3.3 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

This section analyzes air quality and greenhouse gas (GHG) emissions impacts associated with the Project, including local and regional air quality within the County. Air quality is evaluated according to the concentration of pollutants in ambient air. The U.S. Environmental Protection Agency (U.S. EPA) and California Environmental Protection Agency (CalEPA) have established national and state criteria to protect public health and welfare for seven criteria pollutants, including carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), 10-micron particulate matter (PM_{10}), 2.5-micron particulate matter ($PM_{2.5}$) and lead (Pb). The CalEPA has also established state criteria for sulfates, hydrogen sulfide (H_2S), and visibility reducing particulates. 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.).

3.3.1 Environmental Setting

3.3.1.1 Regional Climate and Meteorology

The County's climate is Mediterranean with warm dry summers and cool damp winters. Inland areas typically experience a wider range of temperatures than on the coast due to the separation of regions by coastal mountain ranges. The warmest month in the County is generally September and the coolest month is January. 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 is 48 degrees Fahrenheit, but can drop to the 30s along the coast to the 20s inland (Western Regional Climate Center 2016).

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 (City of San Luis Obispo 2014).

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-pressure system 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 wind. Pollutants may accumulate more during this time of year, remaining over the ocean for a few days and being carried back onshore. Strong inversions, or a deviation in the typical decrease in temperature with respect to altitude, can form at this time, trapping pollutants near the ground surface; this effect is intensified when the Pacific high-pressure system weakens and moves inland to the east. This may produce a condition known as Santa Ana winds 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 higher pollutant concentrations.

Local meteorological conditions in the Project vicinity typically consist of average temperatures varying from 40 to 70 degrees Fahrenheit seasonally, with precipitation observed 33 percent of the year, mainly from December through March. Wind speeds vary from 0 to 20 mph throughout the year, and the wind is most often out of the northwest and west. 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 (San Luis Obispo County Air Pollution Control District [SLO County APCD] 2001).

3.3.1.2 Greenhouse Gases and Global Climate Change

The U.S. EPA defines climate change as "any significant change in the measures of climate lasting for an extended period of time." In other words, climate change includes major changes in temperature, precipitation, or wind patterns, among other conditions, that occur over several decades or longer. Scientific consensus is that human-caused emissions of GHGs above natural levels is the primary contributor to global climate change. When GHG levels increase in the atmosphere, the greenhouse effect intensifies on Earth and drives long-term climate change. GHGs trap heat in the atmosphere and regulate the Earth's temperature and include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrogen oxides (NO_x), chlorofluorocarbons (CFCs) and O_3. The largest anthropogenic source of emissions comes in the form of CO_2, which makes up approximately 82 percent of U.S. GHG emissions annually (U.S. EPA 2017). Although methane, nitrogen oxides,

chlorofluorocarbons, and hydrocarbons make a smaller portion of GHG volume, they are powerful greenhouse gases and play an outsized role in climate change.

The primary human activities that emit GHGs include the electric power industry, transportation, industrial/manufacturing, agricultural, commercial, and residential uses (U.S. Energy Information Administration [U.S. EIA] 2017). The main sources of GHGs due to human activity include the combustion of fossil fuels and deforestation (loss of CO_2 sequestration); livestock and rice paddy farming, 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) (U.S. EPA 2017).

In 2015, the State of California produced approximately 363.5 million metric tons of CO_2 equivalent (MMT CO_2e) emissions from fossil fuel combustion. Sector sources of these CO_2 emissions are as follows: transportation (56.7 percent), industry (19.6 percent), electricity generation (12.2 percent), residential (6.4 percent), and commercial (5.1 percent) (U.S. EIA 2017). In 2016, the City's emissions amounted to 242,210 metric tons of CO_2 equivalent (MT CO_2e), an approximately 10 percent reduction compared to the City's 2005 GHG inventory which amounted to 269,720 MT CO_2e. In 2016, GHG emissions in the City were from transportation (51 percent), commercial and industrial energy (electricity and natural gas) (22 percent), residential energy (electricity and natural gas) (18 percent), solid waste (6 percent), wastewater (<1 percent), and off-road sources (6 percent) (City of San Luis Obispo 2018).

The global climate crisis has already impacted the City and will continue to affect an increasing range of resource areas, including hydrological and biological resources. Projected impacts to the region caused by global climate change include rising sea levels, coastal flooding, increased tsunami hazards, drought, increased fire frequency, size, and severity, and sediment transportation and deposition-related impacts on aquatic ecosystems (California Natural Resources Agency 2018).

3.3.1.3 Regional Air Quality

The County is part of the South Central Coast Air Basin (SCCAB), 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.

3.3.1.4 Regional Emissions

Under the Federal Clean Air Act (FCAA) of 1963, federal air quality standards, known as the National Ambient Air Quality Standards (NAAQS), were established for the criteria air pollutants described previously. Similarly, the California Clean Air Act (CCAA) of 1988 establishes state air quality standards that are more stringent than the NAAQS as part of the California Ambient Air Quality Standards (CAAQS). Measurements of ambient concentrations of criteria air pollutants are used by the U.S. EPA and the California Air Resources Board (CARB) to assess and classify the air quality of each air basin, county, or in some cases a specific developed area. The classification is determined by comparing monitoring data with the national and state air quality standards. If a pollutant concentration in an area is lower than the standard, the area is classified as being in "attainment." If the pollutant exceeds the standard, the area is in marginal, moderate, serious, severe, or extreme "non-attainment," depending on the magnitude of the air quality standard exceedance. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated "unclassified."

The County has historically been designated as in non-attainment of state standards for 1-hour and 8-hour O_3 (see Table 3.3-1). The national 8-hour O_3 standard was lowered from 75 to 70 parts per billion (ppb) on October 1, 2015. The eastern portion of the County is still designated as in non-attainment for the new standard, while the western portion of the County is designated as within attainment status (SLO County APCD 2019). O_3 is a secondary pollutant that is not produced directly by a specific emission source, but rather is formed by a reaction between NO_x and reactive organic gases (ROGs) in the presence of sunlight. Primary sources of NO_x are motor vehicles (over 50 percent), public utility power generation, and fuel combustion by various industrial sources. O_3 can impact public health at higher concentrations by causing respiratory irritation and other effects 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 (U.S. EPA 2018).

Table 3.3-1. Ambient Air Quality Standards and County Attainment Status (2019)

Pollutant	Average Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	**Non-Attainment**	--	**Non-Attainment Eastern County** – Attainment Western County (Project site)
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)	
Respirable Particulate Matter (PM_{10})	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 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 (NO_2)	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 (SO_2)	1 Hour	0.25 ppm (655 µg/m^3)	Attainment	75 ppb (196 mg/m^3)	Unclassified*
	3 Hour	--		0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm	
	Annual Arithmetic Mean	--		0.030 ppm	
Lead (Pb)	30-Day Average	1.5 µg/m^3	Attainment	--	No Attainment Information
	Calendar Quarter	--		1.5 µg/m^3	
	Rolling 3-Month Average	--		0.15 µg/m^3	

Table 3.3-1. Ambient Air Quality Standards and County Attainment Status (2019) (Continued)

Pollutant	Average Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Visibility Reducing Particulates	8 Hour	Extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particulates when relative humidity is less than 70 %. Method: Beta Attenuation and Transmittance through Filter Tape.	Attainment	No Federal Standards	
Sulfates	24 Hour	25 µg/m^3	Attainment		
Hydrogen Sulfide (H2S)	1 Hour	0.03 ppm (42 µg/m^3)	Attainment		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)	No Attainment Information		

Notes: ppm = parts per million; ppb = parts per billion
µg/m^3 = micrograms per cubic meter; mg/m^3 = milligram per cubic meter
-- = Not applicable
*Unclassified (U.S. 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 (U.S. EPA/federal definitions): Any area that meets the national primary or secondary ambient air quality standard for that pollutant. (CARB definition): State standard was not exceeded during a three-year period.
Non-Attainment (U.S. 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. (CARB definitions): State standard was exceeded at least once during a three-year period.
Source: SLO County APCD 2017b.

The County is in non-attainment for the state PM_{10} standards; however, the County is within attainment of national PM_{10} standards. 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 (U.S. EPA 2018).

3.3.1.5 Emissions in the Vicinity of the Project Site

The Project site is composed of grazing land and disturbed/developed area in the northwestern area of the site that comprises the historic Froom Ranch Dairy complex (see Section 3.5, *Cultural and Tribal Cultural Resources*), a construction storage yard, and quarry/aggregate mining pit and storage area. Ongoing construction storage yard activities

generate fugitive dust via uncovered stockpiles of various materials such as dirt and rock and pollutant emissions from operation of heavy construction equipment and trucks. Information about the daily average operations of equipment at the Project site varies substantially due to the nature of the existing construction business. However, based on field observations and aerial imagery, the regular driving of heavy trucks and earthmoving equipment within the quarry and on the property also contributes to existing onsite fugitive dust and diesel particulate emissions. The 3.2-acre onsite stormwater detention basin does not produce emissions besides those associated with infrequent maintenance clearing; based on aerial imagery, clearing of vegetation within the basin occurred in 2013 and 2018. The remainder of the site is unimproved, consisting of natural areas that do not currently produce emissions.

The Project site is surrounded to the north, east, and south by urban development, including the Irish Hills Plaza shopping center to the north, several automobile dealerships to the east, and four hotels and Mountainbrook Church to the south. These uses generate traffic on local roads. LOVR runs immediately east of the Project site and U.S. 101 is located as close as 400 and 600 feet south of the Specific Plan area. Vehicles in the Project vicinity contribute to existing emissions in the SCCAB, along with land uses, equipment, and industrial processes within urban areas, and agricultural uses in rural areas.

The Project site lies within the Naturally Occurring Asbestos (NOA) buffer area per the SLO County APCD's NOA map and is therefore subject to CARB's Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations. CARB has identified asbestos as a TAC that if inhaled may result in the development of lung cancer or cause other health hazards. NOA can be found in serpentine rock and can be released into the air when it is broken or crushed. In the County, serpentine rock is located in many regions, including the Project site. Work in serpentine areas requires a SLO County APCD pre-approved dust control plan and may include asbestos air monitoring. Prior to any grading activities at a site within an area potentially containing NOA, the Applicant is required to comply with the applicable sections contained in the NOA ATCM, including the California Code of Regulations (CCR) Title 17, Section 93105.

