4.2-2 above provides the State and Federal ambient air quality standards as annual concentrations rather than pounds per day of emissions. No APCD thresholds are adopted. URBEMIS2007 CalEEMod Air Quality Model; Output in Appendix A.

The project's emissions would exceed significance threshold levels as indicated in Table 4.2-7. Project-related transportation emission levels for the two ozone precursor pollutants (ROG and NO<sub>x</sub>) would exceed thresholds. Therefore, project operational air quality impacts would be considered significant.

### *Micro-scale Impact Analysis*

Micro-scale air quality impacts have traditionally been analyzed in environmental documents where the air basin was a non-attainment area for CO. City environmental review guidelines conclude that any project generating less than 800 peak hour trips would not likely create a CO "hot spot." The project would generate 280 AM peak hour trips and 479 PM peak hour trips. Therefore, the project is not expected to result in a CO hot spot.

## Operational Impacts - Health Risk from Exposure to Toxic Air Contaminants Generated by Mobile and Stationary Sources<sup>7</sup>

***Impact AQ 3: Residents of the project in the vicinity of the US 101/UPRR transportation corridor would be exposed to diesel particulate matter emitted by trains and trucks.***

*Significance Before Mitigation: Potentially Significant*

### *Diesel Particulate Matter*

To determine the health risks associated with another project proposed in similar proximity to the UPRR railroad track in Goleta (the Village at Los Carneros), a health risk screening assessment was prepared by SAIC in December 2002 and cited in the EIR for that project (Village at Los Carneros Final EIR, November 2007). The Village at Los Carneros project site is located approximately 0.75 mile east of the Westar Mixed-Use Village project site along the same railroad tracks and at a similar distance from U.S. Highway 101 (US 101). The health risk screening assessment concluded that the passage of 16 trains per day created an excess cancer risk of 0.64 in a million from diesel particulate matter (DPM). The individual cancer risk for all people in Goleta is approximately 250,000 in a million (one in four people will develop life-threatening cancers in their lifetime). An increase in that risk to less than 250,001 in a million is considered a negligible change in risk levels. An increase in ten in a million to 250,010 in a million is considered significant under state programs such as Proposition 65 and/or AB2588 (“toxic hot spots” law). A risk increase that is between one in a million to ten in a million is an intermediate area not considered significant, but where all reasonably available mitigation should be implemented.

DPM emissions are also generated by truck traffic on US 101. The freeway currently carries 2,325 trucks with three or more axles (presumed all diesel) west of Storke Road.<sup>8</sup> In response to evidence that there are observed adverse health effects in pollution-sensitive populations living within 500 feet of freeways, the California ARB concluded that residences, schools, day care centers, playgrounds and medical facilities should not be sited within 500 feet of a freeway.<sup>9</sup> The Santa Barbara County APCD observed that this policy applies to US 101 in Goleta.<sup>10</sup>

The closest residences in the project would be located 265 feet from the nearest east-bound travel lane of the US 101. However, the APCD’s rationale for applying the ARB policy to US 101 was that adverse health effects were observed at traffic volumes as low as 41,000 average daily trips (ADT) and that US 101 at Glenn Annie Road was estimated to carry 65,800 ADT in 2006 based on Santa Barbara County Association of Governments (SBCAG) data. However, Caltrans records for 2009 show that the US 101 traffic volume adjacent to the project site was 33,000 ADT.<sup>11</sup> Thus, based on the Caltrans data, traffic volumes adjacent to the project site are below the lowest ADT where adverse health effects were observed.

US 101 will carry approximately 2,500 diesel trucks per day for the next 70 years (the diesel exposure risk window), which will emit 0.20 grams/mile/truck of DPM, or 12.5 gram/mile per

<sup>7</sup> -Addresses Thresholds “c” and “j.”

<sup>8</sup> Caltrans, *Annual Average Daily Truck Traffic on the California State Highway System*, 2009, page 180.

<sup>9</sup> California Air Resources Board (CARB), *Air Quality and Land Use: A Community Health Perspective*, April 2005.

<sup>10</sup> Santa Barbara County APCD, *Public Health and High Traffic Roadways*, 2008.

