3.3 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

This section discusses air quality and greenhouse gas (GHG) emissions impacts associated with the proposed Avila Ranch Development Project (Project), including local and regional air quality within San Luis Obispo County (County). Air quality is evaluated according to the concentration of pollutants in ambient air. The U.S. Environmental Protection Agency (EPA) has established criteria to protect public health and welfare for seven criteria pollutants including carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O_3), sulfur dioxide (SO_2), 10-micron particulate matter (PM_{10}), 2.5-micron particulate matter ($PM_{2.5}$) and lead (Pb). Other air pollutants of concern include toxic air contaminants (TACs) or hazardous air pollutants (HAPs), in diesel particulate matter, generated from the operation of diesel engines (e.g., trains, equipment, trucks, etc.).

This analysis addresses both short-term construction impacts and long-term operational impacts from air quality emissions generated by the Project. Potential impacts are identified, and along with potential mitigation measures that could avoid or reduce impacts. This discussion of air quality and GHG impacts is based on a review of information contained in the City of San Luis Obispo (City)'s General Plan, the 2014 Land Use and Circulation Elements (LUCE) Update Environmental Impact Report (EIR), the Avila Ranch Development Plan (Development Plan), the County's Clean Air Plan, the City's Climate Action Plan, and the California Emissions Estimator Model (CalEEMod) run completed for the Project (Appendix H).

3.3.1 LUCE Update EIR

The 2014 LUCE Update EIR analyzed air quality impacts for the City, related to the adoption of the 2014 LUCE, but did not analyze site-specific air quality issues for the Project site. The LUCE Update EIR identified significant but mitigable impacts for short-term construction-generated air quality emissions, and significant and unavoidable impacts for long-term air quality emissions due to buildout of development allowed under the LUCE. However, for these issues the LUCE Update EIR concluded that implementation of the LUCE policies and existing City policies would reduce cumulative impacts to a less than significant level (City of San Luis Obispo 2014).

3.3.2 Environmental Setting

3.3.2.1 Regional Climate and Meteorology

The County's climate can generally be characterized as Mediterranean, with warm dry summers and cooler, relatively damp winters. Inland areas typically experience a wider range of temperatures than on the coast, mainly due to the separation of regions by transformation in terrain, such as the coastal mountain ranges. Maximum temperatures in the summer in coastal areas average about 70 degrees Fahrenheit, while temperatures in the high 90s are typical in the inland valleys. Average minimum winter temperatures range from the low 30s along the coast to the low 20s inland.

The County's meteorology is largely controlled by a persistent high-pressure system over the eastern Pacific Ocean. The Pacific high-pressure system remains generally fixed several hundred miles off-shore from May through September. Coastal fog and low clouds often form in the marine layer along the coast, lessening in the warmer interior valleys.

Approximately 90 percent of the total annual rainfall in the County occurs between November and April; however, rainfall amounts can vary considerably among different regions in the County. Annual rainfall averages from 16 to 28 inches in the Coastal Plain, while the Upper Salinas River Valley receives approximately 12 to 20 inches of rain annually. The Carrizo Plain is the driest area of the County, receiving an average of less than 12 inches of rain per year.

The speed and direction of local winds are influenced by the location and strength of the Pacific high-pressure system, by topographical features and by circulation patterns resulting from temperature differences between land and sea. In spring and summer, when the Pacific high is at its strongest, onshore winds from the northwest generally prevail during the day. In the fall, onshore surface winds decline and the marine layer grows shallow, allowing an occasional weak offshore flow. Pollutants may accumulate more during this time of year, remaining over the ocean for a few days and being carried back onshore. Strong inversions can form at this time, trapping pollutants near the ground surface; this effect is intensified when the Pacific high weakens and moves inland to the east. This may produce a condition known as Santa Ana where air, often pollutant-laden, is transported into the County from the east and southeast. The break-up of this condition generally occurs within seven days and may then result in stagnant conditions and a build-up of pollutants offshore. The sea breeze can also bring these pollutants back onshore, where they combine with local emissions and cause high pollutant concentrations. Local

meteorological conditions in the Project vicinity typically consist of temperatures varying from 40 to 70 degrees Fahrenheit, with precipitation observed 33 percent of the year, mainly from December through March. Wind speeds vary from 0 to 20 miles per hour throughout the year, and the wind is most often out of the northwest and west.

3.3.2.2 Greenhouse Gases and Global Climate Change

Global climate change involves alterations in the average weather of the Earth which can be measured by wind patterns, storms, precipitation and temperature. Scientific consensus has identified that human-related emission of GHGs above natural levels is a significant contributor to global climate change. GHGs that trap heat in the atmosphere and regulate the Earth's temperature include water vapor, carbon dioxide (CO_2), methane (CH_4), NO_x, chlorofluorocarbons (CFCs) and O_3.

The primary activities associated with GHG emissions include the electric power industry, transportation, industrial/manufacturing, agricultural, commercial, and residential (EPA 2015). Specifically, the main sources of increased concentrations of GHGs due to human activity include the combustion of fossil fuels and deforestation (CO_2); livestock and rice paddy farming, land use and wetland depletions, and landfill emissions (CH_4); refrigeration systems and fire suppression systems use and manufacturing (CFCs); and agricultural activities, including the use of fertilizers (NO_x).

The largest anthropogenic source of emissions comes in the form of CO_2, which makes up approximately 82 percent of U.S. GHG emissions. As such, CO_2 has the highest data availability and least uncertainty (EPA 2015). In 2012, the State of California produced approximately 364.20 million metric tons of CO_2 emissions from fossil fuel combustion. Sector sources of these CO_2 emissions are as follows: transportation (56.0 percent), industry (19.0 percent), electricity generation (13.2 percent), residential (7.5 percent), and commercial (4.4 percent) (EPA 2012).

Global climate change could potentially affect other resource areas, including hydrological resources and biological resources. Projected impacts to the region caused by global climate change include potential decreases in water supply and surface water quality, possible long-term decreases in groundwater yields, changes in coastal water quality, rising sea levels, increased flooding and fire events, declines in aquatic ecosystem health, lowered profitability for water-intensive crops, changes in species and habitat distribution, and impacts to fisheries (The California Regional Assessment Group 2002).

3.3.2.3 Regional Air Quality

San Luis Obispo County is part of the South Central Coast Air Basin, which also includes Santa Barbara and Ventura Counties to the south. Air quality within the County is contingent on several factors including the type, amount and dispersion rates of pollutants being emitted within the region. Major factors affecting pollutant dispersion, as discussed in the previous paragraphs, are wind speed and direction, atmospheric stability, temperature, the presence or absence of inversions, and the topographic and geographic features of the region.

3.3.2.4 Regional Emissions

The County has historically been designated as non-attainment of state standards for 1-hour and 8-hour Ozone (O_3) standards; however, conditions have improved as of January 2015. Based on the 2008 8-hour O_3 standard, the eastern half of the County is designated as marginal non-attainment for O_3 while the western half, which includes the Project site, is in attainment (see Table 3.3-1). O_3 is a secondary pollutant that is not produced directly by a source, but rather is formed by a reaction between Oxides of Nitrogen (NO_x) and reactive organic gases (ROGs) in the presence of sunlight. O_3 can impact public health at higher concentrations by causing respiratory irritation and other affects upon the lungs. It can also affect sensitive plant species by interfering with photosynthesis, and is therefore a threat to California agriculture and native vegetation. Primary emission sources of ROGs in the County are motor vehicles (over 50 percent), organic solvents, the petroleum industry, and pesticides. Primary sources of NO_x are motor vehicles (over 50 percent), public utility power generation, and fuel combustion by various industrial sources (EPA 2015).

The County has historically been a non-attainment area for the state standards for $PM_{10;}$ however, the County is within attainment of national standards for PM_{10}. Atmospheric particulate matter, or PM_{10}, is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. Human activities that generate PM_{10} include agricultural operations, industrial processes, fossil fuel combustion, construction and demolition operations, and entrapment of road dust into the atmosphere. Natural sources include wind-blown dust, wildfire smoke, and sea spray salt (EPA 2015).

Table 3.3-1. Ambient Air Quality Standards and Attainment Status

Pollutant	Average Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m3)	**Non-Attainment**	--	Non-Attainment Eastern SLO County – Attainment Western SLO County (Project site)
	8 Hour	0.070 ppm (137 µg/m3)		0.070 ppm (137 µg/m3)	
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m3	**Non-Attainment**	150 µg/m3	Unclassified*/ Attainment
	Annual Arithmetic Mean	20 µg/m3		--	
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	--	Attainment	35 µg/m3	Unclassified */ Attainment
	Annual Arithmetic Mean	12 µg/m3		12.0 µg/m3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Unclassified*
	8 Hour	9 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m3)	Attainment	100 ppb (188 µg/m3)	Unclassified*
	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)		0.053 ppm (100 µg/m3)	
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm (655 µg/m3)	Attainment	75 ppb (196 µg/m3)	Unclassified*
	3 Hour	--		--	
	24 Hour	0.04 ppm (105 µg/m3)		0.14 ppm (for certain areas)	
	Annual Arithmetic Mean	--		0.030 ppm (for certain areas)	
Lead (Pb)	30 Day Average	1.5 µg/m3	Attainment	--	No Attainment Information
	Calendar Quarter	--		1.5 µg/m3 (for certain areas)	
	Rolling 3-Month Average	--		0.15 µg/m3	

Notes: ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
mg/m^3 = milligram per cubic meter
-- = Not applicable*Unclassified (EPA/federal definitions): Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for that pollutant.
Attainment (EPA/federal definitions): Any area that meets the national primary or secondary ambient air quality standard for that pollutant. (CA definition): State standard was no exceeded during a 3-year period.
Non-Attainment (EPA/federal definitions): Any area that does not meet, or contributes to an area that does not meet the national primary or secondary ambient air quality standard for that pollutant. (CA definitions): State standard was exceeded at least once during a 3-year period.
Source: San Luis Obispo APCD 2013a.