The air monitoring station located nearest to the Project site is the San Luis Obispo – Higuera Street station, located at 3220 S. Higuera Street, approximately 1.0 mile northeast of the Project site. This station has been active since 2005 and is operated by CARB and measures O_3, $PM_{2.5}$, and PM_{10} (CARB 2018). Table 3.3-2 summarizes the annual air quality emissions data for the local airshed between the years 2016-2018, with values

exceeding state emissions underlined (there were no federal exceedances at this monitoring station recorded during this period).[1] 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
2016	69	62	0/0	42	0	21	0
2017	74	66	0/0	<u>62</u>	3	25	0
2018	62	53	0/0	46	0	13	0
Threshold	90	70		50		-	

Notes: ppb = parts per billion, µg/m3 = micrograms per cubic meter; <u>underlined</u> values have exceeded state emissions standards; there are no values at this station that exceed federal emission standards.
Source: CARB 2018; 2019.

3.3.1.6 Sensitive Receptors

The SLO County APCD defines sensitive receptors as people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s) (SLO County APCD 2012). These uses are considered sensitive as they are more likely to contain populations of people who have an increased sensitivity to air pollution or environmental contaminants. Children under the age of 16 are particularly susceptible to health problems from air emissions exposure for developing lungs, as well as elderly people over 65, individuals with respiratory and cardiovascular health problems, and people conducting strenuous work or active exercise.

There are no existing sensitive receptors within or immediately adjacent to the Project site. The Project site is surrounded by undeveloped land in the Irish Hills Natural Reserve and commercial development, including four hotels, Mountainbrook Church, automobile dealerships and service centers, and the Irish Hills Plaza shopping center. Mountainbrook Church lies approximately 75 feet from the southern boundary of the Project site and 580 feet from the Upper Terrace. Mountainbrook Church is open daily and offers religious services throughout the week, including classes and programs for children and youth, with

[1] A local airshed is defined as a geologic area that shares a common air flow or atmosphere that is exposed to the same condition, such as source of pollutants or dispersion.

most programs offered during evenings and weekends. Four hotels (Rose Garden Inn, Courtyard by Marriott, Hampton Inn & Suites, and Motel 6) are located 40 to 160 feet east of the Project site boundary. The closest school is Pacific Beach High School, which is approximately 0.27 mile northwest of the Project site and is considered the nearest sensitive receptor. Neither the Mountainbrook Church or the hotels along Calle Joaquin are considered sensitive receptors to air pollutants, as guests and visitors of these developments are considered transient and would not be exposed to air pollutant emissions for extended periods of time. The closest existing residential area is approximately 0.3 mile northeast of the Project site.

3.3.1.7 Odors/Nuisance Emissions

Common sources of odors and nuisance emissions include wastewater treatment plants, landfills, composting facilities, petroleum refineries, and chemical manufacturing facilities. The nearest such source of odor to the Project site is the San Luis Obispo Water Resource Recovery Facility (WRRF) located approximately 0.66 mile east of the Project site boundary, across U.S. 101. Odors from the WRRF, which are caused from H_2S, a gas that smells like rotten eggs, are not perceptible at the Project site based on field reconnaissance by the EIR consultant from 2017 through 2019.

3.3.2 Regulatory Setting

Air quality and GHG emissions are governed primarily by federal and state laws, although local jurisdiction laws would also apply to future development under the Project. Federal, state, and local regulations that are directly relevant to the Project are summarized below.

3.3.2.1 Federal

Federal Clean Air Act

The 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 U.S. EPA to establish NAAQS. The NAAQS help to ensure basic health and environmental protection from air pollution. The FCAA 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 U.S. EPA is the federal agency responsible for enforcing the FCAA of 1970 (as amended in 1977 and 1990). The U.S. EPA has established NAAQS for O_3, CO, NO_2, SO_x, PM_{10}, $PM_{2.5}$, and Pb, as shown in Table 3.3-1. The U.S. 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 the CalEPA has established more stringent emissions standards for vehicles sold in California).

As part of its enforcement responsibilities, the U.S. EPA requires each state that is in non-attainment for any federal criteria pollutant to prepare and submit a State Implementation Plan (SIP) that identifies the measures necessary 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 the federal standards.

3.3.2.2 State

California Clean Air Act

The CCAA was enacted in 1988 and 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. The CAAQS were established within the CCAA of 1988 for criteria pollutants and additional standards for sulfates, H_2S, vinyl chloride, and visibility reducing particles (see Table 3.3-1). The CCAA requires each APCD in California to adopt strategies for achieving the NAAQS and CAAQS by the earliest practicable date. CARB is responsible establishes emissions standards for vehicles sold and operated within the state, while the local APCD is responsible for enforcing standards and regulating stationary sources.

California Air Resources Board

CARB, a part of CalEPA, 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 (vpd) or more, or rural roads with 50,000 or more vpd. 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 U.S. 101 located approximately 400 to 800 feet from Project site.

California Global Warming Solutions Act (Assembly Bill 32)

The California State Legislature enacted Assembly Bill (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 MMT CO_2e on December 6, 2007 (CARB 2007). Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 MMT CO_2e.

Senate Bill 32 and Assembly Bill 197

Senate Bill (SB) 32 and AB 197 were both approved by Governor Jerry Brown on September 8, 2016 and became effective on January 1, 2017. SB 32 sets into law the targets for GHG emissions reductions at 40 percent of 1990 levels by 2030, as mandated under Governor Jerry Brown's Executive Order B-30-15. AB 197 is paired with SB 32 and is a measure that increases legislative oversight over the CARB, in order to ensure strategies to lower emissions favor those most impacted by climate change.

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, set into state law by SB 32, establishes a California 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 by 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. The reduction targets mandated under Executive Order B-30-15 were set into law under SB 32 in September 2016.

Executive Order B-55-18

On September 10, 2018, Governor Edmund G. Brown Jr. issued Executive Order B-55-18 to establish a new ambitious statewide goal to achieve carbon neutrality as soon as possible,

but no later than 2045, and achieve and maintain net negative targets of reducing GHG emissions.

California Air Resources Board: Scoping Plan

On December 11, 2008, CARB adopted the Scoping Plan as directed by AB 32 (CARB 2008). The Scoping Plan identifies actions designed to reduce overall GHG emissions in California to the levels required by AB 32. Measures applicable to development projects include those related to energy-efficiency building and appliance standards, the use of renewable sources for electricity generation, regional transportation targets, and green building strategies. Relative to transportation, the Scoping Plan includes nine measures or recommended actions related to reducing vehicle miles traveled (VMT) and vehicle GHGs through fuel and efficiency measures. These measures would be implemented statewide rather than on a project-by-project basis.

CARB released the First Update to the Climate Change Scoping Plan in May 2014 to provide information on the development of measure-specific regulations and to adjust projections in consideration of the economic recession (CARB 2014). In the update, CARB estimated the AB 32 Baseline 2020 to be 509 MMT CO_2e. The Scoping Plan's current estimate of the necessary GHG emission reductions is 78 MMT CO_2e (CARB 2014). This represents an approximately 15.32-percent reduction. CARB is forecasting that this would be achieved through the following reductions by sector: 25 MMT CO_2e for energy, 23 MMT CO_2e for transportation, 5 MMT CO_2e for high-global warming potential (GWP) GHGs, and 2 MMT CO_2e for waste. The remaining 23 MMT CO_2e would be achieved through Cap-and-Trade Program reductions. This reduction is flexible – if CARB receives new information and changes the other sectors' reductions to be less than expected, the agency can increase the Cap-and-Trade Program reduction (and vice versa).

In response to EO B-30-15 and SB 32, all state agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. CARB was directed to update the Scoping Plan to reflect the 2030 target, and, and adopted the 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target on November 30, 2017. The 2030 mid-term target outlined in the Scoping Plan is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue driving down emissions. The Second Update to the Scoping Plan was approved by CARB on December 14, 2017.

Senate Bill 375

Passing the Senate on August 30, 2008, SB 375 was signed into law on September 30, 2008. Per SB 375, the transportation sector is the largest contributor of GHG emissions. 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.

Senate Bill 743

SB 743, adopted September 27, 2013, encourages land use and transportation planning decisions and investments that reduce VMT that contribute to GHG emissions. SB 743 eliminated the measurement of automobile delay, including level of service (LOS), as a metric for determining traffic impacts. SB 743 required the State Office of Planning and Research (OPR) to develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of projects within transit priority areas that promote the reduction of GHG emissions, the development of multi-modal transportation networks, and a diversity of land uses. For land use projects, OPR identified VMT per capita, VMT per employee, and net VMT as new metrics for transportation analysis. Additional provisions of SB 743 include reforming aesthetics and parking CEQA analysis for urban infill projects and in transit priority areas. Regulatory changes to the CEQA Guidelines that implement SB 743 were approved on December 28, 2018. July 1, 2020 is the statewide implementation date and agencies may opt-in use of new metrics prior to that date. OPR released a December 2018 Technical Advisory that contains recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures.

Air Toxics Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations

Under CARB's NOA ATCM for Construction, Grading, Quarrying, and Surface Mining Operations, prior to any grading activities at a site identified as having the potential to contain NOA, the Owner or Operator will be required to comply with the applicable sections contained in the NOA ATCM. Projects that require grading within an area where an NOA may be present are required to demonstrate adequate dust control measures with the SLO County APCD. For example, for projects that require grading of 1 acre or more

in serpentine, a geologic evaluation and Asbestos Dust Mitigation Plan must be submitted to the SLO County APCD.

3.3.2.3 Local

City of San Luis Obispo Climate Action Plan

The City's Climate Action Plan, adopted by Resolution No. 10388 in 2012, is a strategic document based on 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. 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 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. 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 City is currently updating the Climate Action Plan, including an updated GHG inventory and measures to achieve a net-zero carbon emissions target communitywide. The updated plan will include strategies that can achieve 40 percent reduction from baseline levels by 2030, which will meet required SB 32 state reduction goals. In addition, at a City Council hearing held on September 18, 2018, the City declared its intent to adopt a target for achieving citywide carbon neutrality by the year 2035. The update to the Climate Action Plan will identify new measures and policies applicable to development within the City for reducing carbon emissions from various sources, including energy consumption, transportation, and organic waste disposal, to achieve this target.

Clean Energy Choice Program

The City is currently developing local amendments to the 2019 California Building Code (CBC) to encourage all-electric new buildings. When paired with Monterey Bay Community Power's carbon free electricity supply, all electric new buildings are carbon

free and avoid health and safety issues associated with fossil fuels and GHGs. At its meeting on Tuesday, September 3, 2019, the City Council approved the Clean Energy Choice Program. The City anticipates the second reading of the ordinance and subsequent implementation to occur in early 2020. The City joins more than 50 other California communities currently considering ways to encourage cleaner buildings. Unlike some cities that are banning natural gas entirely, the proposed Clean Energy Choice Program will provide options to people who want to develop new buildings with natural gas. New projects wishing to use natural gas will be required to build more efficient and higher performing buildings and offset natural gas use by performing retrofits on existing buildings or by paying an in-lieu fee that will be used for the same purpose.

