

3.3 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

This section discusses air quality impacts associated with the proposed East Cherry Avenue Specific Plan (Project) in the context of site-specific and regional air quality within San Luis Obispo 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 (O₃), sulfur dioxide (SO₂), 10-micron particulate matter (PM₁₀), 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 particular diesel particulate matter, generated from the operation of diesel engines (e.g., trains, equipment, truck, etc.).

3.3.1 Environmental Setting

Existing conditions for air quality in the City of Arroyo Grande are described in detail in the County's *2001 Clean Air Plan*, which is incorporated herein by reference. Based on information available, it is not expected that baseline conditions have changed significantly since the 2001 plan was completed.

3.3.1.1 Regional Climate and Meteorology

San Luis Obispo 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 offshore 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.

3.3.1.2 Greenhouse Gases and Global Climate Change

Global climate change is a change 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 greenhouse gases above natural levels is a significant contributor to global climate change. Greenhouse gases (GHGs) that trap heat in the atmosphere and regulate the Earth's temperature include water vapor, carbon dioxide (CO₂), methane, NO_x, chlorofluorocarbons (CFCs), and ozone (O₃).

The primary activities associated with GHG emissions include the electric power industry, transportation, industrial/manufacturing, agricultural, commercial, and residential (U.S. EPA 2015). Specifically, the main sources of increased concentrations of GHGs due to human activity include the combustion of fossil fuels and deforestation (CO₂); livestock and rice paddy farming, land use and wetland depletions, and landfill emissions (methane); 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 CO₂, which makes up approximately 82 percent of U.S. GHG emissions. As such, CO₂ has the highest data availability and least uncertainty (EPA 2015). In 2012, the State of California produced

approximately 364.20 million metric tons of CO₂ emissions from fossil fuel combustion. Sector sources of these CO₂ 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, economical 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 (California Regional Assessment Group 2002).

3.3.1.3 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 San Luis Obispo 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.

3.3.1.4 Regional Emissions

San Luis Obispo County has historically been designated as non-attainment of state standards for 1 hour and 8 hour ozone (O₃) standards, however conditions have improved as of January 2015. Based on the 2008 8-hour ozone standard, the eastern half of San Luis Obispo County is designated as marginal non-attainment for O₃ while the western half, which includes the Project site, is in attainment. O₃ is a secondary pollutant that is not produced directly by a source, but rather is formed by a reaction between NO_x and reactive organic gases (ROGs) in the presence of sunlight. O₃ 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).

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 (O₃)	1 Hour	0.09 ppm (180 µg/m ³)	Non-Attainment	--	Non-Attainment Eastern SLO County – Attainment Western SLO County (Project site)
	8 Hour	0.070 ppm (137 µg/m ³)		0.070 ppm (137 µg/m ³)	
Respirable Particulate Matter (PM₁₀)	24 Hour	50 µg/m ³	Non-Attainment	150 µg/m ³	Unclassified*/Attainment
	Annual Arithmetic Mean	20 µg/m ³		--	
Fine Particulate Matter (PM_{2.5})	24 Hour	--	Attainment	35 µg/m ³	Unclassified*/Attainment
	Annual Arithmetic Mean	12 µg/m ³		12.0 µg/m ³	
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 (NO₂)	1 Hour	0.18 ppm (339 µg/m ³)	Attainment	100 ppb (188 µg/m ³)	Unclassified*
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)		0.053 ppm (100 µg/m ³)	
Sulfur Dioxide (SO₂)	1 Hour	0.25 ppm (655 µg/m ³)	Attainment	75 ppb (196 µg/m ³)	Unclassified*
	3 Hour	--		--	
	24 Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (for certain areas)	
	Annual Arithmetic Mean	--		0.030 ppm (for certain areas)	
Lead	30 Day Average	1.5 µg/m ³	Attainment	--	No Attainment Information
	Calendar Quarter	--		1.5 µg/m ³ (for certain areas)	
	Rolling 3-Month Average	--		0.15 µg/m ³	

Notes:

ppm = parts per million

µg/m³ = micrograms per cubic meter

mg/m³ = 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 not exceeded during a three 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 three year period.

Source: (San Luis Obispo APCD 2013).

San Luis Obispo County has historically been a non-attainment area for the state standards for PM₁₀; however, western San Luis Obispo, where the Project site is located, is within attainment of national standards for PM₁₀. Atmospheric particulate matter, or PM₁₀, is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes and mists. Human activities that generate PM₁₀ 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).