3.3.2.5 Emissions in the Vicinity of the Project Site

The Project site is undeveloped, consisting primarily of agricultural uses such as cultivated farmland, with production of both dryland and irrigated field crops as well as grassland sometimes used for livestock grazing. Ongoing cultivation of irrigated farmland generates fugitive dust through tilling, planting, harvesting, and associated emissions from use of mobile farm equipment. Depending on cultivation practices, fallow or retired land can continue to produce fugitive dust emissions unless cover crops or grassland is left in place. Agricultural operations on irrigated farmlands also produce combustion emissions through the use of fossil fuel-powered equipment and vehicles during activities such as planting, harvesting, weeding, and maintenance. Fallowed land may also be subject to some maintenance activities that utilize fuel-powered equipment, but produces less combustion emissions than cultivated land. Existing agricultural operations on the Project site produce ongoing fugitive dust and combustion emissions, but detailed information on the frequency of cultivation and the average annual acreage of exposed soils compared to fallow land is not available.

Activities within the Project site vicinity that contribute to existing emissions in the South Central Coast Air Basin are primarily associated with motor vehicles. The air monitoring station located nearest to the Project site is the San Luis Obispo – Higuera Street station, located at 3220 South Higuera Street, about 1.2 miles from the Project site. This station measures O_3, $PM_{2.5}$, and PM_{10}, and has been active since 2005. Table 3.3-2 summarizes the annual air quality emissions data for the local airshed between the years 2012 to 2014, with values exceeding federal standards shown in bold, and those exceeding state emissions underlined. The number of exceedance days for each pollutant are also shown. This table shows the general air quality trends of the area for pollutants measured near the Project site.

Table 3.3-2. Ambient Air Quality Data at San Luis Obispo – Higuera Street Station

	O_3 ppb			PM_{10} µg/m^3	$PM_{2.5}$ µg/m^3		
	Worst 1-Hour	Worst 8-Hour	O_3 Exceedance Days 1-Hour/8-Hour	Worst 24-Hour	Exceedance Days	Worst 24-Hour	Exceedance Days
2012	70	56	0/0	51	1	15.4	0
2013	67	61	0/0	70	1	19.5	0
2014	80	**74**	0/1	41	0	15.6	0

Notes: ppb = parts per billion, µg/m3 = micrograms per cubic meter, bolded values have exceeded federal emissions standards, underlined values have exceeded state emissions standards.
Source: San Luis Obispo County APCD 2012b, 2013b, 2014.

3.3.3 Regulatory Setting

3.3.3.1 Federal

Clean Air Act

The Federal Clean Air Act (FCAA) was enacted in 1970 and amended in 1977 and 1990, and was the first comprehensive federal law to regulate air emissions from stationary and mobile sources. Among other things, the law authorizes the EPA to establish national ambient air quality standards (NAAQS). The NAAQS help to ensure basic health and environmental protection from air pollution. The FCAA also gives the EPA authority to limit emissions of air pollutants coming from sources like chemical plants, utilities, and steel mills.

U.S. Environmental Protection Agency

The EPA is the federal agency responsible for enforcing the FCAA of 1970 and its amendments of 1977 and 1990. The EPA has established primary and secondary NAAQS for O_3, CO, NO_x, SO_x, PM_{10}, and Pb, as shown in Table 3.3-1. The EPA also maintains jurisdiction over emissions sources outside state waters (outer continental shelf), and establishes various emissions standards for vehicles sold in states other than California.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP.

The FCAA allows states to adopt ambient air quality standards and other regulations, provided they are at least as stringent as federal standards. The California Ambient Air Quality Standards (CAAQS) were established within the California Clean Air Act (CCAA) of 1988 for criteria pollutants and additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles (see Table 3.3-1). The CCAA requires each Air Pollution Control District (APCD) in California to adopt strategies for achieving the NAAQS and CAAQS by the earliest practicable date. The California Air Resources Board (CARB) is responsible for the control of vehicle emission sources, while the local APCD is responsible for enforcing standards and regulating stationary sources.

3.3.3.2 State

California Clean Air Act

The CCAA requires all areas of the state to achieve and maintain the CAAQS by the earliest practicable date. The CAAQS includes more stringent standards than the NAAQS.

California Air Resources Board

CARB, a part of the California EPA, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets CAAQS, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hair spray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In April 2005, CARB issued a guidance document on air quality and land use, "Air Quality and Land Use Handbook: A Community Health Perspective", which recommends that sensitive land uses not be located within 500 feet of a freeway or other "high traffic roadway" and that a site-specific health risk assessment be performed as a way to more accurately evaluate the risk. "High Traffic Roadways" are defined as urban roadways with 100,000 vehicles per day or more, or rural roads with 50,000 or more vehicles per day. In traffic-related studies, the additional non-cancer health risk attributable to proximity to high-volume roadways was seen within 1,000 feet and was strongest within 300 feet. California freeway studies show about a 70 percent drop-off in particulate pollution levels at 500 feet. The nearest highway or High Traffic Roadway is State Highway 101 which is 2,500 feet from the Project site.

Assembly Bill (AB) 1493

AB 1493 requires the CARB to define standards for cars and light trucks manufactured after 2009 and is projected to result in an 18 percent reduction in emissions.

Executive Order S-3-05

On June 1, 2005, Governor Schwarzenegger announced the following GHG emission reduction targets:

- By 2010, reduce GHG emissions to 2000 levels.

- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill (AB) 32

The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include CO_2, CH_4, NO_x, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. CARB is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

CARB approved the 1990 GHG emissions level of 427 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) on December 6, 2007 (CARB 2007). Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$.

The CARB's Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the state's emissions to 1990 levels by the year 2020 (CARB 2008). The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;

- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. "Capped" strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion of these emissions within the cap-and trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. "Uncapped" strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions.[1]

The Scoping Plan was first approved by the Board in 2008 and was recently updated and approved by the Board in May 2014. The CARB has approved new emission inventories for GHGs that result in fewer reductions being required to show consistency with AB 32 targets. A reduction of 21.7 percent would now allow California to achieve 1990 emission levels by 2020.

Executive Order S-01-07

Enacted on January 18, 2007, this Order requires that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, and that a low carbon fuel standard for transportation fuels be established for California.

Senate Bill (SB) 97 and the California Environmental Quality Act (CEQA) Guidelines Update

Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states "(a) On or before July 1, 2009, the Office of Planning and Research shall

[1] On March 17, 2011, the San Francisco Superior Court issued a final decision in *Association of Irritated Residents v. California Air Resources Board* (Case No. CPF-09-509562). While the Court upheld the validity of the CARB Scoping Plan for the implementation of AB 32, the Court enjoined CARB from further rulemaking under AB 32 until ARB amends its CEQA environmental review of the Scoping Plan to address the flaws identified by the Court. On May 23, 2011, CARB filed an appeal. On June 24, 2011, the Court of Appeal granted ARB's petition staying the trail court's order pending consideration of the appeal. In the interest of informed decision-making, on June 13, 2011, CARB released the expanded alternatives analysis in a draft Supplement to the AB 32 Scoping Plan Functional Equivalent Document. The CARB Board approved the Scoping Plan and the CEQA document on August 24, 2011.

prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)." Section 21097 was also added to the Public Resources Code. It provided CEQA protection until January 1, 2010 for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006, in stating that the failure to analyze adequately the effects of GHGs would not violate CEQA.

On April 13, 2009, the Office of Planning and Research submitted to the Secretary for Natural Resources its recommended amendments to the CEQA Guidelines for addressing GHG emissions. On July 3, 2009, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting these amendments pursuant to Public Resources Code section 21083.05. Following a 55-day public comment period and two public hearings, the Natural Resources Agency proposed revisions to the text of the proposed Guidelines amendments. The Natural Resources Agency transmitted the adopted amendments and the entire rulemaking file to the Office of Administrative Law on December 31, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010.

The CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

CEQA Guidelines Section 15064.4, was added to assist agencies in determining the significance of GHG emissions. The new section allows agencies the discretion to determine whether a quantitative or qualitative analysis is best for a particular project. However, little guidance is offered on the crucial next step in this assessment process—how to determine whether the project's estimated GHG emissions are significant or cumulatively considerable.

Also amended were CEQA Guidelines Sections 15126.4 and 15130, which address mitigation measures and cumulative impacts respectively. GHG mitigation measures are

referenced in general terms, but no specific measures are championed. The revision to the cumulative impact discussion requirement (Section 15130) simply directs agencies to analyze GHG emissions in an EIR when a project's incremental contribution of emissions may be cumulatively considerable; however, it does not answer the question of when emissions are cumulatively considerable.

Section 15183.5 permits programmatic GHG analysis and later project-specific tiering, as well as the preparation of GHG Reduction Plans. Compliance with such plans can support a determination that a project's cumulative effect is not cumulatively considerable, according to proposed Section 15183.5(b). In addition, the amendments revised Appendix F of the CEQA Guidelines, which focuses on Energy Conservation. The sample environmental checklist in Appendix G was amended to include GHG questions.

SB 375

Passing the Senate on August 30, 2008, SB 375 was signed by the Governor on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies. The CARB has adopted emissions reductions targets for per capita light duty vehicles from 2005 levels of 8 percent by 2020 and 8 percent by 2035.

SB 375, Section 21159.28 states that CEQA findings determinations for certain projects are not required to reference, describe, or discuss: (1) growth inducing impacts or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network if the project:

1. Is in an area with an approved sustainable community strategy or an alternative planning strategy that the CARB accepts as achieving the GHG emission reduction targets.

2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies).

3. Incorporates the mitigation measures required by an applicable prior environmental document.

Executive Order S-13-08

Executive Order S-13-08 indicates that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy (California Natural Resources Agency 2009) was adopted, which is the " ...first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order B-30-15

Executive Order B-30-15 establishes a California greenhouse gas (GHG) reduction target of 40 percent below 1990 levels by 2030. California is on track to meet or exceed the current target of reducing GHG emissions to 1990 levels by 2020, as established in AB 32. California's new emissions reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent under 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius - the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels.

3.3.3.3 Local

County of San Luis Obispo Clean Air Plan

The County APCD adopted the CAP in January 1992; the Plan was updated in 1998, and again in 2001. The Clean Air Plan is a comprehensive planning document designed to reduce emissions from traditional industrial and commercial sources, as well as from motor vehicle use. The purpose of the County's Clean Air Plan is to address the attainment and maintenance of state and federal ambient air quality standards by following a comprehensive set of emission control measures within the Plan.