<sup>11</sup> <http://traffic-counts.dot.ca.gov/>.

meter of mixing zone width.<sup>12</sup> The Village at Los Carneros FEIR Study for railroad proximity impact health risk screening was based upon an average DPM emission rate of 3.2 grams per mile per meter of mixing zone width. US-101 is adjacent to the north side of the railway right-of-way, and thus approximately 100 feet further north of the closest residential unit. A simple ratio of on-road truck DPM to train DPM provides a conservative screening level health risk value related to freeway proximity. Applying the ratio of DPM emission rates to associated health risks results in an estimated excess cancer risk posed by freeway truck traffic. For a resident remaining outside on the balcony for 24-hours per day for 350 days per year for the next 70 years, the increased cancer risk would be approximately 2.5 in a million. While it is recognized that such exposure assumptions in no way reflect human behavior, they represent the standard (worst-case) analysis protocols. As previously noted, risks between 1.0 and 10.0 in a million would be considered less-than-significant, but require the use of reasonably available control measures for diesel exposure.

The primary outdoor recreation area would be sited at the southern end of the residential portion of the project and is separated from the combined UPRR/US 101 corridor by intervening structures. The pool area is 500 feet from the freeway centerline, reducing risks of outdoor exposure to DPM. Additionally, prevailing daytime onshore winds predominately blow from the site toward the freeway and away from the project site. Thus, although certain project areas and residences are within 500 feet of the freeway and railroad proximity ~~may be causes for concern~~, the calculated risks from DPM exposure are within generally acceptable levels. As stated previously, a risk increase that is between one in a million to ten in a million is not considered significant, but warrants that all reasonably available mitigation should be implemented. However, for purposes of this analysis, prior to implementation of all reasonably available mitigation measures, this risk is conservatively identified as potentially significant.

### *Toxic Air Contaminants From Stationary Sources*

In consultation with the Santa Barbara County Fire Department Hazardous Materials Unit, a data base search was conducted to determine the types of chemicals that are used and the types of waste generated within a 2,000-foot radius of the project site. The resulting list of the locations of these chemicals and their quantities is provided in Appendix E. A review of the listed chemicals from the identified sites revealed that none are listed in the 2010 Office of Environmental Health Hazard Assessment "Toxicity Criteria Database" and are therefore not considered to be air toxics. Therefore, for purposes of this analysis, the health risk associated with toxic air contaminants at this project site would be considered less than significant.

### *Toxic Air Contaminants from Truck Deliveries*

Commercial uses associated with the proposed project would result in daily and weekly truck deliveries. Heavy-duty trucks at the project site are subject to CARB Rule 2485. This Airborne Toxics Control Measure requires that the engine of a commercial motor vehicle be turned off upon arriving at its destination and restarted no more than 30 seconds before departing. A driver of a commercial motor vehicle is prohibited from idling more than five minutes. Idling necessary for health, safety or operational concerns is exempt from these restrictions. With compliance with CARB Rule 2485, idling emissions from heavy-duty trucks associated with the commercial materials deliveries would be extremely limited and would not expose residents to substantial pollutant concentrations. Further, trucks serving commercial uses would enter and exit the project site using a secondary access entry along Hollister Avenue in the southwest

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<sup>12</sup> Calculated using EMFAC2007.



portion of the site, significantly removed from the residential areas of the project. Therefore, this impact would be considered less than significant.

### **Operational Impacts – Air Quality Issues Associated with Proximity of Commercial and Residential Uses<sup>13</sup>**

***Impact AQ 4: The commercial uses could generate odors that would be detectable at the residences.***

*Significance Before Mitigation: Potentially Significant*

Mixed-use developments have the potential for odor nuisance conflicts that depend on the types of uses and the distance between the source of odor (commercial use) and the sensitive receptor (residences). Odor may be generated by fumes, dust, storage of decaying organic waste, food preparation, and delivery truck exhaust, among others. The project does not identify specific commercial retail and shopping center uses. Based on the zoning designation and building types, potential uses include retail shops, grocery markets, restaurants, drug stores, and offices. Grocery markets and restaurants are more likely to generate odor from organic refuse decay if not stored properly, and rear-of-store, deliveries and refuse disposal are not properly maintained.

The closest distance between an on-site residence (excluding the live-work units) and an on-site commercial building is approximately 70 feet (Building 4 and Building C) and the closest distance between an on-site residence (Building 2) and off-site research and development building (70 Santa Felicia Drive) is approximately 105 feet. Mitigation Measure AES 3-6, requiring enclosure of trash and recycling storage, would further reduce odors from commercial waste sources.