County of San Luis Obispo Clean Air Plan and CEQA Air Quality Handbook

SLO County APCD adopted the Clean Air Plan in January 1992; the Clean Air 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. The Clean Air Plan also aims to reduce emissions from motor vehicles by establishing goals and targets for reducing personal vehicle trips and trip lengths, such as encouraging or promoting multimodal alternatives. The purpose of the 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.

In 2009, SLO County APCD adopted guidelines for assessment and mitigation of air quality impacts under CEQA. The CEQA Air Quality Handbook, which was updated in 2012 (SLO County APCD 2012) and subsequently amended in 2017 (SLO County APCD 2017), is an advisory document that provides lead agencies, consultants, and project applicants with uniform procedures for addressing air quality issues in environmental documents. The CEQA Air Quality Handbook also includes standard construction and operational mitigation measures that may be applied to projects that exceed SLO County APCD thresholds. For instance, SLO County APCD requires inclusion of Best Available Control Technologies (BACTs) for construction equipment when estimated O_3precursor emissions for the equipment and vehicle fleet are expected to exceed adopted thresholds of significance and implementation of fugitive dust control measures (watering of the grading site, vegetation of exposed soils, early roadway paving, construction vehicle speed control, etc.) for any project with a grading area greater than 4 acres or that are located within 1,000 feet of any sensitive receptor.

3.3.3 Environmental Impact Analysis

3.3.3.1 Thresholds of Significance

Air Quality CEQA Thresholds

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

a) Conflict with or obstruct implementation of the SLO County APCD's adopted Clean Air Plan (including providing for growth that is above the rate of growth contained in the Clean Air Plan);
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under an applicable federal or state ambient air quality standard;
c) Expose sensitive receptors to substantial pollutant concentrations; or
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Non-Applicable Threshold(s)

- Threshold (d) *(Other emissions affecting a substantial number of people)*: The Project would not involve the development of the types of land uses that generate non-criteria pollutant emissions or odors that would affect a substantial number of people 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 sources. Therefore, the Project would not have a potential to have an impact related to odors and nuisance emissions and this issue will not be further discussed.

SLO County APCD Clean Air Plan

As recommended by SLO County 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 projections contained in the current Clean Air Plan. The rationale for requiring the preparation of a consistency analysis is to ensure the attainment projections developed by SLO County APCD are met and maintained. SLO County 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 Clean Air Plan 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 Clean Air Plan been included in the plan to the maximum extent feasible?

SLO County APCD Significance Criteria (Air Quality and Criteria Air Pollutants)

Significance Criteria for Construction-Related Emissions

Short-term construction emission thresholds for the SLO County APCD (Table 3.3-3), as stated in SLO County APCD's CEQA Air Quality Handbook are described 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 construction projects, the 137 pounds per day (lbs/day) threshold requires Standard Mitigation Measures;
- Quarterly – Tier 1: For construction projects exceeding the 2.5 tons per quarter (ton/qtr) threshold, Standard Mitigation Measures and Best Available Control Technology (BACT) for construction equipment are required. Offsite mitigation may be required if feasible mitigation measures are not implemented, or if no mitigation measures are feasible for the project; and
- Quarterly – Tier 2: For construction exceeding the 6.3 ton/qtr threshold, Standard Mitigation Measures, BACT, implementation of a Construction Activity Management Plan (CAMP), and offsite mitigation are required.

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.

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.

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: SLO County APCD 2012a.

Significance Criteria for Operational Emissions

Long-term operational emission thresholds for the County, as stated in SLO County APCD's CEQA Air Quality Handbook, have been set by SLO County 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 SLO County 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.

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 SLO County 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: Sa SLO County APCD 2012a.

GHGs and Climate Change CEQA Thresholds

According to Appendix G of the 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.

Significance Criteria for GHGs

The City has not adopted GHG emissions thresholds for use in CEQA documents, but SLO County 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. Lead agencies may select most applicable of the above thresholds to determine the significance of a project's GHG emission impact to a level of certainty based on the type of project.

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. The 2012 Climate Action Plan serves as the City's Qualified GHG Reduction Strategy, consistent with SLO County APCD guidance and CEQA Guidelines Section 15183.5(b), which allows for streamlining of the GHG impacts analysis of projects that are consistent with the Climate Action Plan. This EIR includes an analysis of the Project's conformance with the City's adopted Climate Action Plan. However, the Climate Action Plan was prepared to comply with the requirements of AB 32 and achieve the goals of the AB 32 Scoping Plan, which have a horizon year of 2020. The adopted Climate Action Plan does not reflect the SB 32 targets for GHG emissions reductions at 40 percent of 1990 levels by 2030. Therefore, the City's Climate Action Plan is not compliant with SB 32 and cannot be considered a qualified GHG reduction strategy for assessing the significance of GHG emissions generated by projects with a horizon year post 2020. Therefore, the Project is also evaluated against reduced quantitative GHG emissions thresholds, as discussed below.

Under SLO County APCD's two quantitative significance thresholds, a residential and/or commercial project is considered to result in a significant impact if annual GHG emissions exceed a Bright-Line threshold of 1,150 MT CO_2e or exceed an efficiency threshold of 4.9 MT CO_2e/service population (SP). The Bright-Line numeric threshold of 1,150 MT CO_2e/yr represents an emissions level below which a project's contribution to global climate change would be deemed less than "cumulatively considerable." However, emissions from projects that exceed the 1,150 MT CO_2e/yr Bright-Line Threshold could still be found less than cumulatively significant if the project as a whole would result in a GHG efficiency of 4.9 MT CO_{2e}/SP/yr or less. If projects as proposed exceed both thresholds, they would be required to implement mitigation measures to bring them below the 1,150 MT CO_{2e}/yr Bright-Line Threshold or within the 4.9 MT CO_{2e}/SP/yr Efficiency Threshold. If required mitigation could not bring a project below either threshold requirement, the project would be found cumulatively significant.

However, SLO County APCD's thresholds and the City's Climate Action Plan are specific to AB 32 goals and do not consider the 2030 GHG reduction targets contained in SB 32 that was adopted 2016. The 2017 Climate Change Scoping Plan sets the state on a course to reduce GHG emissions an additional 40 percent below 1990 levels by 2030 under SB 32. Within the Scoping Plan, CARB recommends a statewide target of no more than 6 MT CO_2e/SP/yr by 2030 (CARB 2017b). However, this statewide target is based on all emissions sectors in the state, statewide population forecasts, and necessary statewide reductions, and is not reflective of local conditions. In an attempt to inform new GHG

thresholds for land use development projects in compliance with the targets set forth in SB 32, the Association of Environmental Professionals (AEP) in 2016 released a Climate Change Committee White Paper which developed an example GHG efficiency target of 2.6 MT CO_2e/SP/yr by 2030 (AEP 2016).

The current SLO County APCD GHG quantitative thresholds for land use projects would achieve AB 32 targets but not SB 32 targets. Since the Project's operational year (2025) would exceed the AB 32 target year (2020) and given most recent guidance described above, it is reasonable to apply a reduced threshold to the Project. Therefore, the Project is also analyzed against the SLO County APCD GHG thresholds reduced by 40 percent to account for the continued reductions required by 2030 under SB 32. For this comparison, the bright line threshold was reduced to 690 MT CO_2e and the efficiency threshold was reduced to 2.65 MT of CO_2e/SP/yr for the purposes of analysis of Project impacts where current adopted thresholds do not uphold state law (SB 32) and City goals and policies, as further discussed below.

At a City Council hearing held on September 18, 2018, the City declared its intent to adopt a target for achieving citywide net-zero GHG emissions by the year 2035. For the purposes of this analysis, the Project's stationary (non-mobile) operational emissions are also analyzed for compliance with the City's 2035 net-zero GHG emissions target, as it aligns with current City objectives and is consistent with and exceeds the GHG emissions targets established under SB 32 and requirements of Executive Order B-55-18.

3.3.3.2 Impact Assessment Methodology

This analysis addresses both short-term construction impacts and long-term operational impacts from air pollutant emissions generated by the Project. Potential impacts are identified, 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's General Plan, the Draft FRSP, the County's Clean Air Plan, the City's Climate Action Plan, and the California Emissions Estimator Model (CalEEMod) runs completed for the Project (Appendix D). CalEEMod was performed for each phase of proposed Project implementation, as described in Section 2.6, *Project Construction*.

Criteria Pollutants

This analysis focuses on the air quality impacts that could occur from criteria 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 for ROG, NO_x, DPM, and PM_{10} were estimated using CalEEMod Version 2016.3.2 computer model, and then compared to the thresholds of significance defined above. See Appendix D for CalEEMod worksheet results.

The air quality analysis and CalEEMod estimates for criteria air pollutants follow the guidelines and methodologies recommended in SLO County APCD's CEQA Air Quality Handbook (2012). Construction emissions from heavy-duty diesel exhaust were calculated using SLO County APCD's CEQA handbook and typical construction equipment details provided in Section 2.6.2, *Construction Activities*. Emissions factors for calculating emissions from construction equipment, including fugitive dust emissions from ground disturbance and stockpile activities were based upon default CalEEMod assumptions supplemented by Project-specific details where reasonable. In accordance with SLO County APCD recommendations, an overall qualitative analysis was conducted to determine if emissions resulting from implementation of the Project would be consistent with the emissions projections in the most recent version of the Clean Air Plan.

Construction Air Quality Emissions

Construction emissions are estimated using CalEEMod for each phase of Project construction, including excavation and site preparation, building construction, and architectural coatings as presented in Table 2-7 of Section 2.6.1, *Project Construction Phases*. 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 (refer to Section 2.6, *Project Construction*).

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 reasonable worst-case emissions for this EIR, construction activity for the Project is assumed to occur over a five-year period beginning in 2020. See Section 2.6, *Project Construction,* for details about Project phasing.

Operational Air Quality Emissions

Operational emissions associated with the Project are estimated using CalEEMod for mobile source, area, and energy emissions. Mobile emissions would be generated by the resident, employee, visitor, and material delivery motor vehicle trips to and from the Project site. These are calculated based on the Project's Transportation Impact Study (TIS) trip generation and other default traffic assumptions (see Appendix J). Area source emissions would be generated by consumer products (e.g., household cleaning products), architectural coatings, and landscape maintenance equipment.[2] Energy source emissions would be generated by emissions resulting from electricity and natural gas consumption for space and water heating and powering electrical appliances. The default emissions were used for area and energy sources with consideration of SLO County APCD rules and regulations that would be required of the Project related to the Project's operations. Use-specific water demands estimated in the Project's Water Supply Assessment (Appendix K) were utilized for estimating air and GHG emissions from operational water demands. To determine if an air quality impact would occur, the increase in emissions was compared with SLO County APCD's operational thresholds.