City of San Luis Obispo Climate Action Plan

The Climate Action Plan is a strategic document, rooted in the idea that effective global solutions to climate change will largely be the result of collective action of local communities and governments. The Climate Action Plan enables the City to maintain local

control of implementing state direction (AB 32 – the California Global Warming Solutions Act) to reduce GHG emissions to 1990 levels by 2020. GHG reduction strategies align with existing General Plan policies, and adoption of a Climate Action Plan is an Other Important Objective in the City's 2011-13 Financial Plan. Having an adopted Climate Action Plan will also allow the City to streamline the CEQA review process of certain development projects. The plan identifies strategies to guide the development and implementation of GHG reduction measures in the City and quantifies the emissions reductions that result from these strategies. In addition to addressing strategies to reduce GHG emissions, the Climate Action Plan includes adaptation measures to improve the City's ability to address the potential impacts that climate change may have on the City and its residents. The overall benefit of the Climate Action Plan is larger than reducing GHG emissions; it is quality of life improvements for the community, potential energy cost savings for residents and businesses, and protection of the environment for future generations.

The San Luis Obispo Climate Action Plan was adopted by Resolution No. 10388 in 2012. Some strategies will be implemented through ordinance, while others will require development of educational programs or prioritizing resources for infrastructure. The Climate Action Plan proposes strategies to reduce GHG emissions from community-wide activities and government operations. Community-wide activities are broken down into six focus areas: buildings, renewable energy, transportation and land use, water, solid waste, and parks and open space. Corresponding goals include: energy-efficient buildings, clean and renewable energy sources, improved transportation options, reduced water consumption, reduced waste, and maintenance and growth of the urban forest.

The Climate Action Plan is designed as a Qualified GHG Reduction Plan, consistent with CEQA Guidelines Section 15183.5(b). This allows for the streamlining of the analysis of GHGs on a project level by using a programmatic GHG reduction plan meeting certain criteria. Project-specific analysis of GHG emissions is required if GHG emissions from a project would be cumulatively considerable notwithstanding compliance with the Climate Action Plan. This EIR includes an analysis of the Project's conformance with the City's adopted Climate Action Plan.

3.3.4 Environmental Impact Analysis

3.3.4.1 Thresholds of Significance

Air Quality CEQA Thresholds

Significance criteria for evaluating impacts on air quality emissions associated with the Project site are based on Appendix G of the 2016 CEQA Guidelines. Implementation of the Project would have a significant impact on air quality and GHG emissions if the Project would result in any of the following:

a) Conflict with or obstruct implementation of the County APCD's adopted Clean Air Plan;
b) Violate any air quality standard or contribute substantially to an existing 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 O_3 precursors);
d) Expose sensitive receptors to substantial pollutant concentrations; or
e) Create objectionable odors affecting a substantial number of people.

The following Appendix G criterion is not considered relevant to the Project based upon the Project plans; therefore, it will not be evaluated further in this EIR:

e) Creation of objectionable odors.

The Project would not involve the development of the types of land uses typically associated with odor issues, such as wastewater treatment plants, landfills, composting facilities, refineries, or chemical plants. Nor would the Project locate sensitive receptors within proximity of these types of odor-producing sources. Therefore, the following analysis relates to the Project's potential to result in a significant air quality impact based on the other four significance criteria.

APCD Significance Criteria

Significance Criteria for Construction-Related Emissions

Short-term construction emission thresholds for the County APCD (Table 3.3-3), as stated in the APCD's CEQA Air Quality Handbook (2012), have been set by the APCD as follows

below. Due to the length of the Project's construction phases, quarterly thresholds are used in this analysis.

ROG and NO_x Emissions

- Daily: For projects expected to be completed in less than one quarter (90 days), exceedance of the 137 pounds per day (lbs/day) threshold requires Standard Mitigation Measures;
- Quarterly – Tier 1: For construction projects lasting more than one quarter, exceedance of the 2.5 tons per quarter (ton/qtr) threshold requires Standard Mitigation Measures and Best Available Control Technology for construction equipment (BACT). If implementation of the Standard Mitigation and BACT measures cannot bring the project below the threshold, offsite mitigation may be necessary; and
- Quarterly – Tier 2: For construction projects lasting more than one quarter, exceedance of the 6.3 ton/qtr threshold requires Standard Mitigation Measures, BACT, implementation of a Construction Activity Management Plan (CAMP), and offsite mitigation.

Diesel Particulate Matter (DPM) Emissions

- Daily: For projects expected to be completed in less than one quarter, exceedance of the 7 lbs/day threshold requires Standard Mitigation Measures;
- Quarterly – Tier 1: For construction projects lasting more than one quarter, exceedance of the 0.13 ton/qtr threshold requires Standard Mitigation Measures, and BACT for construction equipment; and
- Quarterly – Tier 2: For construction projects lasting more than one quarter, exceedance of the 0.32 ton/qtr threshold requires Standard Mitigation Measures, BACT, implementation of a CAMP, and offsite mitigation.

Fugitive Particulate Matter (PM_{10}), Dust Emissions

- Quarterly: Exceedance of the 2.5 ton/qtr threshold requires Fugitive PM_{10} Mitigation Measures and may require the implementation of a CAMP.

Table 3.3-3. Thresholds of Significance for Construction Operations

Pollutant of Concern	Threshold		
	Tons/Qtr Tier 1	Tons/Qtr Tier 2	Lbs/Day
ROG + NO_x (combined)	2.5	6.3	137
Diesel Particulate Matter (DPM)	0.13	0.32	7
PM_{10}	-	2.5	-

Source: San Luis Obispo APCD 2012a.

If construction-related emissions of the Project equal or exceed any of the thresholds stated above, mitigation of construction activities and implementation of BACT would be required.

Significance Criteria for Operational Emissions

Long-term operational emission thresholds for the County, as stated in the APCD's CEQA Air Quality Handbook (2012), have been set by the APCD as follows (see Table 3.3-4):

Ozone Precursor (ROG + NO_x) Emissions

- Projects which emit 25 lbs/day or more of ROG and NO_x should be submitted to the APCD for review. Onsite mitigation is recommended. If feasible mitigation is incorporated and emissions are still greater than 25 lbs/day, then an EIR should be prepared.
- Projects which emit 25 tons/year or more of ROG and NO_x require the preparation of an EIR.

Diesel Particulate Matter (DPM) Emissions

- Projects that emit over 1.25 lbs/day of DPM require implementation of onsite BACT measures. If sensitive receptors are within 1,000 feet of the project site, a Health Risk Assessment (HRA) may also be required.

Fugitive Particulate Matter (PM_{10}) Dust Emissions

- Projects that emit over 25 lbs/day or 25 tons/year of PM_{10} require implementation of permanent dust control measures to mitigate emissions or provide suitable offsite mitigation approved by the APCD.

Table 3.3-4. Thresholds of Significance for Operational Operations

Pollutant of Concern	Threshold	
	Daily	Annual
ROG + NO_x (combined)	25 lbs/day	25 tons/year
Diesel Particulate Matter (DPM)	1.25 lbs/day	-
PM_{10}	25 lbs/day	25 tons/year

Source: San Luis Obispo APCD 2012a.

Clean Air Plan

As recommended by APCD, the most appropriate standard for assessing the significance of potential air quality impacts is the preparation of a consistency analysis where the project is evaluated against the land use goals, policies, and population projects contained in the current Clean Air Plan. The rationale for requiring the preparation of a consistency analysis is to ensure the attainment projects developed by the APCD are met and maintained. The APCD's CEQA Air Quality Handbook recommends evaluation of the following questions:

- Are the population projections used in the plan equal to or less than those used in the most recent CAP for the same area;
- Is the rate of increase in vehicle trips and miles traveled less than or equal to the rate of population growth for the same area; and
- Have all applicable land use and transportation control measures from the most recent version of the CAP been included in the plan to the maximum extent feasible?

GHGs and Climate Change

Pursuant to the requirements of SB 97, the California Natural Resources Agency adopted amendments to the CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions in March 2010. These guidelines are used in evaluating the cumulative significance of GHG emissions from the Project. According to the adopted CEQA Guidelines, impacts related to GHG emissions from the Project would be significant if the Project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

The APCD has adopted recommended GHG significance thresholds. These thresholds are based on AB 32 GHG emission reduction goals, which take into consideration the emission reduction strategies outlined in CARB's Scoping Plan. The GHG significance thresholds include one qualitative threshold and two quantitative thresholds options for evaluation of operational GHG emissions. The qualitative threshold option is based on a consistency analysis in comparison to a Qualified GHG Reduction Strategy, or equitably similar adopted policies, ordinances and programs. If a project complies with a Qualified GHG Reduction Strategy that is specifically applicable to the project, then the project would be

considered less than significant. In accordance with APCD significance thresholds, the project would be considered to result in a significant impact if it does not comply with a Qualified GHG Reduction Strategy, in this case the one included in the City's adopted Climate Action Plan. The City's Climate Action Plan was developed to be consistent with CEQA Guidelines Section 15183.5(b) to mitigate emissions and climate change impacts and will therefore serve as a Qualified GHG Reduction Strategy for the City.

Construction GHG Emissions Thresholds

GHGs from construction projects must be quantified and amortized over the life of the project. The amortized construction emissions must be added to the annual average operational emissions and then compared to the operational thresholds in Section 3.5.1 of the APCD's CEQA Air Quality Handbook—Significance Thresholds for Project-Level Operational Emissions. To amortize the emissions over the life of the project, calculate the total GHG emissions for the construction activities, divide it by the project life (i.e., 50 years for residential projects and 25 years for commercial projects) then add that number to the annual operational phase GHG emissions.

Operational GHG Emissions Thresholds

For land use development projects, the threshold is compliance with a qualified GHG Reduction Strategy, annual emissions less than 1,150 metric tons per year (MT/yr) of CO2e, or 4.9 MT CO2e/service population (SP)/yr (residents + employees). Lead agencies may use any of the three options above to determine the significance of a project's GHG emission impact to a level of certainty.

3.3.4.2 Impact Assessment Methodology

Criteria Pollutants

This analysis focuses on the air quality impacts that could occur from air pollutant emissions associated with the construction and operation of the Project, including impacts from Project-related traffic volumes. Project-related construction and operational emissions were estimated using CalEEMod Version 2013.2.2 computer model, and then compared to the thresholds of significance defined above. See Appendix H for CalEEMod worksheet results.