SBCAPCD Rule 303 prohibits emissions of air contaminants that create detriment, nuisance, or annoyance. APCD inspectors respond to odor nuisance complaints. They are able to readily determine if odor control is being practiced as specifically required in any enforcement action of Rule 303.

The SBCAPCD CEQA guidelines identify fast food restaurants, bakers, and coffee roasting facilities as examples of uses that may create odor issues at nearby residential uses. Certain restaurants, seafood markets, or idling trucks in receiving bays may also have odor impact potential. The guidelines suggest that preparation and implementation of an odor abatement plan (OAP) can reduce possible odor nuisance conflict. OAPs should include the following elements:

- Name and telephone number of contact person(s) at the facility responsible for logging in and responding to odor complaints
- Policy and procedure describing the actions to be taken when complaint is received, including the training provided to the staff on how to respond.
- Description of potential odor source at the facility
- Description of potential methods for reducing odors, including minimizing idling of delivery and service trucks and buses, process changes, facility modifications and/or feasible add-on air pollution control equipment
- Contingency measures to curtail emissions in the event of a public nuisance complaint.

<sup>13</sup> -Addresses Threshold “d.”

Given the proximity between residences and the closest commercial uses, and the potential types of uses that could be developed under the project, the project would result in the potential for a significant odor nuisance impact.

### **Consistency with Air Quality Planning<sup>14</sup>**

#### ***Impact AQ 5: The project's population would not exceed the growth forecast used in preparing the Clean Air Plan.***

*Significance Before Mitigation: Less than Significant*

The project would be consistent with air quality planning in that it proposes a mixed-use, infill project. The mixed-use development would reduce vehicle trips providing opportunities for trips between commercial and residential uses to be accomplished by walking. The infill location of the project would provide for shorter trip lengths. It also includes construction of a Santa Barbara Metropolitan Transit District (MTD) Bus Stop west of the main driveway along Hollister Avenue, which would facilitate use of transit. These aspects would reduce air emissions associated with vehicular travel. (Trip reductions associated with the mixed-use aspect of the project are accounted for in the estimate of project-generated trips used in the above analysis.)

Consistency with the Clean Air Plan (CAP), the County's plan to achieve attainment status of the ozone standard, is based on consistency with growth forecasts used in developing the CAP. The current CAP (2010) used forecast data from the 2007 Regional Growth Forecast prepared by SBCAG. This forecast is based on development anticipated by general plans, in this case the City of Goleta General Plan. The project would require a General Plan amendment. The City of Goleta General Plan designates the undeveloped portion of the project site for development of 15 to 20 residential units per acre. At 20 residential units per acre, these residential units would generate approximately 2,996 trips per day. The project would generate 5,235 net new trips per day. Although the project would increase the number of trips generated at the site, and associated air emissions (primarily NO<sub>x</sub>), the assessment of consistency is based on whether or not the project would result in a total population that would exceed the forecast population.<sup>15</sup>

The City's current population is approximately 29,182.<sup>16</sup> The project would add approximately 726 residents.<sup>17</sup> This would result in a total population of 29,908, which would be less than the 2020 forecast population for the City of 34,500 as per the 2007 Regional Growth Forecast. Therefore, the project would not result in an inconsistency with the 2010 CAP.

### **4.2.4 Cumulative Impacts<sup>18</sup>**

The significance thresholds used for this analysis on a project level (25 lbs per day of NO<sub>x</sub> or ROG from transportation sources only) are also intended to address cumulative air quality impacts. The project's operational emissions would exceed these thresholds. Therefore, the project-level impacts identified above associated with operational mobile and area source

<sup>14</sup> -Addresses Thresholds "k" and "m."

<sup>15</sup> Eric Gage Santa Barbara County Air Pollution Control District, email to Envicom Corporation, February 22, 2011. Scope and Content of Air Quality Sections in Environmental Documents (December, 2011)

<sup>16</sup> U.S. Census Bureau, State and County QuickFacts, <http://quickfacts.census.gov/qfd/states/06/0630378.html>, accessed February 23, 2011.

<sup>17</sup> 279 units x 2.6 people/unit.

