

I. AIR QUALITY

This section is based on information provided by the project applicant, the County of San Luis Obispo (County), the San Luis Obispo County Air Pollution Control District (SLOAPCD), Fehr & Peers (EIR transportation consultants), and modeling of vehicle and project-specific emissions using the computer program URBEMIS 2002 for Windows Version 8.7, provided by the California Air Resources Board (CARB). Emissions calculations from the URBEMIS modeling program are found in Appendix F.

The following section describes the existing air quality setting in San Luis Obispo County and the potential short-term and long-term impacts associated with development of the proposed project. Short-term construction emissions would result from grading and construction operations, transport of materials, and construction-related vehicle emissions. Long-term operational emissions would result from a combination of vehicle emissions and area source emissions related to the various development components.

1. Existing Conditions

a. Regional Meteorology

San Luis Obispo County is part of the South Central Coast Air Basin, which also includes Santa Barbara and Ventura Counties. The climate of the San Luis Obispo area is strongly influenced by its proximity to the Pacific Ocean. Airflow around the county plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific high pressure system and other global weather patterns, topographical factors, and circulation patterns that result from temperature differences between the land and the sea.

b. San Luis Obispo County

San Luis Obispo County constitutes a land area of approximately 3,316 square miles with varied vegetation, topography, and climate. From a geographical and meteorological standpoint, the county can be divided into three general regions: the Coastal Plateau, the Upper Salinas River Valley, and the East County Plain. Air quality in each of these regions is characteristically different, although the physical features that divide them provide only limited barriers to the transport of pollutants between regions.

Approximately 75 percent of the county population, and a corresponding portion of the commercial and industrial facilities, is located within the Coastal Plateau. Due to higher population density and closer spacing of urban areas, emissions of air pollutants per unit area are generally higher in this region than in other regions of the county. The proposed project is located within the Coastal Plateau.

c. Air Quality Monitoring

The county's air quality is measured by nine total ambient air quality monitoring stations, including four APCD operated permanent stations, two state operated permanent stations, two special stations, and one station operated by the ConocoPhillips Oil Refinery for monitoring Sulfur Dioxide (SO₂) emissions. Air quality monitoring is rigorously controlled by federal and

state quality assurance and control procedures to ensure data validity. Gaseous pollutant levels are measured continuously and averaged each hour, 24 hours a day. Particulate pollutants are generally sampled by filter techniques for averaging periods of three to 24 hours. PM₁₀ (inhalable particulate matter ten microns or less in size) and PM_{2.5} (inhalable particulate matter 2.5 microns or less in size) are sampled for 24 hours every sixth day on the same schedule nationwide.

d. Existing Air Quality

The significance of a given pollutant can be evaluated by comparing its atmospheric concentration to federal and state air quality standards. These standards represent allowable atmospheric contaminant concentrations at which the public health and welfare are protected, and include a factor of safety.

In San Luis Obispo County, ozone and PM₁₀ are the pollutants of main concern, since exceedances of state health-based standards for those are experienced here. For this reason the County has been designated as a non-attainment area for the State PM₁₀ and ozone standards.

The county achieved ozone attainment status granted by the CARB in January 2004. SLOAPCD was one of three air districts in California in 2004 to be re-designated from non-attainment to attainment for the state ozone standard. San Luis Obispo County was the first in California to achieve ozone attainment status through the implementation of community-wide emission reduction measures, making this accomplishment particularly noteworthy. The county was first designated non-attainment for the state ozone standard in 1989 after adoption of the California Clean Air Act. The law required each non-attainment area to develop a plan to attain the standards expeditiously. CARB adopted a new eight-hour standard of 0.070 parts per million (ppm) for ozone in July 2007. The county is currently designated non-attainment for ozone.

Most populated areas of the county have enjoyed good overall air quality in the last few years. According to the SLOAPCD 2005 Air Quality Report, the only criteria pollutant exceedances countywide were of the state PM₁₀ standard of 50 ug/m³, which occurred on only one out of 61 different sample days in 2004.

e. Global Climate Change

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer) (Environmental Protection Agency [EPA] 2007). Climate change may result from:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- Natural processes within the climate system (e.g. changes in ocean circulation); or,
- Human activities that change the atmosphere's composition (e.g. through burning fossil fuels) and the land surface (e.g. deforestation, reforestation, urbanization, desertification, etc.)