The air quality analysis and CalEEMod estimates follow the guidelines and methodologies recommended in the APCD's CEQA Air Quality Handbook for the County (2012). Construction emissions from heavy-duty diesel exhaust were calculated using the APCD's

CEQA handbook and Project-specific equipment details, whenever possible. Emissions factors for calculating emissions from construction equipment were provided by the APCD (San Luis Obispo APCD 2012a). Fugitive dust emissions from ground disturbance and import and stockpile activities were calculated using APCD emission factors (San Luis Obispo APCD 2012a). Potential impacts were assessed by modeling the estimated daily emissions generated by Project construction and Project operations using the CalEEMod land use emissions model version 2013.2 (see Appendix H for CalEEMod estimates). In accordance with APCD recommendations, an overall qualitative analysis was conducted to determine if emissions resulting from implementation of the Project would be consistent with the emissions projects in the most recent version of the Clean Air Plan.

Construction Air Quality Emissions

Construction emissions are estimated using CalEEMod, which estimates emissions from each phase of Project construction, including excavation and site preparation, building construction, and architectural coatings. Emission estimates are based on the anticipated types and amount of equipment that would be used in Project construction, the amount of demolition debris and excavated soil to be removed, the size and type of new construction, anticipated construction schedule, and the vehicle trips generated by construction workers.

Project construction would temporarily increase diesel emissions and would generate particulate matter (dust). Construction equipment within the Project site that would generate ROGs and NO_x emissions could include graders, excavators, dump trucks, cranes, and bulldozers. It is assumed that all construction equipment used would be diesel powered. The precise construction timeline for the Project depends on the timing of entitlements and permit processing. For the purposes of studying the worst-case emissions for this EIR, construction activity for the proposed Project is assumed to occur over a 10-year period beginning in 2020 with full buildout and last occupancy and operation in late 2030.

Operational Air Quality Emissions

Operational emissions associated with the Project are estimated using the CalEEMod Version 2013.2.2 computer model for mobile source, area, and energy emissions. Mobile emissions would be generated by the motor vehicle trips to and from the 720 residential units and neighborhood commercial uses; these are calculated based on the Project's Transportation Impact Study (TIS) trip generation and other default traffic assumptions (see Appendix P). Area source emissions would be generated by consumer products, architectural coatings, and landscape maintenance equipment. Energy source emissions are

generated by emissions resulting from electricity and natural gas consumption for space and water heating. To determine if an air quality impact would occur, the increase in emissions was compared with the APCD's operational thresholds. The default emissions were used for area and energy sources with consideration of APCD rules and regulations that would be required of the Project related to the Project's operations.

GHG and Climate Change

Consistent with CEQA and the APCD's recommendation, the significance of the Project's GHG emissions and resulting global climate change impacts are assessed against the threshold of the City's adopted Qualified GHG Reduction Strategy in the City Climate Action Plan.

GHG emissions associated with the construction and operation of the Project were estimated using CalEEMod. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

Construction GHG Emissions

The construction GHG analysis takes into account the Project's anticipated 10-year construction schedule as well as construction equipment. Construction-related GHG emissions are amortized over 25 years per APCD methodology outlined in the CEQA Air Quality Handbook.

Operational GHG Emissions

GHG operational emissions were estimated using CalEEMod. The following activities are typically associated with the operation of residential and retail land uses that would contribute to the generation of GHG emissions:

Vehicular trips. Vehicle trips generated by residential and neighborhood commercial uses within the Project site would result in GHG emissions through combustion of fossil fuels.

Onsite use of natural gas and other fuels. Natural gas would be used by the proposed mixed-use development to heat the residential and commercial spaces. This would result in a direct release of GHGs. Estimated emissions from the combustion of natural gas and other fuels is based on the number of dwelling units and square footage of the commercial space using the consumption rates as presented in the CalEEMod modeling output.

Electricity use. Electricity is generated by a combination of methods, which include combustion of fossil fuels. Use of electricity for operation of the Project would contribute to the indirect emissions associated with electricity production. Estimated emissions from the consumption of electricity are based on the number of dwelling units in the residential portion of the building and square footage of commercial space, using the standard electrical consumption rates.

Water use and wastewater generation. The amount of water used and wastewater generated by a Project has indirect GHG emissions as a result of the energy used to supply, distribute, and treat water and wastewater. In addition to the indirect GHG emissions associated with energy use, wastewater treatment can directly emit both methane and nitrous oxide depending on the treatment method. Estimated emissions from the consumption of potable water and the generation of wastewater is based on the number of dwelling units in the residential portion of the building and square footage of commercial space and water consumption rates as presented in the CalEEMod modeling output.

Solid waste. Emissions calculated for solid waste reflect the indirect GHG emissions associate with waste that is disposed of at a landfill. GHG emissions associated with the decomposition of waste are quantified based on amount of degradable organic carbon generated by the total dwelling units and commercial square footage proposed by the Project. CO_2 emissions are also quantified based on associated methane, if applicable.

3.3.4.3 Project Impacts and Mitigation Measures

This section discusses the potential air quality and GHG emissions impacts associated with the construction and operation of the Project. Air quality and GHG emissions impacts associated with the Project are summarized in Table 3.3-5 below.

Table 3.3-5. Summary of Project Impacts

Air Quality Impacts	Mitigation Measures	Residual Significance
AQ-1. The Project would result in potentially significant construction-related air quality impacts from dust and air pollutant emissions generated by grading and construction equipment operation.	MM AQ-1a MM AQ-1b MM AQ-1c	Significant and Unavoidable
AQ-2. The Project would result in significant long-term operation-related air quality impacts generated by area, energy, and mobile emissions.	MM AQ-2a MM AQ-2b	Significant and Unavoidable
AQ-3. Release of toxic diesel emissions during initial construction and long-term operation of the Project could expose nearby sensitive receptors to such emissions.	None required	Less than Significant
AQ-4. Construction and operation of the Project would result in impacts to global climate change from the emissions of GHGs and would be potentially inconsistent with the City's Climate Action Plan.	MM AQ-2a MM AQ-2b MM TRANS-2d MM TRANS-2f MM TRANS-10a MM TRANS-10b MM TRANS-10c MM TRANS-11 MM TRANS-12	Significant but Mitigable
AQ-5. The Project is potentially inconsistent with the County of San Luis Obispo APCD's 2001 Clean Air Plan.	MM AQ-2b MM TRANS-12	Significant and Unavoidable

Impact AQ-1 The Project would result in potentially significant construction-related air quality impacts from dust and air pollutant emissions generated by grading and construction equipment operation (Significant and Unavoidable).

Project construction would generate temporary construction air pollutant emissions, particularly construction emissions of ROG and NO_x during the architectural coating phase, and fugitive dust (PM_{10} and $PM_{2.5}$) associated with grading and exhaust from heavy construction vehicles. Within each phase, construction would consist of site preparation, grading, building construction, and paving. In addition, during building construction, ROGs and other emissions would be released during the application and drying of paints and architectural coatings.

Site preparation and grading would involve the greatest amount of heavy equipment and the greatest generation of fugitive dust given the large amount of grading activities associated with Project construction. Phases 1 and 2 would also include grading of areas

for Phase 3 and Phase 4 to borrow soil needed for fill on Phases 1 and 2. Phase 4 would involve grading within areas of Phase 5 to borrow soil needed for fill in Phase 4. See Table 2-7 for details on construction phases and approximate grading amounts. Construction pollutant emissions, such as NO_x and PM_{10}, would be generated through the use of heavy-duty construction equipment and through vehicle trips generated by construction workers traveling to and from the Project site. The majority of the Project's ROG emissions would be generated from the application of architecture coatings, including paints, stains, and other finishes that off-gas ROGs during the drying/curing process.

Emissions were calculated based on an equipment list and composite emission factors. Each phase of the Project construction occurs for more than 90 days, totaling 10 years of construction. Therefore, APCD quarterly thresholds rather than daily thresholds were used to determine the significance level of construction emissions. Maximum short-term emission estimates from construction of the Project are provided in Table 3.3-6.

Table 3.3-6. Maximum Short-term Construction Emissions (Unmitigated)

	ROG	NO_x	ROG + NOx	CO	SO_2	PM_{10}	DPM (fugitive $PM_{2.5}$)	CO_2e
Overall Construction (Maximum Daily Emission)								
(lbs/day)	827.93	81.07	909	160.25	0.29	36.95	14.20	23,302
(tons/qtr) includes Fugitive Dust	2.76	2.29	5.05	3.09	<0.01	0.55	0.24	586
APCD Daily Thresholds (lbs/day)	--	--	137	--	--	--	7	--
APCD Quarterly Thresholds – Tier 1 (tons/qtr)	--	--	2.5			2.5	0.13	--
Above Threshold?	--	--	**YES**	--	--	NO	**YES**	--
APCD Quarterly Thresholds – Tier 2 (tons/qtr)	--	--	6.3	--	--	--	0.32	--
Above Threshold?	--	--	NO	--	--	NO	NO	--

See Appendix H for CalEEMod worksheets.

PM_{10} generation associated with fugitive dust from construction activities was calculated in CalEEMod using the methodology described in the County APCD 2012 CEQA Air Quality Handbook. Detailed construction emissions and calculation assumptions are provided in Appendix H.

Modeled emissions for the Project were found to be above the APCD Tier 1 Quarterly thresholds for construction emissions of ROG and NO_x, and for construction emissions of Diesel Particulate Matter (DPM), but below the APCD Tier 2 Quarterly thresholds. Further, APCD requires any project with a grading area greater than 4.0 acres to apply mitigation measures for PM_{10} (primarily from fugitive dust); since the Project would disturb the majority of the site, dust control measures would need to be implemented. Since the Tier 1 Quarterly construction significance threshold of 2.5 tons per quarter of ROG + NOx and 0.13 tons per quarter DPM is exceeded, implementing standard mitigation measures for construction equipment and applying BACT for construction equipment is required. APCD-recommended conditions also include the implementation of a Construction Activity Management Plan (CAMP), would minimize construction-related air quality impacts and would reduce both ROG and NO_x emissions and DPM emissions below the APCD quarterly thresholds, making impacts ***significant and unavoidable*** (see Table 3.3-7).