3.3.1.5 Emissions in the Vicinity of the Project Site

Activities within the Project site vicinity that contribute to existing emissions in the Air Basin are primarily associated with motor vehicles. The air monitoring station located nearest to the Project site is the Nipomo-Guadalupe Road Station, located at 1300 Guadalupe Road, Nipomo, CA, about 6.3 miles from the Project site. This station measures SO₂, PM_{2.5}, and PM₁₀. Hourly data for O₃ is not recorded at this station, so ozone data was retrieved from the Nipomo-Regional Park Station, which is located 7.2 miles from the Project site. Table 3.3-2 summarizes the annual air quality emissions data for the local airshed between the years 2012 to 2014, with values exceeding state emissions underlined. 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 Nipomo Air Monitoring Stations

Year	O ₃ , ppb		PM ₁₀ , µg/m ³	PM _{2.5} , µg/m ³	O ₃ Days Above Standard		PM ₁₀ Days Above Standard		PM _{2.5} Days Above Standard	
	1-Hour Max	8-Hour Max	24-Hour Max	24-Hour Max	State	National	State	National	State	National
2012	65	60	<u>150.4</u>	36.9	0	0	41.4	0	0	1
2013	76	<u>72</u>	<u>136.5</u>	32.0	1	0	60.4	0	0	0
2014	81	<u>76</u>	<u>153.0</u>	37.5	1	1	43.6	0	0	1

Notes: ppb = parts per billion, µg/m³ = micrograms per cubic meter, underlined values have exceeded state emissions standards, *italicized* values have exceeded national emissions standards

Source: CARB 2015.

3.3.2 Regulatory Setting

3.3.2.1 Federal

Clean Air Act

The federal Clean Air Act (CAA) was passed in 1963 and amended in 1990, and was the first comprehensive federal law to regulate air emissions from stationary and mobile sources. Among other things, the law authorizes the U.S. EPA to establish national ambient air quality standards. The national ambient air quality standards (NAAQS) help to ensure basic health and environmental protection from air pollution. The Clean Air Act also gives the U.S. 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 Federal Clean Air Act (CAA) of 1970 and its amendments of 1977 and 1990. The EPA has established primary and secondary NAAQS for O₃, CO, NO_x, SO_x, PM₁₀, and lead (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 CAA 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.

3.3.2.2 State

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 national ambient air quality standards.

California Air Resources Board

CARB, a part of the California Environmental Protection Agency, 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. California ARB 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. 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.

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 greenhouse gases emitted in California be reduced to 1990 levels by the year 2020. “Greenhouse gases” as defined under AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. CARB is the state agency charged with monitoring and regulating sources of greenhouse gases. 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 greenhouse gas emissions level of 427 million metric tons of carbon dioxide equivalent (MMTCO_{2e}) on December 6, 2007 (ARB 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 (ARB 2008). The Scoping Plan identifies recommended measures for multiple greenhouse gas 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 greenhouse gas 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 greenhouse gas emissions for regions throughout California and pursuing policies and incentives to achieve those targets;

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

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 greenhouse gas 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 ARB has approved new emission inventories for greenhouse gases 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.

SB 97 and the 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 prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of

¹ On March 17, 2011, the San Francisco Superior Court issued a final decision in *Association of Irrigated Residents v. California Air Resources Board* (Case No. CPF-09-509562). While the Court upheld the validity of the ARB Scoping Plan for the implementation of AB 32, the Court enjoined ARB 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, ARB filed an appeal. On June 24, 2011, the Court of Appeal granted ARB’s petition staying the trial court’s order pending consideration of the appeal. In the interest of informed decision-making, on June 13, 2011, ARB released the expanded alternatives analysis in a draft Supplement to the AB 32 Scoping Plan Functional Equivalent Document. The ARB Board approved the Scoping Plan and the CEQA document on August 24, 2011.

greenhouse gas emissions or the effects of greenhouse gas 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 greenhouse gases 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 greenhouse gas 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 greenhouse gas 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 greenhouse gas 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 greenhouse gas emissions are significant or cumulatively considerable.

Also amended were CEQA Guidelines Sections 15126.4 and 15130, which address mitigation measures and cumulative impacts respectively. Greenhouse gas 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 greenhouse gas 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 greenhouse gas analysis and later project-specific tiering, as well as the preparation of Greenhouse Gas 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 greenhouse gas questions.

Senate Bill (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 greenhouse gas emissions, which emits over 40 percent of the total greenhouse gas 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 greenhouse gas emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies. The ARB 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 communities strategy or an alternative planning strategy that the ARB accepts as achieving the greenhouse gas 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.

Other Plans and Guidance Documents

In October 2008, the CARB, as the lead agency for implementing AB 32, released the *Climate Change Proposed Scoping Plan*. This plan proposes a comprehensive set of actions designed to reduce overall carbon emissions in California, improve the environment, reduce dependence on oil, diversify energy sources, save energy and enhance public health while creating new jobs and enhancing the growth in California’s economy (CARB 2008b). In addition to the Scoping Plan, CARB adopted a statewide GHG emissions limit and an emissions inventory, along with requirements to measure, track, and report GHG emissions by the industries determined to be significant sources of GHG emissions (Office of Planning and Research [OPR] 2008).