Human activities, such as fossil fuel combustion and land use changes, release carbon dioxide and other compounds, cumulatively termed greenhouse gases (GHGs). GHGs are effective in trapping infra-red radiation which otherwise would have escaped the atmosphere, thereby warming the atmosphere, the oceans, and Earth's surface (EPA, 2007).

1) Greenhouse Gases

GHGs are any gas that absorbs infrared radiation in the atmosphere (EPA, 2007). GHGs, as defined in Assembly Bill 32 (AB 32), includes the following: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). A brief summary of each GHG is summarized below (EPA 2007).

Carbon Dioxide (CO₂). CO₂ is a naturally occurring gas and also a byproduct of burning fossil fuels and biomass, as well as land-use changes and other industrial processes (EPA, 2007). Anthropogenic CO₂ is about 80 percent of current GHG emissions that affects the Earth's radiative balance. Atmospheric CO₂ has a lifetime of about 50 to 200 years (Environmental Monitor, Spring 2007).

Methane (CH₄). CH₄ is a hydrocarbon with a global warming potential estimated at 23 times that of CO₂. Methane is produced through anaerobic decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion. Atmospheric CH₄ has a lifetime of about 12 years (Environmental Monitor, Spring 2007).

Nitrous Oxide (N₂O). N₂O is a powerful greenhouse gas with a global warming potential of 310 times that of CO₂. Major sources of nitrous oxide include soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning. Atmospheric N₂O has a lifetime of about 120 years (Environmental Monitor, Spring 2007).

Hydrofluorocarbons (HFCs). HFCs are compounds introduced as alternatives to ozone depleting substances (commonly refrigerants). HFCs are emitted as byproducts of industrial processes and are also released during manufacturing. They are powerful GHGs with global warming potential ranging from 140 to 11,700 times that of CO₂. Depending on the HFC species, atmospheric HFCs have a lifetime of about one to 15 years (EPA, 2008; Environmental Monitor, Spring 2007).

Perfluorocarbons (PFCs). PFCs were introduced as alternatives, along with hydrofluorocarbons, to ozone-depleting substances. PFCs are also emitted as byproducts of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they are powerful GHGs with global warming potential ranging from 6,500 to 9,200 times that of CO₂. Atmospheric CO₂ has a lifetime of about 10,000 to 50,000 years (Environmental Monitor, Spring 2007).

Sulfur Hexafluoride (SF₆). SF₆ is a colorless gas soluble in alcohol and ether, slightly soluble in water, with a global warming potential 23,900 times that of CO₂. A very powerful GHG used

primarily in electrical transmission and distribution systems and as a dielectric in electronics. Atmospheric CO₂ has a lifetime of about 3,200 years (Environmental Monitor, Spring 2007).

2) Global Climate Change

A series of reports issued by the United Nations Intergovernmental Panel on Climate Change (UNIPCC) have synthesized recent scientific studies of climate change (UNIPCC 2007a, 2007b, 2000c). Key findings of these reports include the following:

- Global atmospheric concentrations of carbon dioxide, methane, and nitrous oxide have increased markedly as a result of human activities since 1750, and now are at about double pre-industrial levels. Global increases in carbon dioxide concentration are due primarily to fossil fuel use and land use change, and global increases in methane and nitrous oxide are due primarily to agriculture.
- Warming of the global climate due to GHGs is unequivocal, as evidenced by increases in air and water temperatures, widespread melting of snow and ice, and rising global average sea level. Most of the increase in global average temperatures since the mid-20th century is very likely due to increases in GHGs from human activities. GHG emissions increased 70 percent between 1970 and 2004.
- Numerous long-term climate changes observed have included changes in arctic temperatures and ice, precipitation, ocean salinity, wind pattern, and the frequency of extreme weather events such as droughts, heavy precipitation, heat waves, and tropical cyclone intensity.
- Continued GHG emissions at current rates would cause further warming and climate change during the 21st century that would very likely be larger than that observed in the 20th century.
- Climate change is expected to have adverse impacts on water resources, ecosystems, food and forest products, coastal systems and low-lying areas, urban areas, and public health. These impacts will vary regionally, and may be very expensive for agriculture and human activities. In some areas sea level rise may completely inundate now inhabited areas (e.g., river deltas, Pacific Islands).