Table 3.3-7. Maximum Short-term Construction Emissions (Mitigated)

	ROG	NO_x	ROG + NOx	CO	SO_2	PM_{10}	DPM (fugitive $PM_{2.5}$)	CO_2e
Overall Construction (Maximum Daily Emission)								
(lbs/day)	827.87	77.01	904.88	151.48	0.29	25.88	8.74	23,302
(tons/qtr) includes Fugitive Dust	2.75	2.14	4.89	3.15	<0.01	0.55	0.14	586
APCD Daily Thresholds (lbs/day)	--	--	137	--	--	--	7	--
APCD Quarterly Thresholds – Tier 1 (tons/qtr)	--	--	2.5			2.5	0.13	--
Above Threshold?	--	--	**YES**	--	--	NO	**YES**	--
APCD Quarterly Thresholds – Tier 2 (tons/qtr)	--	--	6.3	--	--	--	0.32	--
Above Threshold?	--	--	NO	--	--	NO	NO	--

See Appendix H for CalEEMod worksheets.

Recommended Mitigation Measure

MM AQ-1a *A Construction Activity Management Plan (CAMP) shall be included as part of Project grading and building plans and shall be submitted to the APCD for review and to the City for approval prior to the start of construction. In addition, the contractor or builder shall designate 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 include holidays and weekend periods when work may not be in progress. The name and telephone of such persons shall be provided to the APCD prior to land use clearance for map recordation and grading. The plan shall include but not be limited to the following elements:

1. *A Dust Control Management Plan that encompasses the following dust control measures:*
    - *Reduce the amount of disturbed area where possible;*
    - *Water trucks or sprinkler trucks shall be used during construction to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would require twice-daily applications. All dirt stock pile areas should be sprayed daily as needed. Increased watering frequency would be required when wind speeds exceed 15 miles per hour (mph). Reclaimed water (non-potable) shall be used when possible;*
    - *All dirt stock-pile areas shall be sprayed daily as needed;*
    - *Permanent dust control measures identified in the approved Project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities;*
    - *Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading shall be sown with a fast germinating native grass seed and watered until vegetation is established;*
    - *All disturbed soil areas not subject to revegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD;*
    - *All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used;*
    - *Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;*
    - *All trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least two feet of freeboard in accordance with California Vehicle Code Section 23114;*

- *Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site;*
- *Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible;*
- *All of these fugitive dust mitigation measures shall be shown on grading and building plans; and*
- *The contractor or builder shall designate a person or persons to monitor the fugitive dust control emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20 percent opacity, and to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the APCD Compliance Division prior to the start of any grading, earthwork or demolition.*

2. *Implementation of the following BACT for diesel-fueled construction equipment, where feasible. The BACT measures shall include:*
    - *Repowering equipment with the cleanest engines available; and*
    - *Installing California Verified Diesel Emission Control Strategies.*
3. *Implementation of the following standard air quality measures to minimize diesel emissions*
    - *Maintain all construction equipment in proper tune according to manufacturer's specifications;*
    - *Fuel all offroad and portable diesel powered equipment with CARB-certified motor vehicle diesel fuel (non-taxed version suitable for use off-road).*
    - *Use diesel construction equipment meeting CARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State off-Road Regulation;*
    - *Use on-road heavy-duty trucks that meet the CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines and comply with the State On-Road Regulation;*
    - *Construction or trucking companies with fleets that do not have engines in their fleet that meet the engine standards identified in the above two measures (e.g. captive or NOx exempt area fleets) may be eligible by proving alternative compliance;*

- *On- and off-road diesel equipment shall not be allowed to idle for more than five minutes. Signs shall be posted in the designated queuing areas to remind drivers and operators of the five-minute idling limit;*
- *Diesel idling within 1,000 feet of sensitive receptors in not permitted;*
- *Staging and queing areas shall not be loated within 1,000 feet of sensitive receptors;*
- *Electrify equipment when feasible;*
- *Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and,*
- *Use alternatively fueled construction equipment onsite where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.*

4. *Tabulation of on- and off-road construction equipment (age, horse-power, and miles and/or hours of operation);*
5. *Schedule construction truck trips during non-peak hours (as determined by the Public Works Director) to reduce peak hour emissions;*
6. *Limit the length of the construction work-day period; and*
7. *Phase construction activities, if appropriate.*

Plan Requirements and Timing. The CAMP shall be submitted to the APCD for review and to the City for approval prior to acceptance of the final Development Plan and recordation of the final VTM. All required fugitive dust and emissions control measures shall be noted on all on grading and building plans and all construction activities shall adhere to measures throughout all grading, hauling, and construction activities. The contractor or builder shall provide City monitoring staff and the APCD with the name and contact information for an assigned onsite dust and emissions control monitor(s) who has the responsibility to: a) assure all dust control requirements are complied with including those covering weekends and holidays, b) order increased watering as necessary to prevent transport of dust offsite, c) attend the pre-construction meeting. The dust monitor shall be designated prior to grading permit issuance for each Project Phase. The dust control components apply from the beginning of any grading or construction throughout all development activities until Final Building Inspection Clearance is issued and landscaping is successfully installed.

Monitoring. City staff shall ensure measures are depicted on the CAMP and all submitted grading and construction plans for each Project phase. The dust and emissions control monitor shall be responsible for compliance during construction activities. City grading and building inspectors shall spot check and ensure compliance onsite. APCD inspectors would be responsible for conducting periodic site visits to ensure compliance and respond to nuisance complaints.

Required Mitigation Measures

MM AQ-1b *To reduce ROG and NO_x levels during the architectural coating phase, low or no VOC-emission paint shall be used with levels of 50 g/L or less, such as Benjamin Moore Natura Paint (Odorless, Zero VOC Paint).*

Plan Requirements and Timing. Measure shall be indicated on all building and construction plans submitted to City prior to the issuance of building permits for each Project Phase.

Monitoring. City staff shall ensure measures are depicted on all submitted building and construction plans. City building inspectors shall ensure compliance.

MM AQ-1c *An offsite mitigation strategy shall be developed and agreed upon by the developer, City, and APCD at least three months prior to the issuance of grading permits. The Applicant shall provide this funding at least two months prior to the start of construction to help facilitate emission offsets that are as real-time as possible. Offsite mitigation strategies shall include one or more of the following:*

- *Replace/repower San Luis Obispo Regional Transit Authority (SLORTA) transit buses;*
- *Purchase VDECs for transit buses; and*
- *Fund expansion of existing SLORTA transit services.*

Plan Requirements and Timing. The Applicant shall prepare and submit the offsite mitigation strategy to the APCD for review and to the City for approval at least three months prior to the issuance of grading permits for Phase 1 construction. The Applicant shall provide funding to the APCD at least two months prior to the start of construction.

Monitoring. The APCD and City staff shall ensure offsite mitigation measures are appropriate. The APCD shall ensure the receipt of funding.

Residual Impact

The projected construction emissions for both ROG and NO_x emissions and DPM emissions after implementation of mitigation (see Table 3.3-7) were found to be above the established APCD Tier 1 Quarterly thresholds; therefore, residual impacts are significant and unavoidable.

Impact AQ-2 The Project would result in significant long-term operation-related air quality impacts generated by area, energy, and mobile emissions (Significant and Unavoidable).

Operational emissions from the Project include those generated by vehicle trips (mobile emissions), the use of natural gas (energy emissions), use of consumer products and appliances, and the use of landscaping maintenance equipment (area source emissions). Maximum daily operational emissions of the Project were estimated using CalEEMod.

Projected emissions for the Project were found to be above the established APCD daily thresholds for operational emissions of ROG + NO_x, PM_{10}, and DPM (see Table 3.3-8). Projects that emit more than 25 lbs/day of PM_{10} must implement permanent dust control measures to mitigate the emissions below the threshold or provide suitable offsite mitigation approved by the APCD. Projects that emit more than 1.25 lbs/day of DPM must implement onsite BACT measures. A Health Risk Assessment (HRA) may also be required for any sensitive receptors within 1,000 feet of the Project site (see Impact AQ-3). For unmitigated projects that result in emissions of 50 lbs/day or more of combined ROG and NO_x, the APCD CEQA Air Quality Handbook recommends that all feasible standard mitigation measures be implemented as part of the Project to ensure that impacts would be less than significant, based on a list included as Table 3-5 in that document. The list covers a large range of activities and would reduce impacts either through site design, transportation strategies, or increasing the energy efficiency of the Project. In many cases, adherence to the Project design guidelines would implement many of these measures. Even after the inclusion of these recommended measures as appropriate (see Table 3.3-10), impacts are still ***significant and unavoidable***.

Table 3.3-8. Maximum Long-term Operational Emissions (Unmitigated)

	ROG	NO_x	ROG + NOx	CO	SO_2	PM_{10}	DPM (fugitive $PM_{2.5}$)	CO_2e
Overall Operational (Maximum Daily Emission)								
Area (lbs/day)	64.23	0.68	64.91	59.42	0.0032	0.33	--	109
Energy (lbs/day)	0.57	4.83	5.40	2.06	0.0308	0.39	--	6,201
Mobile (lbs/day)	17.40	32.08	49.48	152.77	0.5255	37.32	9.81	38,258
Total (lbs/day)	82.19	37.60	119.79	214.24	0.5595	38.04	9.81	44,569
Threshold (lbs/day)	--	--	25	550	--	25	1.25	--
Threshold (tons/year)	--	--	25	--	--	25	--	--
Significant?	--	--	**YES**	NO	--	**YES**	**YES**	--

See Appendix H for CalEEMod worksheets.

Mitigation Measures

MM AQ-2a *The Applicant shall include the following:*

- *Water Conservation Strategy: The Applicant shall install fixtures with the EPA WaterSense Label, achieving 20 percent reduction indoor. The Project shall install drip, micro, or fixed spray irrigation on all plants other than turf, also including the EPA WaterSense Label, achieving 15 percent reduction in outdoor landscaping.*
- *Solid Waste: The Applicant shall institute recycling and composting services to achieve a 15 percent reduction in waste disposal, and use waste efficient landscaping.*
- *Fugitive Dust: The Applicant shall replace ground cover of at least 70 percent of area disturbed in accordance with CARB Rule 403.*

Plan Requirements and Timing. The Applicant shall indicate the above measures on the Development Plan and building plans prior to acceptance of the final Development Plan and recordation of the VTM.

Monitoring. City staff shall ensure measures are indicated on plans. City building inspectors shall ensure compliance after completion of each Phase.