3.3.2.3 Local

County of San Luis Obispo Clean Air Plan

The County of San Luis Obispo APCD adopted the Clean Air Plan 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 Arroyo Grande Climate Action Plan

The City of Arroyo Grande Climate Action Plan is a long-range plan aimed to reduce GHG emissions from city operations, developments, and community activities throughout the City in anticipation of the effects of climate change. The primary purposes of the Climate Action Plan are the following:

- Summarize the results of the City of Arroyo Grande 2005 Greenhouse Gas Emissions Inventory Update, which identifies the major sources and quantities of GHG emissions produced within Arroyo Grande and forecasts how these emissions may change over time;
- Identify the quantities of GHG emissions that Arroyo Grande will need to reduce to meet its target of 15 percent below 2005 levels by the year 2020, consistent with AB 32;
- Set forth City government and community-wide GHG reduction measures, including performance standards which, if implemented, would collectively achieve the specified emission reduction target;
- Identify proactive strategies that can be implemented to help Arroyo Grande prepare for anticipated climate change impacts, and;
- Set forth procedures to implement, monitor, and verify the effectiveness of the Climate Action Plan measures and adapt efforts moving forward as necessary.

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.

3.3.3 Environmental Impact Analysis

3.3.3.1 Thresholds of Significance

Air Quality 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 proposed Project would have a significant impact on air quality and GHG emissions if the proposed Project would result in any of the following:

- a) Conflict with or obstruct implementation of the San Luis Obispo 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 O₃ precursors);
- d) Expose sensitive receptors to substantial pollutant concentrations; and/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.

Significance Criteria for Construction-Related Emissions

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

ROG and NO_x Emissions

- Over 137 pounds per day (lbs/day) of ROG and NO_x requires Standard Mitigation Measures.
- Over 2.5 tons per quarter (ton/qtr) of ROG and NO_x requires Standard Mitigation Measures and Best Available Control Technology for construction equipment (BACT).

Over 6.3 ton/qtr of ROG and NO_x requires Standard Mitigation Measures, BACT, implementation of a Construction Activity Management Plan (CAMP), and offsite mitigation.

Diesel Particulate Matter (DPM) Emissions

- Over 7 lbs/day of DPM requires Standard Mitigation Measures.
- Over 0.13 ton/qtr of DPM requires Standard Mitigation Measures, and BACT for construction equipment.

- Over 0.32 ton/qtr of DPM requires Standard Mitigation Measures, BACT, implementation of a CAMP, and offsite mitigation.

Fugitive Particulate Matter (PM₁₀), Dust Emissions

- 2.5 ton/qtr of PM₁₀ requires Fugitive PM₁₀ 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
PM₁₀	-	2.5	-

Source: (San Luis Obispo APCD 2012).

If construction-related emissions of the proposed Project equal or exceed any of the thresholds stated above, mitigation of construction activities and implementation of Best Available Control Technology (BACT) would be required.

Significance Criteria for Operational Emissions

Long-term operational emission thresholds for San Luis Obispo 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 required 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 (PM₁₀) Dust Emissions

- Projects that emit over 25 lbs/day or 25 tons/year of PM₁₀ 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	-
PM₁₀	25 lbs/day	25 tons/year

Source: San Luis Obispo APCD 2012.

Greenhouse Gases 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 proposed Project. According to the adopted CEQA Guidelines, impacts related to GHG emissions from the proposed Project would be significant if the Project would:

- Generate greenhouse gas 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 greenhouse gases.

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 ARB’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 Greenhouse Gas Reduction Strategy, or equitably similar adopted policies, ordinances and programs. If a project complies with a Qualified Greenhouse Gas 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 Greenhouse Gas 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.

3.3.3.2 Impact Assessment Methodology

Criteria Pollutants

The air quality analysis follows the guidelines and methodologies recommended in the APCD's *CEQA Air Quality Handbook* for the County of San Luis Obispo (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 2012). Fugitive dust emissions from ground disturbance and import and stockpile activities were calculated using APCD emission factors (San Luis Obispo APCD 2012). 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 E for CalEEMod Estimates).

Greenhouse Gases 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.