Prior to full buildout of the Project by 2025, it is anticipated that the Lower Area of Villaggio would be fully occupied and operational starting in 2022, prior to completion the Upper Terrace of Villaggio and the Madonna Froom Ranch portion of the Specific Plan area. For the purposes of this analysis, full occupancy of the Specific Plan area is assumed to occur in 2024-2025, following completion of Madonna Froom Ranch.

GHG and Climate Change

Consistent with CEQA and SLO County APCD's recommendations, 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. In addition, as noted above, the Project's stationary (non-mobile) operational emissions are also analyzed for compliance with the City's 2035 net-zero GHG emissions target, as it aligns with current City objectives and is consistent with and exceeds the GHG emissions targets established under SB 32 and requirements of Executive Order B-55-18.

[2] SLO County APCD defines "area sources" emissions as non-vehicular emissions sources which include energy use, evaporative emissions from paints and solvents, fuel combustion by small utility equipment (e.g., lawnmowers, leaf blowers), residential wood burning, household products, and other small sources (SLO County APCD 2012).

In addition, GHG emissions associated with the construction and operation of the Project were estimated using CalEEMod (Appendix D). 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

GHGs from construction projects must be quantified and amortized over the life of a 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 SLO County APCD's CEQA Air Quality Handbook—Significance Thresholds for Project-Level Operational Emissions. To amortize the emissions over the life of a project, total GHG emissions for the construction activities would be divided by the project life (i.e., 50 years for residential projects and 25 years for commercial projects) then added to the annual operational phase GHG emissions.

The construction GHG analysis considers the Project's anticipated five-year construction schedule as well as the likely types and number of construction equipment to be used. Construction-related GHG emissions are amortized over 25 years per SLO County APCD methodology outlined in the CEQA Air Quality Handbook. Amortization over a 25-year period is selected for the Project due to the proposed mix of residential and commercial uses, as opposed to amortization of a 50-year period for solely residential projects, and therefore provides a conservative analysis of GHG emissions.

Operational GHG Emissions

The following activities are typically associated with the operation of residential and commercial uses, as well as senior living communities, that would contribute to the generation of GHG emissions:

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

Onsite use of natural gas and other fuels. For the purposes of this analysis, it is assumed that natural gas would be used by the Specific Plan development to heat the residential and commercial spaces; natural gas would also be utilized for water heating, cooking, laundry, and power backup. 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

(single-family, multi-family, and retirement), commercial space, health care, hotel, and recreational uses applying the default/typical 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 (single-family, multi-family, and retirement), commercial sf, health care, hotel, and recreational uses applying the default/typical consumption rates as presented in the CalEEMod modeling output.

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 result in the emission of both CH_4 and NO_x depending on the treatment method. Estimated emissions from potable water demand are based on CalEEMod default emissions factors and use-specific water demands that were calculated in the Water Supply Assessment prepared for the Project (Appendix K). Estimated emissions from the generation of wastewater is based on the number of residential and senior (independent and assisted) dwelling units, 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 residential and senior (independent and assisted) dwelling units, commercial space, health care, hotel, and recreational uses proposed by the Project.

3.3.3.3 Project Impacts and Mitigation Measures

This section discusses the potential air quality and GHG-related 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 emissions, including dust and air pollutant emissions.	MM AQ-1 MM AQ-2 MM AQ-3	Less than Significant with Mitigation
AQ-2. The Project would result in potentially significant long-term operational emissions.	MM AQ-4	Significant and Unavoidable
AQ-3. Release of toxic diesel emissions or naturally occurring asbestos during construction of the Project could expose sensitive receptors to emissions-related health risks.	No Mitigation Required	Less than Significant
AQ-4. The Project would be consistent with the City's Climate Action Plan, but would result in potentially significant GHG emissions during construction and operation which would be inconsistent with other state and local goals for reducing GHG emissions.	MM AQ-4 MM AQ-5 MM AQ-6	Significant and Unavoidable
AQ-5. The Project is potentially inconsistent with the SLO County APCD's Clean Air Plan.	MM AQ-2 MM TRANS-5 MM TRANS-8 MM TRANS-9 MM TRANS-10	Significant and Unavoidable

Impact AQ-1 The Project would result in potentially significant construction-related emissions, including dust and air pollutant emissions (Less than Significant with Mitigation).

Within each Project implementation phase, construction would consist of site preparation, grading, building construction, and paving. Substantial grading and earthmoving would be required to shape the site, realign Froom Creek, and raise the elevation of the Lower Area and Madonna Froom Ranch above the 100-year flood elevation. Project construction would generate significant construction air pollutant emissions, including fugitive dust (PM_{10} and $PM_{2.5}$) associated with grading and exhaust from heavy construction vehicles. During building construction, ROGs would be released during the application and drying of paints and architectural coatings.

Site preparation and grading would involve substantial earthmoving activities and heavy equipment use. Phase 1 (Installation of Project Infrastructure and Stormwater Management System) would involve rough grading and earthmoving activities associated with installation of private roads, public utility connections, LOVR frontage improvements, and the stormwater management system (including realignment of Froom Creek and

development of the proposed offsite stormwater detention basin). At the same time, grading of the Lower Area and Upper Terrace, in anticipation of later development under Phases 2 and 3, as well as rough grading of Madonna Froom Ranch, would occur, as fill from each phase would be balanced across the site. During this overlapping grading period, approximately 31,800 cubic yards (cy) of fill materials would be balanced onsite, while 220,000 cy of fill rock material would be imported to the site to raise the Lower Area by 1 foot above the 100-year flood elevation. In addition, the realignment of Froom Creek would require delivery of approximately 2,300 cy of rock material for bank stabilization and erosion protection along the creek. The extensive amounts of grading would require large amounts of use of heavy diesel grading equipment and approximately 15,832 heavy haul truck trips in order to haul fill and rock material to the site, resulting in large quantities of NO_x, CO, and particulate matter emissions. For purposes of this analysis and consistent with the Phasing schedule identified in Section 2.6.1, *Construction Phasing and Implementation*, peak grading activities are assumed to occur for an approximate eight-month period from May 2020 to December 2020.

After completion of grading activities for the Lower Area, Phase 2 (Development of Villaggio Lower Area) would involve installation of private roadway and utility infrastructure, the emergency access road to Mountainbrook Church, as well as construction of the Lower Area senior residential community development. following completion of grading activities within the Upper Terrace Construction of Phase 3, following completion of grading activities within the Upper Terrace, would involve the development of residential uses and non-residential ancillary components of the Villaggio Upper Terrace, as well as the public park within Madonna Froom Ranch. Phase 4 (Development of Madonna Froom Ranch) would involve the development of the residential and commercial components of Madonna Froom Ranch. See Table 2-7 in Section 2.6.2, *Construction Activities* 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 a typical construction equipment list and default CalEEMod emission factors. Each construction phase of the Project would last for more

than 90 days and would result in overlapping construction phases totaling five years of construction. Therefore, SLO County 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. Detailed construction emissions and calculation assumptions are provided in Appendix D.

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

	ROG	NO_x	ROG + NOx	CO	SO_2	PM_{10}	DPM (Exhaust $PM_{2.5}$)
Peak Daily Emissions (lbs/day)	180.81	191.01	371.82	109.68	0.27	30.51	7.23
Peak Quarterly Emissions (tons/qtr) [1]	1.09	5.46	8.15[2]	3.16	0.07	0.91	0.21
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?	--	--	**YES**	--	--	--	NO

[1] tons/qtr calculated based on maximum annual emissions divided by four (i.e., one quarter of a year).
[2] tons/qtr for ROG + NO_x emissions calculated in CalEEMod.
See Appendix D for CalEEMod worksheets.

Modeled emissions for the Project were found to be above SLO County APCD daily and Tier 1 and Tier 2 Quarterly thresholds for construction emissions of ROG and NO_x, and above SLO County APCD Daily and Tier 1 Quarterly thresholds for DPM. Therefore, Project construction emissions are considered *potentially significant.*

Mitigation Measures

MM AQ-1 *A Construction Activity Management Plan (CAMP) shall be included as part of Project grading and building plans and shall be submitted to SLO County APCD and to the City for review and approval prior to the start of construction. 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 and from exceeding the APCD's limit of 20 percent opacity for greater than 3 minutes in any 60-minute period. At a minimum, this would require twice-daily applications. Increased watering frequency would be required when wind speeds exceed 15 miles per hour (mph). Reclaimed water or the onsite water well (non-potable) shall be used when possible. The contractor or builder shall consider the use of a SLO County APCD-approved dust suppressant where feasible to reduce the amount of water used for dust control;*
    - *All dirt stock-pile areas shall be sprayed daily as needed;*
    - *Permanent dust control measures identified in the approved Project revegetation and landscape plans of any development within the Specific Plan area 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 SLO County 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 2 feet of freeboard in accordance with California Vehicle Code Section 23114;*
    - *Designate access points and require all employees, subconsultants, and others to use them. Install and operate a "track-out prevention device" where vehicles enter and exit unpaved roads onto paved streets. The track-out prevention device can be any device or combination of devices that are effective at preventing track-out, located at the point of*

intersection of any unpaved area and a paved road. If utilized, rumble strips or steel plate devices shall be cleaned periodically. If paved roadways accumulate tracked-out soils, the track-out prevention device shall be modified or replaced to prevent track-out;

- *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 SLO County APCD Compliance Division prior to the start of any grading, earthwork or demolition.*

2. *Implementation of the following BACT for diesel-fueled construction equipment. The BACT measures shall include:*
    - *Use of at least Tier 3 off-road equipment and 2010 on-road compliant engines;*
    - *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 off-road and portable diesel-powered equipment with CARB-certified motor vehicle diesel fuel (non-taxed version suitable for use off-road).*
    - *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 NO_x 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 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; and*
6. *Limit the length of the construction work-day period to 8 hours max.*

Plan Requirements and Timing. The CAMP shall be submitted to SLO County APCD and to the City for review and approval prior to issuance of grading and construction permits and recordation of the final VTM. All required fugitive dust and emissions control measures shall be noted on all 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 the City Community Development Director and SLO County 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, and 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 occupancy 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 Applicant shall be responsible for compliance during construction activities, including holidays or weekends when work may not be in progress. City grading and building inspectors shall spot check and ensure compliance onsite.

MM AQ-2 *To reduce ROG and NO_x levels during the architectural coating phase, low or no Volatile Organic Compound (VOC)-emission paint shall be used with levels of 50 grams per liter (g/L) or less (Odorless, Zero VOC Paint). The schedule for architectural coatings application shall be extended, limiting the daily coating activity to a level determined acceptable by SLO County APCD.*

Plan Requirements and Timing. The Applicant shall verify the measures through written documentation submitted to the City and SLO County APCD for review and approval. Measures shall be indicated on all building and construction plans and submitted to SLO County APCD and to the City for review and approval prior to issuance of building permits and recordation of the final VTM.