MM AQ-2b *Consistent with standard mitigation measures set forth by the APCD, Projects generating more than 50 lbs/day of combined ROG + NO_x or PM_{10} shall implement all feasible measures within Table 3-5 of the Air Quality Handbook. The following mitigation measures shall apply to the Project.*

Table 3.3-9. Potentially Appropriate Mitigation Measures from APCD CEQA Air Quality Handbook

Measure #	Measure Type	Mitigation Measure	Pollutant Reduced[1]	Describe how Project will include this measure
1	Site design, Transportation	Improve job / housing balance opportunities within communities.	O, P, GHG	The Project would maintain and improve the jobs-housing balance by providing housing in accordance with the LUCE
2	Site design	Orient buildings toward streets with automobile parking in the rear to promote a pedestrian-friendly environment.	O, P, GHG	85% of the buildings will be oriented to the street or common open space without garages or automobile parking.
3	Site design	Provide a pedestrian-friendly and interconnected streetscape to make walking more convenient, comfortable and safe (including appropriate signalization and signage).	O, P, GHG	The Project will include buffered Class II bicycle lanes on Project collectors and Buckley Road, and an interconnected system of Class I bicycle trails through the site, from the east side of the site to the west side, and out to Higuera Street from the Project as indicated on Figure 2-5.
4	Site design	Provide good access to/from the development for pedestrians, bicyclists, and transit users.	O, P, GHG	Transit stops are located per the Short Term Transit Plan so that transit stops are provided within walking distance of all houses. Improvements will be made per the Bicycle Master Plan. Phase 1 of the Project will include a connection from the Project to a neighborhood shopping center via Earthwood Lane.

Table 3.3-9. Potentially Appropriate Mitigation Measures from APCD CEQA Air Quality Handbook (Continued)

Measure #	Measure Type	Mitigation Measure	Pollutant Reduced[1]	Describe how Project will include this measure
5	Site design	Incorporate outdoor electrical outlets to encourage the use of electric appliances and tools.	O, P, GHG	Outdoor electrical outlets are provided per city code and are optional on all houses.
6	Site design	Provide shade tree planting in parking lots to reduce evaporative emissions from parked vehicles. Design should provide 50% tree coverage within 10 years of construction using low ROG emitting, low maintenance native drought resistant trees.	O, P, GHG	Shade trees are provided as per City requirement.
7	Site design	Pave and maintain the roads and parking areas	P	The Project shall include this measure.
8	Site design	Driveway design standards (e.g., speed bumps, curved driveway) for self-enforcing of reduced speed limits for unpaved driveways.	P	City has a requirement that the design speeds in local and collector roads not exceed 25 mph. Bulbouts, traffic circles, chicanes and other features are included. There are no unpaved roads or driveways in the development.
9	Site design	Use of an APCD-approved suppressant on private unpaved roads leading to the site, unpaved driveways and parking areas; applied at a rate and frequency that ensures compliance with APCD Rule 401, visible emissions and ensures offsite nuisance impacts do not occur.	P	Unpaved roads, private or otherwise are not proposed as part of the Project.
10	Site design	Development is within 1/4 mile of transit centers and transit corridors.	O, P, GHG	Transit stops are shown at Venture Drive /Earthwood Lane and at the Town Center to meet this requirement (a requirement of the Short Range Transit Plan).
11	Site design	Design and build compact communities in the urban core to prevent sprawl.	O, P, GHG	This Project is not in the urban core, but the City

Table 3.3-9. Potentially Appropriate Mitigation Measures from APCD CEQA Air Quality Handbook (Continued)

Measure #	Measure Type	Mitigation Measure	Pollutant Reduced[1]	Describe how Project will include this measure
				has financial and permit processing preferences.
13	Site design	No residential wood burning appliances.	O, P, GHG	None are proposed.
14	Site design; transportation	Incorporate traffic calming modifications to project roads, such as narrower streets, speed platforms, bulb-outs and intersection designs that reduce vehicles speeds and encourage pedestrian and bicycle travel.	O, P, GHG	City has a requirement that the design speeds in local and collector roads not exceed 25 mph. Bulbouts, traffic circles, chicanes and other features are included. There are no unpaved roads or driveways in the development.
15	Site design; transportation	Increase number of connected bicycle routes/lanes in the vicinity of the project.	O, P, GHG	The Project includes this measure.
16	Site design; transportation	Provide easements or land dedications and construct bikeways and pedestrian walkways.	O, P, GHG	See circulation plan that includes buffered bike lanes on Collectors and Buckley Road, and an interconnected system of Class I bike trails through the site, from the east side of the site to the west side, and out to Higuera Street from the Project.
17	Site design; transportation	Link cul-de-sacs and dead-end streets to encourage pedestrian and bicycle travel to adjacent land uses.	O, P, GHG	Where cul-de-sacs are shown, they are open-ended for access by pedestrians and cyclists.
18	Site design; transportation	Project is located within one-half mile of a 'Park and Ride' lot or project installs a 'Park and Ride' lot with bike lockers in a location of need defined by SLOCOG.	O, P, GHG	Bike lockers are proposed for each transit stop area. Town Center will include trailhead facilities for the Class I bike trail.
19	Site design	Tract maps resulting in parcels of one-half acre or less shall orient at least 75% of all lot lines to create easy due south orientation of future structures.	GHG	Most streets run east-west; that provides this solar access.
20	Site design	Trusses for south-facing portions of roofs shall be designed to handle dead weight	O, GHG	See Page 8 of the Development Plan. At least 30% of all of the

Table 3.3-9. Potentially Appropriate Mitigation Measures from APCD CEQA Air Quality Handbook (Continued)

Measure #	Measure Type	Mitigation Measure	Pollutant Reduced[1]	Describe how Project will include this measure
		loads of standard solar-heated water and photovoltaic panels. Roof design shall include sufficient south facing roof surface, based on structures size and use, to accommodate adequate solar panels. For south facing roof pitches, the closest standard roof pitch to the ideal average solar exposure shall be used.		units will be outfitted with alternative energy systems capable of delivering at least 50% of the unit's electrical needs. This requirement will cover all dwelling units, not just those covered by the City's COS policies.
21	Energy efficiency	Increase the building energy rating by 20% above Title 24 requirements. Measures used to reach the 20% rating cannot be double counted.	O, GHG	See Page 8 of the Development Plan. Buildings will be designed so that they at least 25% more efficient than Title 24/CalGreen.
22	Energy efficiency	Plant drought tolerant, native shade trees along southern exposures of buildings to reduce energy used to cool buildings in summer.	O, GHG	The Project shall include this measure.
23	Energy efficiency	Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available locally if possible.	O, DPM, GHG	The Project shall include this measure per CalGreen and SLO Greenbuild Standards.
24	Energy efficiency	Install high efficiency heating and cooling systems.	O, GHG	See Page 8 of the Development Plan. Buildings will be designed so that they at least 25% more efficient than Title 24/CalGreen.
25	Energy efficiency	Orient 75% or more of homes and/or buildings to be aligned north/south to reduce energy used to cool buildings in summer.	O, GHG	The Project shall include this measure.
26	Energy efficiency	Design building to include roof overhangs that are sufficient to block the high summer sun, but not the lower winter sun, from penetrating south facing windows (passive solar design).	O, GHG	The Project shall include this measure.

Table 3.3-9. Potentially Appropriate Mitigation Measures from APCD CEQA Air Quality Handbook (Continued)

Measure #	Measure Type	Mitigation Measure	Pollutant Reduced[1]	Describe how Project will include this measure
27	Energy efficiency	Utilize high efficiency gas or solar water heaters.	O, P, GHG	Tankless "Rinnai" systems are proposed within the Project.
28	Energy efficiency	Utilize built-in energy efficient appliances (i.e. Energy Star®).	O, P, GHG	Buildings will be designed so that they at least 25% more efficient than Title 24/CalGreen.
29	Energy efficiency	Utilize double-paned windows.	O, P, GHG	The Project will provide as per City standard.
30	Energy efficiency	Utilize low energy street lights (i.e. sodium).	O, P, GHG	City uses LED street lights. Interior streets within the Project shall use low-energy LED lights.
31	Energy efficiency	Utilize energy efficient interior lighting.	O, P, GHG	The Project shall include this measure per CalGreen standards.
32	Energy efficiency	Utilize low energy traffic signals (i.e. light emitting diode).	O, P, GHG	No traffic signals onsite. City uses LED traffic lights.
33	Energy efficiency	Install door sweeps and weather stripping (if more efficient doors and windows are not available).	O, P, GHG	The Project shall include this measure.
34	Energy efficiency	Install energy-reducing programmable thermostats.	O, P, GHG	Standard.
35	Energy efficiency	Participate in and implement available energy-efficient rebate programs including air conditioning, gas heating, refrigeration, and lighting programs.	O, P, GHG	The Project shall include this measure.
36	Energy efficiency	Use roofing material with a solar reflectance values meeting the EPA/DOE Energy Star® rating to reduce summer cooling needs.	O, P, GHG	The Project shall include this measure.
37	Energy efficiency	Utilize onsite renewable energy systems (e.g., solar, wind, geothermal, low-impact hydro, biomass and bio-gas).	O, P, GHG	The Project shall provide this measure.
38	Energy efficiency	Eliminate high water consumption landscape (e.g.,	O, GHG	See Water Supply Assessment and tentative

Table 3.3-9. Potentially Appropriate Mitigation Measures from APCD CEQA Air Quality Handbook (Continued)

Measure #	Measure Type	Mitigation Measure	Pollutant Reduced[1]	Describe how Project will include this measure
		plants and lawns) in residential design. Use native plants that do not require watering and are low ROG emitting.		map application. City does not allow lawns in new development, See Page 51 of Development Plan.
39	Energy efficiency	Provide and require the use of battery powered or electric landscape maintenance equipment for new development.	O, GHG	The Project shall include this measure.
40	Transportation	Develop recreational facility (e.g., parks, gym, pool, etc.) within one-quarter of a mile from site.	O, P, GHG	Parks are provided within walking distance of each house.
41	Transportation	If the project is located on an established transit route, provide improved public transit amenities (i.e., covered transit turnouts, direct pedestrian access, covered bench, smart signage, route information displays, lighting etc.).	O, P, GHG	Transit Line No. 2 will be extended to the site. Transit stops will be provided per the requirements of the Short Range Transit Plan (within ¼ mile of each house.)
42	Transportation	Project provides a display case or kiosk displaying transportation information in a prominent area accessible to employees or residents.	O, P, GHG	Part of transit stop amenities.
43	Transportation	Provide electrical charging station for electric vehicles.	O, P, GHG	Required as part of Town Center Commercial.
44	Transportation	Provide neighborhood electric vehicles / car share program for the development.	O, P, GHG	The Project shall include this measure and shall include electric vehicle charging stations within parking lots.
45	Transportation	Provide bicycle-share program for development.	O, P, GHG	The Project shall include this measure, including a bicycle-share program station within the Town Center.
46	Transportation	Provide preferential parking / no parking fee for alternative fueled vehicles or vanpools**.**	O, P, GHG	Required.