3.3.4 Project Impacts and Mitigation Measures

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

Table 3.3-5. Summary of Project Impacts

Air Quality Impacts	Mitigation Measures	Residual Significance
Impact AQ-1. The proposed Project would result in significant short-term 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 MM AQ-1d	Less than Significant with Mitigation
Impact AQ-2. The proposed 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
Impact AQ-3. Release of toxic diesel emissions during initial construction and long-term operation of the proposed Project could expose nearby sensitive receptors to such emissions.	MM AQ-3a MM AQ-3b	Less than Significant with Mitigation
Impact AQ-4. Construction and operation of the proposed Project would result in less than significant impacts to global climate change from the emissions of greenhouse gases if the Project is consistent with the City's Climate Action Plan.	MM AQ-2b	Less than Significant
Impact AQ-5. The proposed Project is potentially inconsistent with the County of San Luis Obispo APCD's 2001 Clean Air Plan.	MM AQ-2b MM AQ-5a	Significant and Unavoidable

Impact

AQ-1 The proposed Project would result in significant short-term construction-related air quality impacts from dust and air pollutant emissions generated by grading and construction equipment operation (Less than Significant with Mitigation).

Project construction would generate short-term air pollutant emissions, particularly construction emissions of ROG and NO_x during the architectural coating phase, and fugitive dust (PM₁₀ and PM_{2.5}) associated with grading and exhaust from heavy construction vehicles. Construction would generally 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 phase of paints and architectural coatings.

The site preparation phase would involve the greatest amount of heavy equipment and the greatest generation of fugitive dust. Emissions were calculated based on an equipment list and composite emission factors. The exact construction timeline for all three subareas is currently unknown; therefore, construction for each subarea was conservatively assumed

to occur simultaneously over an 18-month period. Emission estimates from construction of all three subareas are provided in Table 3.3-6.

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

	ROG	NO _x	ROG + NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}	CO _{2e}
Overall Construction (Maximum Daily Emission)								
(lbs/day)	84.84	90.19	175.03	67.53	0.12	5.00	3.67	11,807.5
(tons/qtr) includes Fugitive Dust	1	1.15	2.15	1.01	<0.01	0.1	0.07	138.7
APCD Thresholds (lbs/day)	--	--	137	--	--	--	7	--
APCD Thresholds (tons/qtr)	--	--	2.5	--	--	2.5	0.13	--
Significant?	--	--	YES	NO	NO	NO	NO	NO

See Appendix E for CalEEMod worksheets.

PM₁₀ generation associated with fugitive dust from construction activities were calculated in CalEEMod using the methodology described in the San Luis Obispo APCD 2012 CEQA Air Quality Handbook. Detailed construction emissions and calculation assumptions are provided in Appendix E.

Projected emissions for the proposed Project were found to be above the established CEQA thresholds for construction emissions of ROG and NO_x during the architectural coating phase. Further, APCD requires any project with a grading area greater than 4.0 acres to apply mitigation measures for PM₁₀ (primarily from fugitive dust); since the proposed Project would disturb a total of 15.29 acres, PM₁₀ mitigation measures would need to be implemented. Standard APCD-recommended conditions at the Project site would minimize construction-related air quality impacts, making impacts *less than significant with mitigation* (see Table 3.3-7).

Mitigation Measures for All Subareas

MM AQ-1a The following standard air quality mitigation measures shall be implemented during construction activities at the Project site:

- *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 should 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 should 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.*

MM AQ-1b The following standard air quality mitigation measures for construction equipment shall be implemented during construction activities at the Project site:

- *Maintain all construction equipment in proper tune according to manufacturer's specifications;*
- *Fuel all off-road 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 ARB'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 ARB'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 is not permitted;*
- *Staging and queuing areas shall not be located 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.*

MM AQ-1c A Construction Activity Management Plan 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:

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

MM AQ-1d 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. The Applicants are required to show measures on grading and building plans and adhere to measures throughout all grading, hauling, and construction activities. Dust control requirements shall be noted on all grading and building plans. The contractor or builder shall provide City monitoring staff and the APCD with the name and contact information for an assigned onsite dust 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 permit issuance. 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 on plans. Grading and building inspectors shall spot check; Grading and building inspectors shall ensure compliance onsite. APCD inspectors shall conduct periodic site visits to ensure compliance and respond to nuisance complaints.

Residual Impact

The projected emissions for construction emissions ROG and NO_x after implementation of mitigation (see Table 3.3-7) were found to be below the established APCD thresholds, therefore residual impacts are less than significant.

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

	ROG ¹	NO _x	ROG + NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}	CO _{2e}
Overall Construction (Maximum Daily Emission)								
(lbs/day)	17.26	71.54	88.52	58.67	0.12	3.06	2.00	11,807.5
(tons/qtr) includes Fugitive Dust	1	0.98	1.98	0.95	<0.01	0.07	0.04	138.7
APCD Thresholds (lbs/day)	--	--	137	--	--	--	7	--
APCD Thresholds (tons/qtr)	--	--	2.5	--	--	2.5	0.13	--
Significant?	--	--	NO	NO	NO	NO	NO	NO

¹ CalEEMod is unable to estimate reductions in ROG emissions from the use of low VOC emissions paint during construction phases. As such, ROG emissions were estimated with pro-rated values using low VOC emissions paint equivalent to 50 g/l.
See Appendix E for CalEEMod worksheets.