<sup>18</sup> Addresses Thresholds "a", "l", and "m."

emissions are also considered significant contributions to cumulative air quality impacts. Table 4.2-8 shows a comparison of the project's estimated transportation related emissions with the County's average daily emissions for 2006 as reported in the Goleta General Plan/Coastal Land Use Plan Final Supplemental EIR.

**Table 4.2-8  
Comparison of Traffic Generated Emissions for the Proposed Project  
and Average Daily Emissions for Santa Barbara County (tons/day)**

	<b>ROG</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>SO<sub>2</sub></b>	<b>PM<sub>10</sub></b>
Project Transportation emissions (operational)	<del>0.0162</del> <u>0.0142</u>	<del>0.0218</del> <u>0.0238</u>	<del>0.1858</del> <u>0.1357</u>	<del>0.00015</del> <u>0.0001</u>	<del>0.0272</del> <u>0.0142</u>
Santa Barbara County Mobile Source Emissions – Year 2006 (on-road vehicles) <sup>a</sup>	9.2	15.7	93.9	0.1	0.6
<b>Percent Increase from Project Emissions</b>	<del>0.18</del> <u>0.15%</u>	<del>0.14</del> <u>0.15%</u>	<del>0.20</del> <u>0.14%</u>	<del>0.15</del> <u>0.10%</u>	<del>4.53</del> <u>2.37%</u>
<sup>a</sup> Goleta General Plan/Coastal Land Use Plan Final Supplemental EIR, July 2009.					

Project-related transportation emission levels for the two ozone precursor pollutants (ROG and NO<sub>x</sub>) would exceed thresholds. Therefore, project's cumulative contribution to mobile source air quality impacts would be considered significant and unavoidable.

## 4.2.5 Mitigation Measures

### ***Impact AQ 1: Construction of the project would generate air pollutant emissions, including dust and equipment exhaust emissions.***

**AQ 1-1:** Dust generated by construction and/or demolition activities shall be kept to a minimum.

**Plan Requirements:** The following dust control measures ~~shall~~must be shown on all building and grading plans and the permittee ~~shall~~must ensure that these measures are implemented by the contractor/builder:

- a. During clearing, grading, earth-moving, excavation, and/or transportation of cut or fill materials, ~~water trucks or sprinkler systems are to be used to prevent dust from leaving the site and to create a crust after each day's activities. excessive fugitive dust emissions must be controlled by regular watering or other dust-preventive measures using the following procedures, as specified by the SBAPCD:~~
  - i. During construction, water trucks or sprinkler systems shall be used to keep all areas of the vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this ~~would~~ should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency ~~shall occur~~ should be required whenever wind exceeds 15 miles per hour. Reclaimed water should be used whenever possible. ~~If wind speeds increase to the point at which such measures cannot prevent dust from leaving the site, construction activities shall be suspended.~~

- ii. Minimize amount of disturbed area and reduce on-site vehicle speeds to 15 miles per hour or less ~~(the site will contain posted signs with the speed limit). the total area generating dust, and on-site vehicle speeds shall be 15 miles per hour or less.~~
  - iii. Soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting soil material to and from the site shall be tarped from the point of origin.
  - iv. Gravel pads must be installed at all access points to prevent the tracking of mud onto public roads
  - v. After clearing, grading, earth moving, and/or excavation is complete, the disturbed area shall must be treated by watering, or revegetating, or by spreading soil binders until the area is paved or otherwise developed in a manner that prevents dust generation.
- ~~• Gravel pads, knock off plates, or similar BMPs, shall be installed at all access points to the project site to prevent tracking of mud onto roadways.~~
  - ~~• All gravel, dirt, and construction material shall be cleaned from the right-of-way at a minimum of once a day at the end of the work day.~~

The permittee shall must ensure that the contractor or builder designates a person or persons to monitor the dust control program and to order increased watering as necessary to prevent transport of dust offsite. Their duties shall must include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall must be provided to ~~City staff~~ the Director of Planning and Environmental Services, or designee, and to the SBAPCD, and shall must be posted in three locations along the project site's perimeter for the duration of grading and construction activities.

**Timing:** All requirements must be referenced in all clearance plans and reviewed and approved by the Planning and Environmental Services Director, or designee, before the City issues any LUPs determined necessary by City staff, including grading and construction plans, and shall be reviewed and approved by City staff prior to any LUP issuance. Requirements must be adhered to throughout all grading and construction periods.