Table 3.3-9. Potentially Appropriate Mitigation Measures from APCD CEQA Air Quality Handbook (Continued)

Measure #	Measure Type	Mitigation Measure	Pollutant Reduced[1]	Describe how Project will include this measure
47	Transportation	Provide bicycle lockers for existing 'Park and Ride' lots where absent or insufficient.	O, P, GHG	The Project shall include bicycle facilities at the Calle Joaquin Park & Ride as well as facilities within the Neighborhood Park.
48	Transportation	Provide vanpool, shuttle, mini bus service (alternative fueled preferred).	O, P, DPM, GHG	The Project shall include this measure.
49	Transportation	Provide storage space in garage for bicycle and bicycle trailers, or covered racks / lockers to service the residential units.	O, P, GHG	Required.
50	Transportation	Provide free-access telework terminals and/or wi-fi access in multi-family projects.	O, P, GHG	The Project shall include this measure.

O = Ozone
P = Particulate
DPM = Diesel Particulate Matter
GHG = Greenhouse Gas

Requirements and Timing. The Applicant shall include the mitigation measures in Table 3.3-10 above as indicated in the column "Describe How Project Will Include This Measure" all feasible standard mitigation measures from the City and Table 3-5 of the 2012 APCD CEQA Air Quality Handbook as part of the Project including those specified above prior to acceptance of the final Development Plan and recordation of the final VTM. City staff shall ensure the above measures are incorporated into the development plan and building plans prior to permit issuance.

Monitoring. City staff shall ensure measures are on plans. City staff shall work with the Applicant to ensure that these strategies are implemented. APCD inspectors or other City-approved compliance monitors shall conduct periodic site visits to ensure compliance and respond to nuisance complaints.

Residual Impact

Mitigation Measure AQ-2b summarizes the list of appropriate mitigation measures, and indicates which of these are to be incorporated by the Applicant in accordance with the 2012 APCD CEQA Air Quality Handbook. However, it is noted that many measures listed in MM AQ-2b do not contain quantifiable air quality emissions reductions. After incorporation of the above mitigations, CalEEMod estimates indicate that mitigated Project operations would continue to be over the APCD daily thresholds for ROG + NO_x by 84.24 lbs/day and PM_{10} by 6.63 lbs/day (see Table 3.3-10; see Appendix H for CalEEMod assumptions and mitigation report). Therefore, long-term operational residual impacts are significant and unavoidable.

Table 3.3-10. Maximum Long-term Operational Emissions (Mitigated)

	ROG	NO_x	ROG + NO_x	CO	SO_2	PM_{10}	DPM (fugitive $PM_{2.5}$)	CO_2e
Overall Operational (Maximum Daily Emission)								
Area (lbs/day)	59.86	0.68	60.54	59.42	0.0032	0.33	--	109.12
Energy (lbs/day)	0.45	3.82	4.27	2.06	0.0244	0.31	--	4,907.92
Mobile (lbs/day)	16.54	27.88	44.42	152.77	0.4393	30.99	8.14	31,453.89
Total (lbs/day)	76.85	32.39	109.24	214.24	0.4669	31.63	8.14	36,470.92
Threshold (lbs/day)	--	--	25	550	--	25	1.25	--
Threshold (tons/year)	--	--	25	--	--	25	--	--
Significant?	--	--	**YES**	NO	--	**YES**	**YES**	--

See Appendix H for CalEEMod worksheets.

Impact AQ-3 Release of toxic diesel emissions during initial construction and long-term operation of the Project could expose nearby sensitive receptors to such emissions (Less than Significant).

The Project would generate DPM emissions from construction and operational activities within 1,000 feet of single-family residences adjacent to the east and the Calvary SLO Church to the northwest. DPM is listed as a TAC by the CARB with no identified threshold.

As required by the EPA, beginning in 2000, and the CARB beginning in 2006, and as specified in the California Code of Regulations (CCR) Title 13, Division 3, Chapter 9, Article 4, Sec. 2423(b)(1), all off-road diesel engines are required to meet at a minimum the Tier 3 Emission Standards for Off-Road Compression-Ignition Engines (with proper diesel particulate controls). Tier 3 vehicles operate with significantly less emissions than Tier 1 or Tier 2, as regulated by the EPA. Heavy-haul vehicle fleets used for the Project would comply with state and federal operational standards to reduce the potential generation of NO_x or PM_{10} emissions for off-road diesel vehicles in compliance with CCR.

The potential for TACs to have an effect on sensitive receptors would occur if the Project is located near an existing significant source of TACs or if it would generate TACs in quantities that may have an adverse effect on sensitive receptors. CARB identifies high-volume freeways and roads (highways, urban roads carrying 100,000 vehicles a day, and rural roads carrying 50,000 vehicles per day), dry cleaners, and large gas stations as potential sources of TACs. The Project would comprise residential and local-serving retail and office uses, which are considered uses that would not generate substantial amounts of TACs and would not pose a risk to sensitive receptors in the Project vicinity. Accordingly, TAC pollution controls would not be required for the Project.

Additionally, according to the 2005 CARB's Air Quality and Land Use Handbook, it is recommended to maintain 500 feet between residences and a major freeway, and more than 50 feet from a typical gas station. U.S. Highway 101 is located approximately 2,330 feet to the west of the Project site, and no gas stations are located in the immediate (50 feet or less) vicinity of the Project site. As the Project is outside the recommended buffer zone of potential TAC emitters, the Project is not expected to expose sensitive receptors to substantial levels of TACs.

Given that the Project site is outside all relevant buffer zones to potential substantial TAC emissions in the vicinity, the Project's potential impacts to sensitive receptors would be ***less than significant***.

Impact AQ-4 Construction and operation of the Project would result in impacts to global climate change from the emissions of GHGs and would be potentially inconsistent with the City's Climate Action Plan (Significant but Mitigable).

Construction Emissions

Construction activities for the Project are assumed to occur over a period of approximately 10 years for the purposes of this analysis. Based on CalEEMod estimates, construction activities for the Project would generate an estimated 15,015.16 MT of CO_2e (see Table 3.3-11). Amortized over a 25-year period (consistent with APCD methodology), construction of the Project would generate approximately 600.61 MT of CO_2e per year.

Table 3.3-11. Estimated Construction GHG Emissions (Unmitigated)

Year	Annual Emissions MT CO_2e
2019	933.83
2020	907.18
2021	587.40
2022	581.25
2023	1,177.14
2024	1,926.89
2025	1,529.81
2026	1,739.42
2027	2,345.51
2028	1,867.31
2029	1,419.43
Total	**15,015.16**
Amortized over 25 years	**600.61**

Operational

Operational emissions would be generated from area, energy use, solid waste, water use, and transportation. Total operational emissions would be approximately 8,779.16 MT CO_2e. Combined with construction emissions amortized over a 25-year period (600.61 MT CO_2e), total GHG emissions for the Project would be approximately 9,379.77 MT CO_2e.

Table 3.3-12. Estimated Operational GHG Emissions (Unmitigated)

Emission Source	Annual Emissions MT CO_2e
Area	16.39
Energy Use	2,456.18
Solid Waste	473.36
Water Use	118.29
Mobile Sources	5,714.94
Total	**8,779.16**

The City's Climate Action Plan is designed as a Qualified GHG Reduction Plan, consistent with CEQA Guidelines Section 15183.5(b). It allows the City to streamline the CEQA review process of development projects such as this one. The adjusted GHG emissions forecast shows that implementation of all strategies in this plan can achieve a 15 percent reduction from baseline levels by 2020, which will meet required AB 32 state reduction goals. The Project's consistency with the City's Climate Action Plan goals, actions, and strategies is described below:

- Buildings Goal: Reduce energy-related emissions by promoting greater energy efficiency at the point of final use in buildings.
    - The Project is consistent with the buildings actions and strategies by its compliance with U.S. Green Building Council's LEED-ND "silver" certification and San Luis Obispo Green Build passive solar guidelines and GreenPoint single-family, GreenPoint multi-family, and CalGreen; its inclusion of high-efficiency Energy Star fixtures, appliances, and features; and its inclusion of buildings that are at least 25 percent more energy efficient than state or local regulations require.
- Renewable Energy Goal: Use cleaner and renewable energy sources.
    - The Project is consistent with the renewable energy actions and strategies by its inclusion of at least half the units with photovoltaic (PV) systems that provide at least 30 percent of all of the units' electrical energy demand or equivalent energy saving improvements, exceeding the current City guideline (General Plan Conservation Policy 4.6.17) for at least 30 percent of the units to be supplied with basic PV systems.