Impact

AQ-2 The proposed 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 proposed 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 proposed Project were estimated using CalEEMod.

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

	ROG	NO _x	ROG + NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}	CO _{2e}
Overall Operational (Maximum Daily Emission)								
Area (lbs/day)	8.42	0.07	8.48	5.64	0.0003	0.03	0.03	10.33
Energy (lbs/day)	0.29	2.60	2.89	0.95	0.0158	0.20	0.20	3,184.4
Mobile (lbs/day)	6.78	12.69	19.47	57.58	0.11	7.76	2.18	8,639.5
Total (lbs/day)	15.49	15.36	30.84	65.17	0.12	7.99	2.41	11,834.2
Threshold (lbs/day)			25			25	1.25	
Threshold (tons/year)			25			25		
Significant?			YES			NO	YES	

See Appendix E for CalEEMod worksheets.

Projected emissions for the proposed Project were found to be above the established APCD thresholds for operational emissions of ROG and NO_x, and PM_{2.5}. For unmitigated projects that result in emissions between 30 and 34 lbs/day of combined ROG and NO_x or PM₁₀, the APCD *CEQA Air Quality Handbook* recommends that at least 14 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 proposed Project design guidelines would implement many of these measures. Even after the inclusion of these recommended measures as appropriate (see Table 3.3-8), impacts are still marginally *significant and unavoidable*.

Mitigation Measures for All Subareas

MM AQ-2a The Applicants shall include the following:

- *Water Conservation Strategy: The Applicants 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 Applicants shall institute recycling and composting services to achieve a 15 percent reduction in waste disposal, and use waste efficient landscaping.*
- *Fugitive Dust: The Applicants shall replace ground cover of at least 70 percent of area disturbed in accordance with CARB Rule 403.*

MM AQ-2b Consistent with standard mitigation measures in Table 3-5 of the APCD CEQA Air Quality Handbook, the following mitigation measures would apply to the Project.

Mitigation Measures Included from APCD CEQA Air Quality Handbook				
Measure #	Measure Type	Mitigation Measure	Pollutant Reduced¹	Applicant(s) Will Include This Mitigation
Applicable to All Subareas				
1.	Site design, Transportation	Improve job / housing balance opportunities within communities.	O, P, GHG	All Subarea 2 will pay affordable housing in lieu fee. Subarea 3 would be below market rate.
2.	Site design	Orient buildings toward streets with automobile parking in the rear to promote a pedestrian-friendly environment.	O, P, GHG	All
3.	Site design	Provide good access to/from the development for pedestrians, bicyclists, and transit users.	O, P, GHG	All Improvements to East Cherry Avenue include new bicycle lanes and sidewalks, where none exist now. The collector road will have bicycle lanes and sidewalks.
4.	Site design	Pave and maintain the roads and parking areas	P	All
5.	Site design	Increase density within the urban core and urban reserve lines.	O, P, GHG	All Assumed 5 dwelling units per acre for Subarea 2 and 15 dwelling units/acre for Subarea 3. Subarea 1 = 36 full time equivalent jobs.
6.	Site design; transportation	Provide easements or land dedications and construct bikeways and pedestrian walkways.	O, P, GHG	All
7.	Energy efficiency	Utilize built-in energy efficient appliances (i.e. Energy Star®).	O, P, GHG	All Assume 100% of

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				appliances would be energy efficient for all subareas.
8.	Energy efficiency	Utilize energy efficient interior lighting.	O, P, GHG	All 100% lighting energy reduction for all subareas.
Applicable to Subarea 1				
9.	Site design	Driveway design standards (e.g., speed bumps, curved driveway) for self-enforcing of reduced speed limits for unpaved driveways.	P	Subarea 1 Assumed 15 MPH for unpaved roads.
10.	Site design	Development is within 1/4 mile of transit centers and transit corridors.	O, P, GHG	Subarea 1 Closest transit stop is at Traffic Way & Fair Oaks.
11.	Site design	No residential wood burning appliances.	O, P, GHG	Subarea 1
12.	Site design	Trusses for south-facing portions of roofs shall be designed to handle dead weight 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.	O, GHG	Subarea 1
13.	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	Subarea 1
14.	Energy efficiency	Plant drought tolerant, native shade trees along southern exposures of buildings to reduce energy used to cool buildings in summer.	O, GHG	Subarea 1 Minimum of 120 trees planted.
15.	Energy efficiency	Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available locally if possible.	O, DPM, GHG	Subarea 1
16.	Energy efficiency	Install high efficiency heating and cooling systems.	O, GHG	Subarea 1
17.	Energy efficiency	Utilize high efficiency gas or solar water heaters.	O, P, GHG	Subarea 1
18.	Energy efficiency	Utilize double-paned windows.	O, P, GHG	Subarea 1
19.	Energy efficiency	Utilize low energy street lights (i.e. sodium).	O, P, GHG	Subarea 1
20.	Energy efficiency	Install door sweeps and weather stripping (if more efficient doors and windows are not available).	O, P, GHG	Subarea 1
21.	Energy efficiency	Install energy-reducing programmable thermostats.	O, P, GHG	Subarea 1