**Monitoring:** The Planning and Environmental Services Director, or designee, City staff shall must ensure mitigation measures are printed included on plans and shall must periodically inspect the project site to ~~ensure~~ verify compliance. SBAPCD inspectors will respond to nuisance complaints.

**AQ 1-2:** Transport of all exported cut material from the project implementation shall must be tarped from the project site to the point of storage.

**Plan Requirements and Timing:** This requirement shall must be printed on all plans submitted when requesting for issuance of any LUP, building, or grading permit(s) for the project. The permittee shall must designate one or more locations as, deemed appropriate by the Planning and Environmental Services Director, or designee, for posting of a notice(s) to all drivers of vehicles transporting soils. Such signs will be maintained in their approved location(s)

during project construction. The location and information provided on the sign(s) must be reviewed and approved by ~~City staff prior to issuance of the~~ Planning and Environmental Services Director, or designee, before the City issues any LUP for the project.

**Monitoring:** The Planning and Environmental Services Director, or designee, City staff shall must ensure measures are printed on plans and shall periodically inspect the project site to ensure verify compliance. SBAPCD inspectors will respond to nuisance complaints.

**AQ 1-3:** Grading and construction contracts ~~shall~~ must specify that contractors adhere to requirements that reduce emissions of ozone precursors and particulate emissions from diesel exhaust.

**Plan Requirements:** The following ~~shall~~ apply:

- a. All portable diesel-powered construction equipment must be registered with the California state's portable equipment registration program OR ~~shall~~ obtain a SBAPCD permit.
- b. Fleet owners of mobile construction equipment are subject to the California Air Resources Board (CARB) Regulation for In-use Off-road Diesel Vehicles (Title 13, California Code of Regulations, ~~Chapter 9,~~ §2449).
- c. All commercial diesel vehicles are subject to limitations on idling time (Title 13, California Code of Regulations, ~~Chapter 9,~~ §2485). Idling of heavy-duty diesel construction equipment and trucks during loading and unloading ~~shall~~ be is limited to five minutes. Electric auxiliary power units should be used ~~whenever possible~~.
- d. Diesel construction equipment meeting the CARB Tier 4 2 or higher emission standards for off-road heavy-duty diesel engines ~~shall~~ must be used. If such equipment is not commercially available, equipment meeting CARB Tier 2 1 or higher emission standards ~~should~~ must be used ~~to the maximum extent feasible~~.
- e. Where it is possible to do so, diesel-powered equipment ~~should~~ must be replaced by electric equipment ~~whenever feasible~~.
- f. ~~If feasible~~ Diesel construction equipment ~~shall~~ must be equipped with selective catalytic reduction systems, diesel oxidation catalysts, and diesel particulate filters as certified and/or verified by CARB or the EPA if available.
- g. Catalytic converters ~~shall~~ must be installed on gasoline-powered equipment if feasible.
- h. All construction equipment ~~shall~~ must be maintained in tune per the manufacturer's specifications.
- i. The engine size of construction equipment ~~shall~~ must be the minimum practical size.
- j. The number of construction equipment operating simultaneously ~~shall~~ must be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.
- k. Construction worker trips ~~should~~ must be minimized by ~~requiring~~ promoting carpooling and by providing lunch onsite.

- I. Coatings (e.g. paints) must be labeled as “low-VOC” or “zero-VOC” in accordance with EPA rules for interior and exterior surfaces.

**Timing:** All requirements ~~shall~~ must be noted included on all grading and construction plans and be reviewed and approved by the Planning and Environmental Services Director, or designee, before the City issues any LUP City staff prior to LUP issuance. Requirements ~~shall~~ must be adhered to throughout all grading and construction periods.

**Monitoring:** The Planning and Environmental Services Director, or designee, City staff shall must ensure measures are printed on plans and periodically inspect the project site to verify compliance. SBAPCD inspectors will respond to nuisance complaints.

**AQ 1-4:** Diesel fuel emissions ~~shall~~ must be limited as follows.

**Plan Requirements:** 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 exceeding 10,000 pounds cannot idle in one location for more than five (5) minutes at a time.
- b. Diesel-fueled vehicles exceeding 10,000 pounds cannot use diesel-fueled auxiliary power units for more than five (5) minutes to power heater, air conditioner, 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 exceeding 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 exceeding 10,000 pounds are being used.