Monitoring. City shall verify measures with the Applicant and SLO County APCD. City staff shall ensure measures are depicted on all building and construction plans. City building inspectors shall perform site inspections to ensure compliance.

MM AQ-3 *An offsite mitigation strategy shall be developed and agreed upon by the Applicant, City, and SLO County APCD at least three months prior to the issuance of grading permits. Offsite mitigation strategies may be in the form of cash payment, circulation improvements above the Project's fair share, or funding for ongoing transit improvements. The Applicant shall provide appropriate funding necessary to offset the Project's residual construction-related ROG+NO_x emissions beyond SLO County APCD's daily threshold at least two months prior to the start of construction to help facilitate emission offsets that are as real-time as possible. Cash payment of offsite mitigation fees shall be calculated based on the most current ARB-approved Carl Moyer Guidelines at the time of commencement of each Project phase. Offsite mitigation strategies shall include one or more of the following:*

- *Develop or improve park-and-ride lots;*
- *Fund a program to buy and scrap older, higher emission passenger and heavy-duty vehicles;*
- *Retrofit or repower heavy-duty construction equipment, or on-road vehicles;*
- *Subsidize vanpool programs;*
- *Contribute to funding of new bike lanes;*
- *Replace/repower San Luis Obispo Regional Transit Authority (SLORTA) transit buses;*
- *Purchase Verified Diesel Emission Control Strategies (VDECS) for transit buses or construction fleets; and*
- *Fund expansion of existing SLORTA transit services.*

Plan Requirements and Timing. The Applicant shall prepare and submit the offsite mitigation strategy to SLO County 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 any necessary funding to SLO County APCD at least two months prior to the start of construction.

Monitoring. SLO County APCD and City staff shall ensure offsite mitigation measures are appropriate. If the Applicant elects to pay mitigation fees, SLO County APCD shall verify the receipt of funding to the City. If the Applicant elects to provide improvements, proposed improvements shall be approved by the City and SLO County APCD prior to implementation. City and SLO County APCD staff shall monitor proposed improvements to ensure compliance.

Residual Impact

The Project would be required to implement MM AQ-1 through -3 which are consistent with standards mitigation measures for construction equipment, application of BACT, and implementation of a CAMP. MM AQ-1 and -2 consist of quantifiable emissions reduction measures which would reduce construction-related air quality impacts from ROG, NO_x, and DPM emissions below SLO County APCD Tier 2 quarterly thresholds. Despite implementation of these measures, ROG and NO_x emission would continue to exceed SLO County APCD daily and Tier 1 quarterly thresholds (see Table 3.3-7). As such, the Project is required to implement MM AQ-3, requiring that the Project Applicant fund or implement

a range of improvements intended to mitigate Project emissions offsite, or pay the SLO County APCD's standard mitigation fee. Though the mitigation strategies and associated emissions reductions outlined in MM AQ-3 cannot be quantified for the Project, SLO County APCD deems the measures effective in reducing Project emissions to a level of insignificance. Residual impacts would be *less than significant.*

Table 3.3-7. Short-Term Construction Emissions (Mitigated)

	ROG	NO_x	ROG + NOx	CO	SO_2	PM_{10}	DPM (Exhaust $PM_{2.5}$)
Peak Daily Emissions (lbs/day)	59.96	120.79	180.75	129.09	0.27	17.74	4.35
Peak Quarterly Emissions (tons/qtr)[1]	0.38	3.43	5.00[2]	3.71	<0.01	0.51	0.13
APCD Daily Thresholds (lbs/day)	--	--	137	--	--	--	7
APCD Quarterly Thresholds – Tier 1 (tons/qtr)	--	--	2.5			2.5	0.13
Above Threshold?	--	--	**YES**	--	--	NO	NO
APCD Quarterly Thresholds – Tier 2 (tons/qtr)	--	--	6.3	--	--	--	0.32
Above Threshold?	--	--	NO	--	--	NO	NO

[1] tons/qtr calculated based on maximum annual emissions divided by four (i.e., one quarter of a year).
[2] tons/qtr for ROG + NO_x emissions calculated in CalEEMod.
See Appendix D for CalEEMod worksheets.

Impact AQ-2 The Project would result in potentially significant long-term operational 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.

While the Project would not exceed annual emissions thresholds, projected maximum daily emissions for the Project would be above the established APCD daily thresholds for operational emissions of ROG + NO_x (see Table 3.3-8). Project operational emissions are therefore considered *potentially significant.*

Table 3.3-8. Long-Term Operational Emissions (Unmitigated)

	ROG	NO_x	ROG + NOx	CO	SO_2	PM_{10}	DPM
Total Daily Operational Emissions							
Area (lbs/day)	24.27	0.60	24.87	51.96	<0.01	0.28	0.28
Energy (lbs/day)	0.38	3.35	3.73	2.16	0.02	0.26	0.26
Mobile (lbs/day)	6.70	23.85	29.80	67.42	0.21	20.47	0.17
Total (lbs/day)	31.35	27.80	58.4	121.54	0.23	21.01	0.72
Threshold (lbs/day)	-	-	25	550	-	25	1.25
Above Threshold?	-	-	**YES**	NO	-	NO	NO
Total Annual Operational Emissions							
Area (tons/year)	4.40	0.10	4.50	8.57	<0.01	0.05	0.05
Energy (tons/year)	0.07	0.61	0.68	0.39	<0.01	0.05	0.05
Mobile (tons/year)	1.05	3.99	5.04	11.06	0.03	3.35	0.03
Total (tons/year)	5.52	4.70	10.22	20.02	0.03	3.45	0.13
Threshold (tons/year)	-	-	25	-	-	25	-
Above Threshold?	-	-	NO	-	-	NO	

Note: Values in this table are rounded for reporting purposes.
See Appendix D for CalEEMod worksheets.

Mitigation Measures

MM AQ-4 *Consistent with standard mitigation measures set forth by SLO County APCD, Projects generating more than 50 lbs/day of combined ROG + NO_x 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).*

Requirements and Timing. The Applicant shall include the mitigation measures in Table 3-5 of the 2012 SLO County APCD CEQA Air Quality Handbook (as amended by the 2017 Clarification Memorandum), as indicated in the column "How the Project Will Include This Measure" in Table 3.3-9, above. All feasible standard mitigation measures shall be included in the FRSP prior to approval of the final FRSP and these measures shall also be included on the final VTM prior to recordation. City staff shall ensure the above measures are incorporated into the FRSP, final VTM, and building plans prior to permit issuance.

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

Measure #	Land Use[1]	Measure Type[2]	Mitigation Measure	Pollutant Reduced[3]	Phase	How the Project Will Include This Measure
1	R	SD	Install gas or electric fireplace in place of U.S. EPA-certified Tier 2 residential wood burning appliances.	GHG, O, P	D	The Project does not propose any wood burning appliances.
2	C, R	SD, T	Design and build high-density, compact development within the urban core or URL to encourage alternative transportation (walk, bike, bus, etc.).	GHG, O, P	D	The Project would include residential and commercial development within the URL and would provide access to transit and non-vehicular transportation; however, the Project site lies on the southern edge of the City and is not located within an urban core area. To encourage alternative transportation, the Project shall provide a range of transit options and incentives to employees and residents of Villaggio, and commercial and residential developments within Madonna Froom.
3	C, I, R	SD, T	Provide a pedestrian-friendly and interconnected streetscape with good access to/from the development for pedestrians, bicyclists, and transit users to make alternative transportation more convenient, comfortable and safe (may include: appropriate signalization and signage; safe routes to school; linking cul-de-sacs and dead ends; orienting buildings towards streets with automobile parking in the rear, etc.).	GHG, O, P	D	The Draft FRSP includes guidelines for incorporating pedestrian walkways, outdoor seating, and landscape areas where possible. Public commercial collector roads shall be connected to adjacent development to allow pedestrian and bicyclist access, and public pedestrian trails will connect public roads to the existing trail system in the Irish Hills Natural Reserve.

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

Measure #	Land Use[1]	Measure Type[2]	Mitigation Measure	Pollutant Reduced[3]	Phase	How the Project Will Include This Measure
4	C, I, R	SD, T	Provide shade over 50 % of parking spaces to reduce evaporative emissions from parked vehicles.	O	D	Shade trees are to be provided as part of the Project per City requirement. The Applicant shall amend the Draft FRSP to require shade trees are provided so a minimum of 50 % of proposed parking spaces are shaded.
5	C, I, R	SD, T	Reduce fugitive dust from roads and parking areas with the use of paving or other materials.	P	D	No unpaved roads, driveways, or parking areas are proposed as part of the Project.
6	C, I, R	SD, T	Implement driveway design standards (e.g., speed bumps, curved driveway) for self-enforcement of reduced speed limits on unpaved driveways.	P	D	The City has a requirement that the design speeds in local and collector roads not exceed 25 mph. Bulb-outs, traffic circles, chicanes, and other features are also included in the Project. There are no unpaved roads or driveways in the development.
7	C, I, R	SD, T	Use an APCD-approved suppressant on private unpaved roads leading to the site, unpaved driveways and parking areas, applied at a rate and frequency that ensure compliance with APCD Rule 401: Visible Emissions, and ensures offsite nuisance impacts do not occur.	P	O	No unpaved roads, driveways, or parking areas are proposed as part of the Project.
8	C, I, R	SD, T	Incorporate traffic calming modifications to Project roads to reduce vehicle speeds and increase pedestrian and bicycle usage and safety.	GHG, O, P	D	City has a requirement that the design speeds in local and collector roads not exceed 25 mph. Bulb-outs, traffic circles, chicanes, and other features are included. There are no unpaved

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

Measure #	Land Use[1]	Measure Type[2]	Mitigation Measure	Pollutant Reduced[3]	Phase	How the Project Will Include This Measure
						roads or driveways in the development.
9	C, I, R	SD, T	Work with SLOCOG to create, improve, or expand a nearby 'Park-and-Ride' lot with car parking and bike lockers in proportion to the size of the Project.	GHG, O, P	D	The Project Applicant shall work with SLOCOG to improve or expand nearby 'Park-and- Ride' lots within the City, such as the 'Park–and-Ride' lot located at the Calle Joaquin hotel development.
10	C	SD, T	Implement onsite circulation design elements in parking lots to reduce vehicle queuing and improve the pedestrian environment.	GHG, O, P	D	The Applicant shall amend the Draft FRSP to require onsite circulation design in parking lots to reduce vehicle queueing and improve the pedestrian environment.
11	C, I	SD, T	Provide employee lockers and showers to promote bicycle and pedestrian use. One shower and five lockers for every 25 employees is recommended.	GHG, O, P	D	The Applicant shall amend the Draft FRSP to require workplaces provide employee lockers and showers consistent with this measure and the City Zoning Regulations.
12	C, I, R	SD, T	Increase bicycle accessibility and safety in the vicinity of the Project; for example: provide interconnected bicycle routes/lanes or construction of bikeways.	GHG, O, P	D	The Project includes a number of improvements to pedestrian and bicyclist environment. MM TRANS-5, -8, -9, and -10 requiring installation of protected bike lanes along Tank Farm Road and LOVR and would ensure consistency with this measure.
13	C, I, R	SD, T	Exceed Cal Green standards by 25 % for providing onsite bicycle parking: both short-term racks and long-term lockers, or a locked room with standard racks and access limited to bicyclists only.	GHG, O, P	D	The Applicant shall amend the Draft FRSP to require onsite bicycle parking consistency with this measure and the City Zoning Regulations.