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22.	Energy efficiency	Participate in and implement available energy-efficient rebate programs including air conditioning, gas heating, refrigeration, and lighting programs.	O, P, GHG	Subarea 1
23.	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	Subarea 1
24.	Energy efficiency	Utilize onsite renewable energy systems (e.g., solar, wind, geothermal, low-impact hydro, biomass and bio-gas).	O, P, GHG	Subarea 1
25.	Energy efficiency	Eliminate high water consumption landscape (e.g., plants and lawns) in residential design. Use native plants that do not require watering and are low ROG emitting.	O, GHG	Subarea 1
26.	Transportation	Project provides a display case or kiosk displaying transportation information in a prominent area accessible to employees or residents.	O, P, GHG	Subarea 1
27.	Transportation	Provide electrical charging station for electric vehicles.	O, P, GHG	Subarea 1
28.	Transportation	Provide free-access telework terminals and/or wi-fi access in multi-family projects.	O, P, GHG	Subarea 1
Applicable to Subarea 2				
29.	Site design	Incorporate outdoor electrical outlets to encourage the use of electric appliances and tools.	O, P, GHG	Subarea 2 Includes 20% electric leafblower and chainsaw.
30.	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	Subarea 2 East Cherry Avenue = 100% improvement. Collector road = 25%.
31.	Energy efficiency	Orient 75 percent or more of homes and/or buildings to be aligned north / south to reduce energy used to cool buildings in summer.	O, GHG	Subarea 2
32.	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	Subarea 2
33.	Energy efficiency	Utilize low energy traffic signals (i.e. light emitting diode).	O, P, GHG	Subarea 2
34.	Energy efficiency	Utilize onsite renewable energy systems (e.g., solar, wind,	O, P, GHG	Subarea 2 PVs will be an

3.3 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

		geothermal, low-impact hydro, biomass and bio-gas).		option for home buyers.
35.	Transportation	Provide storage space in garage for bicycle and bicycle trailers, or covered racks / lockers to service the residential units.	O, P, GHG	Subarea 2
Applicable to Subarea 3				
36.	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	Subarea 3
37.	Site design	Incorporate outdoor electrical outlets to encourage the use of electric appliances and tools.	O, P, GHG	Subarea 3 Includes 20% electric leafblower and chainsaw.
38.	Energy efficiency	Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available locally if possible.	O, DPM, GHG	Subarea 3
39.	Energy efficiency	Install high efficiency heating and cooling systems.	O, GHG	Subarea 3
40.	Energy efficiency	Utilize double-paned windows.	O, P, GHG	Subarea 3
41.	Energy efficiency	Install door sweeps and weather stripping (if more efficient doors and windows are not available).	O, P, GHG	Subarea 3
42.	Energy efficiency	Install energy-reducing programmable thermostats.	O, P, GHG	Subarea 3

¹ O = Ozone; P = Particulate; DPM = Diesel Particulate Matter; GHG = Greenhouse Gas (GHG)

Plan Requirements and Timing. The Applicants are required to implement the above standard mitigation measures from the APCD *CEQA Air Quality Handbook* including those specified above prior to development plan or permit approval. 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 can work with the Applicants 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 Applicants in accordance with the

APCD’s *CEQA Air Quality Handbook*. However, with incorporation of the above mitigation, long-term operational impacts would be just above the operational emissions for ROG and NO_x, and PM_{2.5}, and would therefore be significant and unavoidable (see Table 3.3-9).

Table 3.3-9. Maximum Long-term Operational Emissions (Mitigated)

	ROG	NO _x	ROG + NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}	CO _{2e}
Overall Operational (Maximum Daily Emission)								
Area (lbs/day)	5.87	0.07	5.94	5.65	0.00033	0.03	0.03	10.36
Energy (lbs/day)	0.24	2.17	2.41	0.78	0.00716	0.1	0.1	1,440.2
Mobile (lbs/day)	6.47	10.72	17.19	57.58	0.11	7.76	2.18	8,353.6
Total (lbs/day)	12.58	12.95	25.54	64.02	0.11	7.88	2.3	9,804.1
Threshold (lbs/day)	--	--	25	--	--	25	1.25	--
Significant?	--	--	YES	--	--	NO	YES	--