**Timing:** All requirements ~~shall~~ must be noted included on all grading and construction plans and be reviewed and approved by the Planning and Environmental Services Director, or designee, before the City issues any LUP City staff prior to LUP issuance. The permittee must adhere to these requirements shall be throughout all grading and construction periods. The location and information provided on the sign(s) ~~shall~~ must be reviewed and approved by ~~City staff~~ the Planning and Environmental Services Director, or designee, prior to before the City issues any LUP issuance.

**Monitoring:** The Planning and Environmental Services Director, or designee City staff shall must ensure measures are printed on plans and shall periodically inspect the site to verify compliance. SBAPCD inspectors will respond to nuisance complaints.

**AQ 1-5:** The permittee ~~shall~~ must submit to the SBAPCD a completed *Asbestos Demolition/Renovation Notification* form and comply with the *National Emission Standards for Hazardous Air Pollutants—Asbestos* during all demolition activities for the removal of two structures that provide a total of 9,546 square feet of floor

area. One structure is an office building housing a television studio company and the other is an ATM kiosk containing two drive-through ATMs.

**Plan Requirements and Timing:** The applicant must provide to the Planning and Environmental Services Director, or designee, written verification that a completed Asbestos Demolition/Renovation Notification form was submitted to the SBAPCD. In addition, all plans submitted for a demolition permit must include a note that all demolition activities must comply with the National Emission Standards for Hazardous Air Pollutants—Asbestos. These requirements must be met before the City issues a demolition permit.

**Monitoring:** The Planning and Environmental Services Director, or designee, City staff shall must monitor in the field for compliance.

***Impact AQ 2: During its operations, the project would generate mobile and area source air pollutant emissions.***

**AQ 2-1:** The permittee ~~shall~~ must prepare an Alternative Transportation/Transportation Demand Management Program to help reduce ROC and NO<sub>x</sub> emissions associated with project generated vehicular trips.

**Plan Requirements and Timing:** The Alternative Transportation/Transportation Demand Management Program ~~shall~~ must include, but not be limited to, the following elements:

- a. The applicant ~~shall~~ must contact the Metropolitan Transit District (MTD) to identify appropriate Transportation Demand Management (TDM) programs that are available to serve ~~all both patients, residents, patrons~~ and employees. Notice of all available TDM programs must ~~shall~~ be given to all new employees when they are hired.
- b. Notice of MTD bus routes and schedules ~~shall~~ must be posted and maintained up-to-date in a central location(s).
- c. ~~Separate male and female shower facilities shall be provided onsite and be available for use during and after work hours for all employees. Notice of these facilities shall be provided to all new employees when hired.~~
- cd. All employees ~~shall~~ must be advised on any ride sharing program or similar successor program administered by the Santa Barbara Association of Governments. The permittee applicant shall must request that all employees register semi-annually in the ride sharing program and shall make an effort to encourage participation in the program.
- de. An employee lunch room ~~shall~~ must be provided in Buildings B and I and ~~shall~~ must include the following amenities; refrigerator, microwave oven, sinks, food preparation tables, and tables/chairs.
- ef. Secure bicycle storage ~~shall~~ must be provided onsite throughout both the residential and commercial components.

An Alternative Transportation/TDM Program including but not limited to the above conditions must ~~shall~~ be prepared by the applicant for review and approval

by the Planning and Environmental Services Director, or designee, before the City issues City staff prior to a LUP for any commercial or residential building issuance.

**Monitoring:** Before the City issues a certificate of occupancy, the Planning and Environmental Services Director, or designee, must inspect, the Planning and Environmental Services Director, or designee, must City staff shall verify compliance with these measures.

See additional Greenhouse Gas Emissions Mitigation Measures

**Impact AQ-3: Residents of the project in the vicinity of the US 101/UPRR transportation corridor would be exposed to diesel particulate matter emitted by trains and trucks.**

**AQ 3-1:** Ventilation systems that are rated at MERV13 or better for enhanced particulate removal efficiency shall must be provided on all residential units at the project site within 500 feet of the eastbound lanes of US 101. The residents of these units shall must also be provided information regarding filter maintenance/replacement.