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

Measure #	Land Use[1]	Measure Type[2]	Mitigation Measure	Pollutant Reduced[3]	Phase	How the Project Will Include This Measure
14	C, I, R	SD, T	Develop recreational facility (e.g., parks, trails, gym, pool, etc.) within 0.25 mile from site.	GHG, O, P	D	The Project includes development of various facilities to meet the recreational needs of the residents of Villaggio. The Project also includes the development of a 2.9-acre neighborhood park within the Project site.
15	C, I, R	SD, T	If the project is located on an established transit route, provide improved public transit amenities (e.g., covered transit turnouts, direct pedestrian access, bicycle racks, covered bench, smart signage, route information displays, lighting, etc.).	GHG, O, P	D	The Project site is located along LOVR and residential development is less than 0.25 mile from bus stops for Transit Line 2A and the Laguna Tripper. The Project would include installation of a new transit stop for these routes to improve public transit amenities and access.
16	C, I, R	T	Provide bicycle-share program for development.	GHG, O, P	O	The Applicant shall work with Public Works to amend the Draft FRSP to include a hub/node of the City's bicycle share network at the Project site. The infrastructure/operation of the site shall be the responsibility of the developer.
17	C, I	T	Require 15 % of fleet vehicles to be zero emission vehicles.	DPM, GHG, O	O	The Project does not propose any commercial or industrial use types which would utilize fleet vehicles; however, future uses may include the use of shuttles (i.e. hotel/airport shuttle). The Applicant shall amend the Draft FRSP to require the use of zero emission vehicles for 15 percent of all proposed shuttle or group-transport vehicles.

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

Measure #	Land Use[1]	Measure Type[2]	Mitigation Measure	Pollutant Reduced[3]	Phase	How the Project Will Include This Measure
18	C, I	T	Project includes alternative fuel fleet vehicle(s).	DPM, GHG, O	O	The Project does not propose any commercial or industrial use types which would utilize fleet vehicles; however, future uses may include the use of shuttles (i.e. hotel/airport shuttle). The Applicant shall amend the Draft FRSP to require the use of alternative fuel shuttle or group-transport vehicles.
19	C, I, R	T	Provide neighborhood EV/car-share program for the development.	GHG, O	O	The Applicant shall amend the Draft FRSP to require provision of neighborhood electric vehicles/car-share programs for the development, consistent with MM AQ-5.
20	C, I, R	T	Provide dedicated parking for carpools, vanpools, and/or high-efficiency vehicles to meet or exceed Cal Green Tier 2.	GHG, O, P	O	The Applicant shall amend the Draft FRSP to require the provision of dedicated parking for carpools, vanpools, and high-efficiency vehicles in exceedance of Cal Green Tier 2 standards.
21	C, I	T	Provide vanpool, shuttle, mini bus service (alternative fueled preferred).	GHG, O, P	O	The FRSP shall be amended to include measures for encouraging and incentivizing residents and employees of the proposed development participate in the San Luis Obispo Regional Rideshare program. The Applicant or developer of the FRSP shall also provide car-share opportunities and promote carpool, vanpool, and EV vehicles. See also MM AQ-6.
22	C, I, R	T	Work with SLO Regional Rideshare to educate occupants with alternative	GHG, O, P	O	The FRSP shall be amended to include measures for encouraging

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

Measure #	Land Use[1]	Measure Type[2]	Mitigation Measure	Pollutant Reduced[3]	Phase	How the Project Will Include This Measure
			transportation and smart commute information (e.g., transportation board, electronic kiosk, new hire packets, web portal, newsletters, social media, etc.).			and incentivizing residents and employees of the proposed development participate in the San Luis Obispo Regional Rideshare program. See also MM AQ-6.
23	C, I	T	Provide child care facility onsite.	GHG, O, P	O	The Applicant shall amend the Draft FRSP to include policies for the provision of child care facilities onsite.
24	C, I	T	Implement programs to reduce employee vehicle miles traveled (e.g. incentives, SLO Regional Rideshare trip reduction program, vanpools, onsite employee housing, alternative schedules (e.g., 9–80, 4–10, telecommuting, satellite work sites etc.).	GHG, O, P	O	The Project is required to implement mitigation programs and strategies to reduce employee VMT and mobile-source emissions. Refer to MM TRANS-5, -8, -9, -10, MM AQ-6.
25	C, I	T	Provide a lunchtime shuttle to reduce single occupant vehicle trips and/or coordinate regular food truck visits.	GHG, O, P	O	The Applicant shall amend the Draft FRSP to include policies for provision of lunchtime shuttles or to encourage foot truck visits to the Project site to reduce trips associated with onsite commercial businesses, as feasible.
26	C	T	Provide delivery service in clean fueled vehicles.	GHG, O, P	O	The Applicant shall amend the Draft FRSP to require delivery-based commercial uses that may be developed to utilize clean fueled vehicles, as feasible.
27	C	T	At community event centers (i.e., amphitheaters, theaters, and stadiums), provide free valet bicycle parking.	GHG, O, P	O	The Project does not propose development of any community event centers or other communal gathering areas.

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

Measure #	Land Use[1]	Measure Type[2]	Mitigation Measure	Pollutant Reduced[3]	Phase	How the Project Will Include This Measure
28	C, I	T	Implement a "No Idling" vehicle program which includes signage, enforcement, etc.	DPM, GHG, O	O	The Applicant shall amend the Draft FRSP to include programs and policies requiring implementation of a "No Idling" vehicle program for commercial development which shall include standards for signage and enforcement.
29	R	T	Provide free-access telework terminals and/or wi-fi access in multi-family projects.	GHG, O, P	O	The Applicant shall amend the Draft FRSP to include programs and policies requiring provision of free-access telework terminals and/or wi-fi access in multi-family development.
30	C, I	T	Meet or exceed Cal Green Tier 2 standards for providing EV charging infrastructure.	GHG, O, P	D	The FSRP includes Program 4.7.2f, which states that individual garages are to be "electric vehicle-ready" and shared parking areas for apartments shall incorporate EV charging stations. In addition, compliance with City Zoning Regulations regarding EV parking spaces shall be required.
31	C, I	T	Install 1 or more level 2 or better EV charging stations.	GHG, O, P	D	The Draft FRSP includes Program 4.7.2f, which states that individual garages are to be "electric vehicle-ready" and shared parking areas for apartments shall incorporate EV charging stations. In addition, compliance with City Zoning Regulations regarding EV parking spaces shall be required.
32	C, I, R	EE	Meet or exceed Cal Green Tier 1 standards for building energy efficiency.	GHG, O	D	The Applicant shall amend the Draft FRSP to include programs and policies for ensuring new

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

Measure #	Land Use[1]	Measure Type[2]	Mitigation Measure	Pollutant Reduced[3]	Phase	How the Project Will Include This Measure
						development, at a minimum, meets Cal Green Tier 2 standards for building efficiency.
33	C, I, R	EE	Meet or exceed Cal Green Tier 2 standards for building energy efficiency.	GHG, O	D	The Applicant shall amend the Draft FRSP to include programs and policies for ensuring new development, at a minimum, meets Cal Green Tier 2 standards for building efficiency.
34	C, I, R	EE	Meet or exceed Cal Green Tier 2 standards for utilizing recycled content materials.	GHG	D	The Applicant shall amend the Draft FRSP Program 4.7.4a to require, at a minimum, use of recycled content materials consistent with Cal Green Tier 2 standards.
35	C, I, R	EE	Meet or exceed Cal Green Tier 2 standards for reducing cement use in concrete mix as allowed by local ordinance and conditions.	GHG	D	The Applicant shall amend the Draft FRSP to include a policy for ensuring construction of the Project, at a minimum, meets Cal Green Tier 2 standards for reducing cement use in concrete mix. Recipe for cement mix shall be verified by the City prior to Project construction and subject to inspection by City permit compliance staff.
36	C, I, R	EE	All built-in appliances shall be Energy Star certified or equivalent.	GHG	D	The Draft FRSP includes Program 4.7.3a, which requires that all new residential units shall incorporate high-efficiency Energy Star compliant appliances.
37	C, I, R	EE	Utilize onsite renewable energy systems (e.g., solar, wind, geothermal, biomass and/or bio-gas) to offset at least 10 % of energy use.	GHG	D	The Project is required to comply with MM AQ-5, requiring the Draft FRSP be amended to include measures necessary to reduce Project operational

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

Measure #	Land Use[1]	Measure Type[2]	Mitigation Measure	Pollutant Reduced[3]	Phase	How the Project Will Include This Measure
						stationary-source emissions, including utilization of 100 % carbon-free energy.
38	C, I, R	EE	Meet or exceed Cal Green Tier 2 standards for the use of greywater, rainwater or recycled water.	GHG	D	The Applicant shall amend the Draft FRSP to include programs or policies requiring the use of greywater, rainwater, or recycled water by an amount which, at a minimum, meets Cal Green Tier 2 standards.
39	C, I, R	EE	Provide and require the use of battery powered or electric landscape maintenance equipment for new development.	GHG, O	D	The Applicant shall amend the Draft FRSP to include programs or policies requiring the use of battery powered or electric landscape maintenance equipment.
40	C, I, R	EE	Meet or exceed Cal Green Tier 2 standards for using shading, trees, plants, cool roofs, etc. to reduce "heat island" effect.	GHG	D	The Applicant shall amend the Draft FRSP to include programs or policies requiring the use of shading, trees, plants, cool roofs, and other measures to reduce "heat island" effect, at a minimum, meets Cal Green Tier 2 standards.
41	C, I, R	EE	Design roof trusses to handle dead weight loads of standard solar-heated water and photovoltaic panels.	GHG, O	D	The Applicant shall amend the Draft FRSP to include programs and policies requiring the design of roof trusses to handle dead weight loads of standard solar-heated water and photovoltaic panels.