Impact

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

The proposed Project would generate diesel particulate matter from construction and operational activities within 1,000 feet of single family residences adjacent to the northeast and to the south, Vagabond Mobile Home Park adjacent to the southwest containing approximately 25 units, and the St. Barnabas’ Episcopal Church located on the adjacent hillside property to the southeast. Diesel particulate matter 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 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 PM₁₀ 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, dry cleaners, and large gas stations as potential sources of TACs. The proposed Project would comprise residential, hotel, and restaurant 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 proposed 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 550 feet to the southwest of Subarea 2, and a Mobil gas station is located approximately 250 feet to the southwest of Subarea 2. As the proposed 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 location is outside all relevant buffer zones to potential substantial TAC emissions in the vicinity, and with implementation of the mitigation measures listed below, the proposed Project's potential impacts to sensitive receptors would be ***less than significant with mitigation.***

Mitigation Measures for All Subareas

MM AQ-3a The Applicants shall implement the following Best Available Control Technology (BACT) for diesel-fueled construction equipment, where feasible, to minimize the exposure of diesel exhaust to sensitive receptors:

- *Further reduce emissions by expanding use of Tier 3 and Tier 4 off-road and 2010 on-road compliant engines;*
- *Repowering equipment with the cleanest engines available; and,*
- *Installing California Verified Diesel Emission Control Strategies.*

MM AQ-3b The Applicants shall ensure that all equipment used in operational activities has the necessary APCD permits when appropriate. To minimize potential delays, prior to the start of development within each subarea, the APCD's

Engineering Division shall be contacted for specific information regarding permitting requirements.

Timing. The Applicants are required to adhere to measures throughout all grading, hauling, and construction activities. The Applicants shall coordinate with the APCD prior to permit issuance.

Monitoring. City staff shall ensure measures are on plans. APCD inspectors shall conduct periodic site visits to ensure compliance and respond to nuisance complaints.

Residual Impact

Impacts due to the close proximity of sensitive receptors to diesel emissions during construction and operations are potentially significant, but mitigable. As recommended by the APCD, the Applicants would work with the APCD to develop the appropriate level of diesel particulate control technology to apply to construction equipment. Implementation of the above-mentioned mitigation measure would reduce residual impacts related to exposing sensitive receptors to substantial pollutant concentrations to less than significant.

Impact

AQ-4 Construction and operation of the proposed Project would result in less than significant impacts to global climate change from the emissions of greenhouse gases if the Project is consistent with the City's Climate Action Plan (Less than Significant).

Construction Emissions

Construction activities for Subareas 1, 2, and 3 are assumed to occur over a period of approximately 18 months for the purposes of this analysis. Based on CalEEMod estimates, construction activities for the Project would generate an estimated 778.80 MT of CO₂e (as shown in Table 3.3-10). Amortized over a 25-year period (the assumed life of the Project), construction of the proposed Project would generate approximately 31.15 MT of CO₂e per year.

Table 3.3-10. Estimated Construction GHG Emissions (Mitigated)

Year	Annual Emissions MT CO _{2e}
2017	554.69
2018	224.11
Total	778.80
Amortized over 25 years	31.15

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

Operational Indirect and Stationary Direct Emissions

Operational emissions would be generated from area, energy use, solid waste, water use, and transportation. Energy use emissions assume installation of energy efficient appliances. Emissions from electricity are estimated at 793.52 MT CO_{2e} from Natural Gas. Annual emissions from all generated solid waste would be approximately 67.69 MT CO_{2e}. Water use emissions assume the installation of low flow plumbing fixtures and use of reclaimed water for landscaping. Emissions from water use would be approximately 20.72 MT CO_{2e}. GHG emissions associated with mobile sources were estimated at 966.02 MT CO_{2e} using CalEEMod. Table 3.3-11 shows a summary of these emissions.

Table 3.3-11. Estimated Operational GHG Emissions (Mitigated)

Emission Source	Annual Emissions MT CO _{2e}
Area	1.54
Energy Use	793.52
Solid Waste	67.69
Water Use	20.72
Mobile Sources	966.02
Total	1,849.48

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

Total operational emissions would be approximately 1,849.48 MT CO_{2e}. Combined with construction emissions amortized over a 25-year period (31.15 MT CO_{2e}), total GHG emissions for the proposed Project would be 1,880.63 MT CO_{2e}.

The City’s Climate Action Plan is designed as a Qualified GHG Reduction Plan, consistent with CEQA Guidelines Section 15183.5(b). The Climate Action Plan forecasts Arroyo Grande’s GHG emissions to be 93,513 MT CO_{2e} by 2020. The City will need to reduce its GHG emissions by 3,914 MT CO_{2e} from the adjusted forecast by 2020 to meet its 15 percent reduction target. The GHG reduction measures in the Climate Action Plan are

estimated to reduce the City's GHG emissions by 5,371 MT CO₂e by 2020. The proposed Project already implements measures such as improving and expanding the City's bicycle, pedestrian, and transit network and infrastructure, and includes Transportation Demand Management (TDM) incentives. Combined with other measures from the Climate Action Plan feasible for the Project to implement, impacts from greenhouse gas emissions would be *less than significant*.