**Plan Requirements and Timing:** The aforementioned requirement must shall be shown on applicable building plans submitted to the City to obtain for approval of any Land Use and/or building permit(s) for any residential building.

**Monitoring:** The Planning and Environmental Services Director, or designee, must City of Goleta staff shall ensure that all of the aforementioned requirements are incorporated on plans submitted to the City to obtain for approval of any Land Use Permit and/or building permit(s) for any residential building and verify compliance before the City issues a certificate of occupancy for each residential building shall spot check after construction is complete to verify compliance.

**AQ 3-2 (Recommended):** Ventilation systems that are rated at MERV13 or better for enhanced particulate removal efficiency shall must be provided on **all** residential units at the project site. The residents of these units shall must also be provided information regarding filter maintenance/replacement.

**Plan Requirements and Timing:** The aforementioned ~~aforementioned~~ requirement must shall be shown on applicable building plans submitted to the City to obtain any for approval of any Land Use Permit and/or building permit(s) for any residential building.

**Monitoring:** ~~City~~ The Planning and Environmental Services Director, or designee, must ~~of Goleta staff~~ shall ensure that all of the aforementioned requirements are incorporated on plans submitted for approval of to the City to obtain any Land Use Permit and/or building permit(s) for any residential building and verify compliance before the City issues a certificate of occupancy for each residential building shall spot check after construction is complete to verify compliance.



**Impact AQ 4: The commercial uses could generate odors that would be detectable at the residences.**

**AQ 4-1:** ~~An~~ If odor generating uses, such as restaurants, laundries, dry cleaners, and print shops are to be operated within the project buildings, an odor abatement plan (OAP) shall ~~shall~~ must be prepared to address odor-generating uses of the commercial component that covers all of the commercial, retail, and restaurant buildings and acts as a framework and outlines the requirements for individual tenant OAPs. ~~In addition, t~~ The OAP shall ~~shall~~ must include:

- a. Name and telephone number of contact person(s) for each tenant responsible for logging in and responding to odor complaints, and any property management company responsible for enforcing rules and regulations of the property;
- b. All lease agreements for commercial tenants shall reference the requirements for compliance with the OAP;
- c. Policy and procedure describing the actions to be taken when complaint is received, including the training provided to the staff on how to respond;
- d. Descriptions of potential odor source at each building and tenant facility;
- e. Measures to eliminate nuisance odors for all product and waste/refuse storage areas that occur at the rear of the commercial buildings.
- f. Description of potential methods for reducing odors, including minimizing idling of delivery and service trucks and buses, process changes, facility modifications and/or feasible add-on air pollution control equipment; and
- g. Contingency measures to curtail emissions in the event of a public nuisance complaint.
  - ~~Restrictions of hours of operations for odor generating uses;~~
  - ~~Restrictions on deliveries;~~
  - ~~Long term maintenance requirements; and~~

**Plan Requirements and Timing:** ~~Prior~~ Before the City issues ~~to issuance of a~~ Land Use Permit for any commercial building, an OAP shall ~~shall~~ must be prepared in consultation with County of Santa Barbara Air Pollution Control District (SBAPCD) and submitted to the Planning and Environmental Services Director, or designee, City Planning and Environmental Department for approval. The OAP requirements shall ~~shall~~ must be incorporated into any property management rules and regulations.

**Monitoring:** The OAP shall ~~shall~~ must be approved in consultation with the SBAPCD and enforced as required ~~on-going complaint driven enforcement or site investigations shall occur~~ throughout the life the project.

**Impact AQ 5: The project's population would not exceed the growth forecast used in preparing the Clean Air Plan.**

This impact is less than significant, and therefore mitigation measures are not required. However, it is noted that Mitigation Measures AQ 2-1 and AQ 2-2 would further the project's consistency with air quality planning.

### **4.2.5 Residual Impacts**

Impact AQ 5 (consistency with air quality planning) would be less than significant without mitigation (**Class III**). With implementation of the mitigation measures identified above, impacts AQ 1 (dust impacts during construction), AQ 3 (diesel exposure) and AQ4 (odors) would be reduced to a less than significant level (**Class II**). However, Impact AQ 2 (operational mobile source emissions) would not be reduced to a less than significant level with implementation of the above mitigation measure and therefore is considered a significant unavoidable impact (**Class I**).