EV – Electric Vehicle
SLOCOG - San Luis Obispo Council of Governments

Monitoring. City staff shall ensure measures are listed on final plans submitted for review and approval by the City. City staff shall work with the Applicant to ensure that these strategies are implemented. The City shall conduct periodic site visits to ensure compliance, in consultation with the SLO County APCD.

Residual Impact

For unmitigated projects that result in emissions of 50 lbs/day or more of combined ROG and NO_x, SLO County 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 or increasing the energy efficiency of the Project, but focuses primarily on reducing mobile-source emissions through implementing transportation strategies to reduce VMT. In many cases, adherence to the Project design guidelines and other required mitigation identified in this EIR would implement many of these measures.

Mitigation Measure AQ-2 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 (as amended by the 2017 Clarification Memorandum). Many of these measures would be incorporated as policies of the FRSP for which future development would be required to implement and would manifest as site design measures that would reduce area source emissions. Measures identified in MM AQ-2 emphasize transportation strategies to reduce VMT and associated mobile-source NO_x emissions. Incorporation of this mix of measures would be feasible for the Project, and would substantially reduce operational ROG and NO_x emissions. However, it is noted that many measures listed in MM AQ-2 do not contain quantifiable air quality emissions reductions for programs such as the FRSP. While implementation of these measures can feasibly reduce ROG and NO_x, the Project's estimated emissions after implementation of these measures cannot reasonably be quantified, and long-term operational residual impacts are conservatively considered *significant and unavoidable* due to potential continued exceedance of maximum daily emissions thresholds.

Impact AQ-3 Project development could result in the release of toxic diesel emissions or naturally occurring asbestos which could expose sensitive receptors to emissions-related health risks (Less than Significant).

Toxic Diesel Emissions

The Project would generate DPM emissions from construction activities. DPM is listed as a TAC by the CARB. CARB identifies high-volume freeways and roads (highways, urban roads carrying 100,000 vpd, and rural roads carrying 50,000 vpd), dry cleaners, and large gasoline stations as potential sources of TACs. SLO County APCD has a threshold for construction and operational DPM emissions, but not specifically for mobile-source DPMs for human health effects. The potential for TACs to have an effect on sensitive receptors would occur if the Project would generate TACs in quantities that may have an adverse effect on sensitive receptors.

SLO County APCD defines sensitive uses or receptors as people that have an increased sensitivity to air pollution or environmental contaminants, which include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling units (SLO County APCD 2012). The proposed development area in the Upper Terrace area of the site is located as close as 325 feet away and would be accessed from the Mountainbrook Church facility to the south. Mountainbrook Church does not provide day care or long-term child care facilities that may expose children under the age of 16 to extended periods of DPMs during construction. Further, guests of the hotels along Calle Joaquin are not considered sensitive receptors to air pollutants, as these guests would not reside in these hotels for extended periods of time. Thus, the nearest sensitive receptor to the Project site is the Pacific Beach High School located approximately 0.27 mile to the northeast, which would be substantially removed and separated from the site by urban development. Therefore, Project construction would not significantly endanger the health of existing nearby sensitive receptors to air emissions.

Project construction would generate DPM emissions due to operation of heavy construction equipment. For purposes of this analysis, it is assumed that Project phasing would allow the Lower Area of Villaggio to be occupied as early as 2022. Occupancy would precede later construction phases of the Upper Terrace and Madonna Froom Ranch. While mass grading of the site would be complete by 2022, fine grading and vertical construction of the Upper Terrace and Madonna Froom Ranch would continue between 2022 and 2025, which would generate emissions from trucks and construction equipment. Independent living senior residences, the Villaggio Health Care Administration building, and senior assisted living facilities occupied in 2022 would be considered sensitive receptors to air emissions, including TACs and DPMs from Project construction. Grading, onsite transport of cut material between the Upper Terrace and Madonna Froom Ranch areas, and import

of offsite fill to the Madonna Froom Ranch Area would have the potential to generate DPM emissions from heavy construction equipment and heavy haul trucks (15,832 haul truck trips).

To protect future residents in the Lower Area from construction emissions of Phase 3 and Phase 4 (see Section 2.0, *Project Description*), the Project would strategically schedule grading of the Upper Terrace (Phase 3) to occur at the same time as grading activities associated with Phase 1 and 2. All major grading and earthmoving, including balancing soils within the Project site, would occur prior to occupancy of any units within the Specific Plan area. Once occupancy begins, the Project would reroute construction trips to the Upper Terrace, including any heavy haul or materials delivery trips, along Calle Joaquin to the Mountainbrook Church driveway and parking lot instead of through the local roads constructed to serve the Project. This circulation approach would move potential sources of DPM emissions offsite and away from sensitive receptors residing onsite within the Villaggio Lower Area once it is constructed. This proposed construction phasing would therefore reduce potential for exposure of sensitive elderly populations to the most intensive construction activities and DPM emissions associated with development under the Project.

Naturally Occurring Asbestos

The Project would result in excavation and grading of serpentine soils in the Upper Terrace, which may release NOA into the air. The Applicant-prepared geological reports indicate that asbestos-containing serpentine rock is present beneath topsoil in the Upper Terrace (Appendix G). Since the Project site lies within an area with the potential to contain NOA per the SLO County APCD NOA map, compliance with the NOA ATCM would be required. The NOA ATCM requires submittal of a geologic evaluation determining whether serpentine rock is present on a project site, and if so, to what extent (less or more than 1 acre). Depending on the results of the geologic evaluation, the Project would be required to file an exemption request form (if no serpentine is present), a Mini Dust Control Measure Plan (if less than 1 acre of serpentine is present), or an Asbestos Dust Control Measure Plan (if more than 1 acre of serpentine is present). Presuming the Project would disturb more than 1 acre of serpentine, the Project would be required to submit a geologic evaluation and Asbestos Dust Control Measure Plan to SLO County APCD for approval.

The Project would comprise residential and commercial uses, which are considered uses that would not generate substantial amounts of TACs and would not pose a significant risk to sensitive receptors in the Project vicinity. The Project site is not located adjacent to any

existing industrial uses (e.g., construction material companies, machine shops, construction vehicle staging areas) that may generate additional diesel particulates through the idling of large diesel equipment or construction vehicles. Additionally, according to the 2005 CARB's Air Quality and Land Use Handbook, a buffer of 500 feet between residences and a major freeway, and more than 50 feet from a typical gasoline station, should be maintained. U.S. 101 is located approximately 2,330 feet to the south of the Project site, and no gasoline stations are located in the immediate (50 feet or less) vicinity of the Project site. Therefore, the Project is not expected to expose sensitive receptors to substantial levels of TACs following completion of Project construction.

There are no existing sensitive receptors on the Project site or vicinity that would be significantly exposed to Project construction emissions and future sensitive receptors would be protected from exposure to significant construction emissions through Project phasing. Proposed areas of development within the Specific Plan area are also not located adjacent (i.e., within 500 feet) to a freeway producing significant DPMs or a gasoline station (i.e., 50 feet). Though the Project site overlies potentially NOA in serpentine areas underlying the Upper Terrace, SLO County APCD standards require a geologic evaluation and an Asbestos Dust Control Measure Plan for approval prior to grading. Therefore, impacts to sensitive receptors due to air emission health risks would be *less than significant*.

Impact AQ-4 The Project would be consistent with the City's Climate Action Plan, but would result in potentially significant GHG emissions during construction and operation (Less than Significant with Mitigation).

The Project would generate GHG emissions during construction, including heavy equipment, and operation, including energy and vehicle use. Analysis of environmental impacts from GHG emission considers both quantified and qualified analysis herein.

Construction GHG Emissions

Construction activities for the Project are assumed to occur over a period of approximately five years for the purposes of this analysis. Based on CalEEMod estimates, construction activities for the Project would generate an estimated 7,684.95 MT of CO_2e (see Table 3.3-10). Amortized over a 25-year period (consistent with APCD methodology), construction of the Project would generate approximately 307.40 MT of CO_2e per year.

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

Year	Annual Emissions MT CO_2e
2020	2,733.52
2021	1,444.27
2022	896.58
2023	1,691.60
2024	918.98
Total	**7,684.95**
Amortized over 25 years	***307.40***

Operational GHG Emissions

Operational GHG emissions would be generated from area, energy use, solid waste, water use, and transportation. Total operational emissions would be approximately 5,773.50 MT CO_2e/yr (see Table 3.3-11). Combined with construction emissions amortized over a 25-year period (307.40 MT CO_2e), total GHG emissions for the Project would be approximately 6,080.90 MT CO_2e/yr. Based on a new resident population of 1,231, the Project is estimated to result in 4.9 MT CO_2e/SP/yr.

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

Emission Source	Annual Emissions MT CO_2e
Area	14.35
Energy Use	2,235.08
Mobile	3,128.70
Water Use	253.18
Solid Waste	142.19
Total	5,773.50
Amortized Construction Emissions	*307.40*
Total Project GHG Emissions	**6,080.90**
Project Population (Residents)	1,231
Per Capita Emissions	**4.9**

The City's Climate Action Plan is designed as a Qualified GHG Reduction Strategy, consistent with CEQA Guidelines Section 15183.5(b). 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 inclusion of goals, policies, and programs in Chapter 4, Design Guidelines, of the Draft FRSP for promoting greater energy efficiency, inclusion of alternative energy systems, use of energy-efficient types of lighting, and incorporation of high-efficiency Energy Star compliant appliances.

- Renewable Energy Goal: Use cleaner and renewable energy sources.
  - The Project is consistent with the renewable energy actions and strategies by its inclusion of goals, policies, and programs in Chapter 4, Design Guidelines, of the Draft FRSP for inclusion of alternative energy systems in development over 5,000 sf in size.

- 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, extension of Class II bike lanes along LOVR, and installation of a transit stop at the Project site entrance along LOVR. At full buildout of the Project, the homes and businesses in Madonna Froom Ranch and Villaggio would be interconnected to the rest of the City through a dense street pattern, sidewalks, local and regional bikeways and nearby transit.

- Water Goal: Reduce and reuse water consumed by the community.
  - The Project is consistent with the water actions and strategies by its inclusion of policies and programs oriented towards reducing average daily potable water; and its inclusion of progressive stormwater treatment and management improvements through bioretention swales, runoff treatment and filtration, permeable paving, and other integrated treatment detention/retention systems. Outdoor landscaping irrigation demand for the Project site, including irrigation needed to establish or maintain vegetation in the proposed stormwater detention basin and realigned Froom Creek corridor, will be met entirely 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 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 59.0 acres of onsite open space in accordance with General Plan LUE Policy 8.1.6, which includes a 2.9-acre neighborhood park that is within 0.25 mile of any residential unit and the realigned Froom Creek 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. Based on initial analysis of Project consistency above, the Project would be consistent with the goals of the Climate Action Plan.