Mitigation Measures

MM AQ-2b above would apply.

Residual Impact

While this impact is found to be less than significant, implementation of *MM AQ-2b* above would further ensure that this impact is less than significant.

Impact

AQ-5 The proposed 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 CAP means that stationary and vehicle emissions associated with the proposed Project are accounted for in the Clean Air Plan's emissions growth assumptions.

According to the County of San Luis Obispo 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 Clean Air Plan's population estimate for the City is 18,988 by 2015, and 305,854 for the County of San Luis Obispo by 2015. According to 2013 estimates by the United States Census Bureau, both the City and County populations are well under the CAP's projected population estimates. However, the population growth from the Project would exceed the Clean Air Plan projections for the Project site, as Subareas 2 and 3 are currently zoned for agriculture. The proposed Project would include 58 single-family residential lots that would add a population of

approximately 140 persons. This is based on the number of dwelling units (58) multiplied by the average number of persons per household in the City of Arroyo Grande. Additionally, the Project proposed to include 10 senior citizen studio apartments which would add an additional 10 persons to the population resulting in a net total of 150 persons in the Project vicinity. As described in the preceding Impact AQ-2 analysis, the proposed Project would result in significant and unavoidable long-term operation-related air quality impacts generated by area, energy, and mobile emissions; therefore, the proposed 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 for the Project site, as Subareas 2 and 3 are currently zoned for agriculture. As described in Section 3.10, *Transportation and Traffic*, the proposed Project would create 157 new PM peak-hour vehicle trips. The trip generation rate per day at the Project site is 1,646. The rate of increase in vehicle trips and miles traveled would exceed the Clean Air Plan projections for the Project site; therefore, the proposed 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 San Luis Obispo 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 TCM's located in the CAP 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. Out of APCD's nine TCMs included in the CAP, only one of these TCMs, T-3 Bicycling and Bikeway Enhancements, would be included as part of

the proposed Project. Implementation of mitigation measures MM AQ-2a and b, and MM AQ-5a would reduce inconsistencies with TCMs in the Clean Air Plan.

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 proposed Project and would be implemented by the proposed Project.

The proposed Project could hinder the County's ability to maintain attainment of the State ozone standard, 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 above would apply.

MM AQ-5a Consistent with the City's Goal CT4 to promote transit use, the Applicants shall coordinate with the City Public Works and Community Development Department and work with SLORTA and SCT to establish a sheltered transit stop on East Cherry Avenue near the Project site.

Requirements and Timing. The City shall determine the need and exact location for an additional transit stop, and shall coordinate with the Applicants to determine the appropriate actions required, and/or fair share of payment for funding the additional transit stop. Based on the findings, the Applicants shall submit payment of their fair share of funding prior to issuance of use or CUP permits.

Monitoring. The City would be responsible for determining appropriate actions and/or the amount of payment of fair shares for the Applicants commensurate with metrics that demonstrate the relative level and intensity of proposed development (e.g., square footage, land use type, trip generation, etc.).

Residual Impact

In accordance with the San Luis Obispo APCD's *CEQA Air Quality Handbook*, all standard mitigation measures and feasible discretionary mitigation measures must be incorporated into the Project.

The design of the proposed Project would require relatively substantial changes (e.g., inclusion of mixed-use, housing, etc.) to reduce inconsistency with overall land use planning principles contained in the Clean Air Plan. However, residual impacts would be significant and unavoidable.

3.3.5 Cumulative Impacts

By their nature, air quality thresholds are based on regulatory thresholds that already address long-term cumulative growth. The proposed Project would therefore contribute to both local and regional cumulative impacts associated with growth and development.

Impacts due to the close proximity of sensitive receptors to diesel emissions during construction and operations are not significant for the Project, but would contribute incrementally to cumulative impacts on sensitive receptors in the vicinity. Mitigation measures would be implemented to reduce the diesel emissions and maintain emissions at a less than significant level.

Long-term operation of the proposed Project would result in significant and unavoidable localized air quality emissions; therefore, the proposed Project would contribute cumulatively and considerably to localized air quality emissions throughout the City and region.

The proposed Project includes a hotel and a restaurant, patrons would consist of both pass-through travelers as well as destination visitors to use the visitor-serving uses proposed. While this would result in additional GHG emissions relative to existing condition, providing the proposed Project remains consistent with the City's Climate Action Plan GHG reduction strategies, the cumulative impact would remain less than significant.