- Transportation and Land Use Goal: Improve transportation options.
    - The Project is consistent with the transportation and land use elements and strategies within the Climate Action Plan with development of pedestrian and bicycle facilities along the public street system, dedicated pedestrian pathways, and Class I and II bicycle paths. At full buildout of the Project, the homes and businesses in Avila Ranch would be interconnected to the rest of the City through a dense street pattern, sidewalks, local and regional bikeways and nearby transit; the Project would also include two transit stops: a fully improved transit and van pool stop as part of the Town Center, and an additional stop within the Town Center. However, during the early phases of Project development (e.g., Phases 1 through 4), transit services may not be fully in place and pedestrian and bicycle connections may be fragmented, which may be inconsistent with the Climate Action Plan if not addressed through Project improvements and mitigation.
- Water Goal: Reduce and reuse water consumed by the community.
    - The Project is consistent with the water actions and strategies by its inclusion of features and measures to reduce average daily potable water usage by at least 35 percent below the community's current water demand per unit; and its inclusion of progressive storm-water treatment and management improvements through bio-retention swales, runoff treatment and filtration, permeable paving and pavement systems, water retention gardens, and other integrated treatment detention/retention systems. Approximately 82 percent of irrigation demand for the Project site will be met with non-potable recycled water.
- Solid Waste Goal: Prevent, reduce, reuse, and recycle solid waste to minimize the amount of waste being sent to the landfill.
    - The Project is potentially consistent with the solid waste actions and strategies by being compliant with the City's proactive waste management practices that reduce waste-related GHG emissions.
- Parks and Open Space Goal: Maintain natural areas and plant trees and green spaces.
    - The Project is consistent with the parks and open space actions and strategies by its inclusion of over 55 acres of onsite open space in accordance with LUCE Policy 8.1.6, including 27 acres for sustainable agriculture, 1.3 acres for

community gardens, and 18 acres for riparian open space. The Project will offer a 9.8-acre neighborhood park that is generally within a quarter mile of any residential unit, eight mini-parks within one-eight mile of residential units, a pocket park, and Tank Farm Creek Riparian Corridor.

- Government Operations Goal: Reduce GHG emissions from government operations to 1990 levels using a mix of strategies, including: conservation, clean energy, efficiency upgrades, recycling, and alternative transportation incentives for employee commute.

    - The Project is consistent with the government operations actions and strategies by the inclusions discussed above.

All applicable actions and measures identified in the City's Climate Action Plan must be incorporated as binding and enforceable components of the Project for it to be found consistent with the Climate Action Plan. Although during the 10-year construction of the Project there is the potential for construction activities and gaps in transit service to conflict with the Climate Action Plan, implementation of a range of mitigation measures addressing air quality and transportation would address the potential inconsistencies. Therefore, the Project is found to be consistent with the Climate Action Plan after its implementation of all applicable actions and measures; incorporation of mitigation measures below would make impacts from GHG emissions ***significant but mitigable***.

Mitigation Measures

MM AQ-2a, MM AQ-2b, MM TRANS-2d, MM TRANS-2f, MM TRANS-10a through c, MM TRANS-11, and MM TRANS-12 shall apply.

Residual Impact

Energy use emissions assume installation of energy efficient appliances, with buildings exceeding Title 24 efficiency standards by 25 percent. Emissions from electricity are estimated at 1,782.45 MT CO_2e from natural gas. Annual emissions from all generated solid waste would be approximately 473.36 MT CO_2e. Water use emissions assume a reduction of 20 percent. Emissions from water use would be approximately 95.31 MT CO_2e. GHG emissions associated with mobile sources were estimated at 4,777.58 MT CO_2e using CalEEMod (see Table 3.3-13). Implementation of MM AQ-2a would further reduce water usage and would ensure consistency with the Climate Action Plan's water usage and solid waste goals. Implementation of measures listed within MM AQ-2b would reduce the Project's operational energy usage. Mitigation measures contained within

Section 3.12, *Transportation and Traffic*, would improve bicycle and pedestrian connections during Project development prior to buildout. MM TRANS-12 would ensure transit service would be available prior to occupancy of the first unit for Phase 1, and would ensure the Project achieves consistency with the Climate Action Plan's transportation goals.

Table 3.3-13. Estimated Operational GHG Emissions (Mitigated)

Emission Source	Annual Emissions MT CO_2e
Area	16.39
Energy Use	1,782.45
Solid Waste	473.36
Water Use	95.31
Mobile Sources	4,777.58
Total	**7,145.08**

See Appendix H for CalEEMod computer program output and for GHG emission factor assumptions.

Total mitigated operational emissions would be approximately 7,145.08 MT CO_2e. Combined with construction emissions amortized over a 25-year period (600.61 MT CO_2e), total GHG emissions for the Project would be approximately 7,745.69 MT CO_2e. With incorporation of these measures, impacts would be less than significant.

AQ-5 The Project is potentially inconsistent with the County of San Luis Obispo APCD's 2001 Clean Air Plan (Significant and Unavoidable).

Consistency analysis with local and regional plans, such as the Clean Air Plan, is required under CEQA. Consistency with the Clean Air Plan means that stationary and vehicle emissions associated with the Project are accounted for in the Clean Air Plan's emissions growth assumptions.

According to the County APCD's guidelines, a project may result in significant air quality impacts if it is inconsistent with the assumptions in the CAP. Consistency with the Clean Air Plan is evaluated based on three criteria:

1) *Are the population projections used in the plan or project equal to or less than those used in the most recent Clean Air Plan for the same area?*

   The Project would include 410 single-family units and 310 multi-family units that would add a population of approximately 1,649 persons. This is based on the number of dwelling units (720) multiplied by the average number of persons per

household in the City (2.29). The Clean Air Plan's population estimate for the City is 48,499 by 2015, and 305,854 for the County by 2015. According to 2016 estimates by the California State Department of Finance, the City population estimate is 46,117 and the County population estimate is 277,977. The City's population estimates are just marginally under the Clean Air Plan's projected population estimates. The increase of approximately 1,649 persons by the Project is within the population projections under the Clean Air Plan.

The City's LUCE Policy 8.1.6 indicates the specific plan for the area including the Project site should provide a variety of housing types and affordability levels, with a minimum of 500 dwelling units, and maximum of 700 dwelling units. This is consistent with the land uses and intensities of the Project, which plans to include a total of 720 dwelling units. This is slightly above the maximum allowable units due to the inclusion of high-density housing. The LUCE objectives are intended to ensure that the Project site is developed primarily as a residential neighborhood with supporting commercial and recreational facilities, and provisions for onsite and offsite open space/resource protection. The Project is consistent with the population projections anticipated by the LUCE (see Section 3.10, *Population and Housing*). However, as indicated in the LUCE Update EIR, population estimates cannot be directly compared as the Clean Air Plan only projects population estimates until 2015. In addition, as described in the preceding Impact AQ-2 analysis, the Project would result in significant and unavoidable operation-related air quality impacts generated by area, energy, and mobile emissions; therefore, the Project is potentially inconsistent with the Clean Air Plan.

2) *Is the rate of increase in vehicle trips and miles traveled less than or equal to the rate of population growth for the same area?*

   The population growth from the Project would exceed the Clean Air Plan projections. As described in Section 3.12, *Transportation and Traffic*, the Project would create 616 new PM peak-hour vehicle trips. The trip generation rate per day at the Project site is 6,776. The rate of increase in vehicle trips and miles traveled would exceed the Clean Air Plan projections for the Project site; therefore, the Project is potentially inconsistent with the Clean Air Plan.

3) *Have all applicable land use and Transportation Control Measures (TCMs) and strategies from the Clean Air Plan been included in the plan or project to the maximum extent feasible?*

> The transportation goal of the Clean Air Plan is to reduce the growth of vehicle trips and vehicle miles traveled to the rate of population growth within the County. TCMs are controls that help reduce emissions resulting from motor vehicles, by reducing vehicle use and facilitating the use of alternative transportation options. There are a total of nine TCMs located in the Clean Air Plan which include the following; T-1B Campus Trip Reduction Program; T-1C Voluntary Commute Options Program; T-2A Local Transit Systems Improvements; T-2B Regional Public Transit Improvements; T-3 Bicycling and Bikeway Enhancements; T-4 Park and Ride Lots; T-5 Motor Vehicle Inspection and Control Programs; T-6 Traffic Flow Improvements and T-8 Teleworking, Teleconferencing and Telelearning. T-1B, T-5, and T-8 are not applicable to the Project as the Project does not include a college campus, smog check program, or commercial office space. T-1C is applicable to the commercial uses of the Project site. The Project will include two bus stops within the site with associated transit service, which will be consistent with T-2A and T-2B after Project buildout; however, during early phases of Project development, transit services may not be fully in place (see Impact TRANS-12 within Section 3.12, *Transportation and Traffic*, for further analysis of this issue). T-3 is included in the Project and supports T-1C. T-6 is also included in the Project.

Land use strategies in the Clean Air Plan include planning compact communities, providing for mixed land use, balancing jobs and housing, circulation management, and communication, coordination and monitoring. Each of the five land use strategies are applicable to the Project and would be implemented by the project.

The Project could hinder the County's ability to maintain attainment of the state O_3standard, because the emissions reductions projected in the Clean Air Plan may not be met. The anticipated population growth and increase in vehicle trips is potentially inconsistent with the Clean Air Plan. With the inclusion of mitigation measures below, impacts would continue to be ***significant and unavoidable***.

Mitigation Measures

MM AQ-2b and MM TRANS-12 shall apply.

Residual Impact

In accordance with the 2012 APCD CEQA Air Quality Handbook, all standard mitigation measures and feasible discretionary mitigation measures must be incorporated into the Project. Implementation of MM TRANS-12 would ensure transit services would be

available in the Project vicinity prior to occupancy of the first unit for Phase 1, which would result in consistency with Clean Air Plan Goal T-2A. However, as described above, the Project is not fully consistent with overall land use planning principles contained in the Clean Air Plan. Therefore, residual impacts would be significant and unavoidable.

Cumulative Impacts

Air Quality Emissions

The Project, in combination with any approved, pending, and proposed development within the City, would further contribute to the increase in development and associated generation of air quality-related emissions. The Air Basin is currently in state non-attainment for fugitive dust particulate (PM_{10}) and O_3, for which NO_x and ROGs are a precursor. As the Project would result in significant and unavoidable impacts associated with long-term operational emissions, particularly for NO_x, ROGs, PM_{10} and $PM_{2.5}$, the Project would generate air quality emissions for criteria pollutants within an Air Basin that is under state non-attainment; therefore, the proposed Project would contribute cumulatively and considerably to air quality emissions throughout the City and region.

Further, as analyzed in the LUCE Update EIR, full buildout under the LUCE would not be consistent with the 2001 Clean Air Plan. Cumulative impacts related to this increase in air-quality emissions resulting from the Project would therefore be cumulatively considerable and ***significant and unavoidable***.

GHG Emissions

Analysis of GHG emissions is cumulative in nature because impacts are caused by cumulative global emissions. Additionally, climate change impacts related to GHG emissions do not necessarily occur in the same area as the Project is located. Therefore, the preceding analysis is related to cumulative impacts of GHG emissions, and in this analysis the Project was found to have ***less than significant*** impacts after mitigation.