However, as described above under the *GHGs and Climate Change CEQA Thresholds* discussion under Section 3.3.3.1, the City's Climate Action Plan is specific to the goals of AB 32 and does not consider, nor is in compliance with, the 2030 GHG reduction targets mandated under SB 32. Therefore, the Project is also analyzed against the SLO County APCD GHG thresholds, reduced by 40 percent to align with SB 32, and CARB and AEP guidance on SB 32 compliance. Compared to SB 32-compliant thresholds for land development, a Bright Line Threshold of 690 MT CO_2e, or an efficiency threshold of 2.65 MT of CO_2e/SP/yr, the Project's estimated 6,080.9 MT CO_2e total and 4.9 MT CO_2e/SP/yr emissions are considered inconsistent with the basic goals, objectives, and emissions reduction strategies of the state's adopted GHG laws. The Project is also considered inconsistent with the City's current goal for achieving citywide net-zero carbon emissions by the year 2035, which reflects the City's intent to achieve the emissions and carbon reduction requirements of SB 32 and Executive Order B-55-18. Project emissions are therefore considered *potentially significant* due to inconsistency with adopted state and local goals and regulations for reducing GHG emissions.

Mitigation Measures

MM AQ-4 shall apply.

MM AQ-5 *The Applicant shall revise the Draft FRSP to include measures necessary to reduce Project operational stationary-source GHG emissions to achieve net zero emissions, consistent with the City's 2035 net-zero GHG emissions target. These measures shall include Best Available Mitigation strategies for reducing operational emissions, including but not limited to the following:*

- *Electrical power for the entirety of Project operations including but not limited to illumination, heating, cooling, and ventilation shall be provided by alternative or carbon-free energy sources according to the following priority: 1) on-grid power with 100-percent renewable or carbon-free source (a planned product of Monterey Bay Community Power available to the City in 2020), or 2) a combination of grid power and on site renewable generation to achieve annual zero net electrical energy usage, or 3) purchase of carbon offsets of any portion of power not from renewable or carbon-free sources. As a first priority, carbon-free sourced energy shall be purchased from Monterey Bay Community Power.*

- *For new buildings, onsite solar photovoltaic systems shall be required, and retrofitted buildings shall be encouraged to install onsite solar photovoltaic systems to offset energy demand, regardless of building size.*

- *All proposed commercial and health care facilities shall exceed the minimum standards of Title 24, Part 11 (Cal Green) by adopting all or some elements of Cal Green Tier 1 and 2 voluntary elective measures to increase energy efficiency in new buildings, remodels and additions. These measures shall prioritize upgrading lighting (e.g., using light-emitting diode [LED] lights), heating and cooling systems, appliances, equipment and control systems to be more energy efficient.*

Requirements and Timing. The Applicant shall include the above measure in the Final FRSP prior to approval and shall include the above measure on the final VTM prior to recordation. Plans submitted for building permits

shall incorporate Best Management Strategies, and for the selected Best Management Strategies, the Applicant shall work with City and SLO County APCD staff to calculate estimated stationary-source emissions to ensure achievement of net-zero stationary source operational emissions for the Project. City and SLO County APCD staff shall ensure the above measures are incorporated into the FRSP, final VTM, and building plans prior to permit issuance.

Monitoring. City staff shall ensure measures are listed on final plans submitted for review and approval by the City. City and SLO County APCD staff shall work with the Applicant to ensure that these strategies are implemented. The City shall verify compliance in consultation with the SLO County APCD.

MM AQ-6 *The Applicant shall revise the FRSP to include measures necessary to reduce the Project's operational, mobile-source emissions, and VMT to the maximum extent feasible, including, but not limited to the following:*

- *Rideshare and Employee Ridership Programs: The FRSP shall be amended to include measures for encouraging and incentivizing residents and employees of the proposed development participate in the San Luis Obispo Regional Rideshare program.*
- *Senior Shuttle Service: Villaggio shall provide clean fuel shuttle services or coordinate with existing shuttle services such as Dial-A-Ride and the Senior Go! Shuttle to provide curb-to-curb shuttle service for residents of the Villaggio Life Community Plan.*
- *All Electric Small Vehicles*: *The FRSP shall require all personal small vehicles (e.g., golf carts) be 100 percent electric powered.*
- *Car Share: Provide car-sharing opportunities within the Villaggio Life Community Plan and Madonna Froom Ranch areas.*
- *Promote Carpools, Vanpools, and Electric Vehicle (EV) Vehicles: Provide dedicated parking for carpools, vanpools, and high-efficiency vehicles in exceedance of Cal Green Tier 2 standards.*
- *Offsite EV Improvements: Work with SLO County APCD to expand or fund the expansion of EV charging stations throughout the City.*

Requirements and Timing. The Applicant shall include all feasible Best Management Strategies as part of the final FRSP and final VTM. For the selected Best Management Strategies, the Applicant shall work with City and SLO County APCD staff to calculate estimated mobile-source emissions to ensure emissions are reduced to the maximum extent feasible. City and SLO County APCD staff shall ensure the above measures are incorporated into the FRSP and final VTM prior to recordation.

Monitoring. City staff shall ensure measures are listed on the final VTM submitted for review and approval by the City. City and SLO County APCD staff shall work with the Applicant to ensure that these strategies are implemented. The City shall verify compliance in consultation with the SLO County APCD.

Residual Impact

Implementation of MM AQ-4 and -5 would ensure stationary-source operational emissions of the Project are reduced to 0 MT CO_2e/yr, consistent with the City's intent to achieve carbon neutrality by 2035, consistent with the purpose and intent of SB 32 to further reduce statewide GHG emissions, and consistent with Executive Order B-55-18 requiring attainment of statewide carbon neutrality by 2045. Similarly, MM AQ-4 and -6 would reduce Project mobile-source emissions to the maximum extent feasible for the proposed development. However, given the reduction in emissions from the combination of onsite and offsite mitigation strategies cannot be directly quantified, implementation of these mitigation would generally demonstrate compliance with adopted state and local policies for reducing GHG emissions, but potential remains for mobile-source GHG emissions to result in inconsistencies with established state and local GHG reduction strategies. Required mitigation would ensure the Project achieves compliance with adopted regulations and Citywide objectives and stationary-source operational emissions are reduced to 0 MT CO_2e/yr. Nevertheless, impacts would be *significant and unavoidable* due to continued potential for exceedance of GHG emissions thresholds as a result of Project mobile-source emissions.

Impact AQ-5 The Project is potentially inconsistent with the SLO County 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 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 SLO County APCD Clean Air Plan. Consistency with the SLO County APCD 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 174 multi-family units, 404 independent and assisted senior housing units, 51 beds for memory care and skilled nursing, and up to 100,000 sf of mixed commercial uses. This development would increase the City's population by approximately 1,231 people. The Clean Air Plan's population estimate for the City is 48,499 by 2015, and 305,854 for the County by 2015 (SLO County APCD 2001). According to 2018 estimates by the California State Department of Finance, the City population estimate is 46,548 and the County population estimate is 280,101 (California Department of Finance 2018). The City's General Plan population estimates are just marginally under the Clean Air Plan's projected population estimates. The increase of approximately 1,231 persons by the Project is within the population projections under the Clean Air Plan.

   The City's LUE Policy 8.1.5 indicates the specific plan for the area including the Project site should provide a variety of housing types and affordability levels, with performance standards stating a minimum of 200 dwelling units, and maximum of 350 dwelling units. This is inconsistent with the land uses and intensities proposed by the Project, which proposes a total of 174 multi-family units and 404 independent and assisted senior housing units. This is above the maximum range of units due to the inclusion of high-density and senior housing. The LUE objectives are intended to ensure that the Project site is developed primarily with a compact mixed-use project and includes provisions for onsite and offsite open space/resource protection. The Project is consistent with the population projections anticipated by the LUE (see Section 3.11, *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 Impact AQ-2 above, the Project would result in significant and unavoidable operational 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 3.13, *Transportation and Traffic*, the City's model forecast for the Project is 46,894 daily VMT, an increase of approximately 3 percent within the City sphere of influence and 0.4 percent within the County. The VMT generated per household for the Project is forecasted at 69 daily VMT per household. Although the Project would have a VMT below the regional average, the VMT per household for the Project is forecasted to be approximately 28 percent higher than the average for the City's sphere of influence. The rate of increase in vehicle trips and miles traveled would exceed the Clean Air Plan projections for the Project site; therefore, the Project would be 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 VMT 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 and T-5 are not applicable to the Project as the Project does not include a college campus or smog check program. T-1C and T-8 are applicable to the commercial uses of the Project site. The Project will include one bus stop along LOVR fronting 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 Section 3.13, *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 and would be implemented by the Project.

The Project could hinder the County's ability to maintain attainment of the state O_3 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; therefore, impacts are considered *potentially significant*.

Mitigation Measures

MM AQ-2 shall apply.

MM TRANS-5 shall apply.

MM TRANS-8 shall apply.

MM TRANS-9 shall apply.

MM TRANS-10 shall apply.

Residual Impact

In accordance with the 2012 APCD CEQA Air Quality Handbook and 2017 Clarification Memo, all feasible mitigation measures must be incorporated into the Project, which emphasize transportation strategies for reducing Project operational VMT. Implementation of MM TRANS-5, -8, -9, and -10 would ensure facilities serving pedestrians and bicycles in Project vicinity would be provided prior to occupancy of the first unit of Villaggio's Lower Area, which would result in consistency with SLO County APCD's 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 due to continued exceedance

of population growth, vehicle trip, and VMT projections for the region. 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 SCCAB is currently in state non-attainment for 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 and ROGs, the Project would generate air quality emissions for criteria pollutants within an air basin that is under state non-attainment; therefore, the 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

The Project, in combination with any approved, pending, and proposed development presented in Table 3.0-1 of Section 3.0.3, *Cumulative Impact Analysis*, would further contribute to the increase the generation of GHG emissions. Analysis of GHG emissions and climate change are cumulative in nature because impacts are caused by cumulative global emissions and accumulation of GHGs in the atmosphere. Additionally, climate change impacts related to GHG emissions do not necessarily occur in the same area as the Project is located. As indicated in Impact AQ-4, the Project's construction and operational stationary-source emissions would be reduced to as close to 0 MT CO_2e/yr as feasible with implementation of MM AQ-4 through MM AQ-6. Implementation of these measures would demonstrate consistency with the City and statewide objectives for reducing GHG emissions; however, mobile-source emissions continue to have potential to result in exceedance of established GHG emissions thresholds and state and local GHG reduction strategies due to inability to ensure associated emissions are quantifiably reduced. Therefore, the Project's contribution to cumulative levels of GHGs would be cumulatively

considerable and cumulative impacts from GHG emissions and climate change would be *significant and unavoidable*.