3) California GHG Emissions and Climate Change

In California, the main sources of GHG emissions are from the transportation and energy sectors. According to the CARB draft GHG emission inventory for the year 2004, 39 percent of GHG emissions result from transportation and 25 percent of GHG emissions result from electricity generation. California produced 497 million metric tons of CO₂ equivalent (MMtCO₂e) in 2004 (CARB, 2007). California produces about two percent of the world's GHG emissions, with about 0.55 percent of the population.

The potential effects of future climate change on California resources include:

- Air temperature: increases of three to 10.4 degrees Fahrenheit by the end of the century, depending on the aggressiveness of GHG emissions mitigation.
- Sea level rise: six to 30 inches by the end of the century, depending on the aggressiveness of GHG emissions mitigation.
- Water resources: reduced Sierra snow pack, reduced water supplies, increased water demands, changed flood hydrology.
- Forests: changed forest composition, geographic range, and forest health and productivity, increased destructive wild fires.
- Ecosystems: changed habitats, increased threats to certain endangered species.
- Agriculture: changed crop yields, increased irrigation demands, increased impacts from tropospheric ozone.
- Public health: increased smog and commensurate respiratory illness and weather-related mortality (California Climate Change Portal [CCCP], 2007).

f. Existing Emissions

Industrial sources, in particular the Tosco (formerly Unocal) complex on the Nipomo Mesa, generate nearly all of the SO₂ emissions in the County. On a regional basis, ozone is the pollutant of greatest concern in the county, particularly within the Coastal Plateau. Ozone is a secondary pollutant, formed in the atmosphere by complex photochemical reactions involving precursor pollutants and sunlight. The amount of ozone formed is dependant upon both the ambient concentration of chemical precursors and the intensity and duration of sunlight. Consequently, ambient ozone concentration tends to vary seasonally with the weather. Reactive Organic Gases (ROG), also called Reactive Hydrocarbons (RHC), and Nitrogen Oxides (NO_x) are the primary precursors to ozone formation.

NO_x emissions result primarily from the combustion of fossil fuels; ROG emissions are also generated by fossil fuel combustion and through the evaporation of petroleum products. Emissions of ROG and NO_x are fairly equally divided between mobile and stationary sources, in the County. Automobiles and electrical generation produce the majority of NO_x emissions.

Local concentrations of inert (non-reactive) pollutants (carbon monoxide, ozone, PM₁₀) are primarily influenced by nearby sources of emissions, and thus, vary considerably between monitoring stations. SO₂ emissions are mainly concentrated around areas where large quantities of fossil fuels are either burned in electrical production or where petroleum products are refined (i.e., SO₂ levels on the Nipomo Mesa and the Duke Energy facility in Morro Bay).

2. Regulatory Setting

a. Federal Clean Air Act Amendments

Air quality protection at the national level is provided through the federal Clean Air Act Amendments (CAAA). President George Bush, Sr. signed the current version into law on November 15, 1990. These amendments represent the fifth major effort by the U.S. Congress to improve air quality. The 1990 CAAA are generally less stringent than the California law. Similar to the California law, the CAAA set statutory deadlines for attaining health standards for ambient air. The 1990 CAAA added several new sections to the law, including requirements for the control of toxic air contaminants; reductions in pollutants responsible for acid deposition; development of a national strategy for stratospheric ozone and global climate protection; and requirements for a national permitting system for major pollution sources.

b. California Clean Air Act

The California Clean Air Act (CCAA) was signed into law in September of 1988. It requires all areas of the state to achieve and maintain the California ambient air quality standards by the earliest practicable date. These standards are generally more stringent than the federal standards; thus, emission controls to comply with the state law are more stringent than necessary for attainment of the Federal standards. The CAAA requires that all APCDs adopt and enforce regulations to achieve and maintain the State ambient air quality standards for the area under its jurisdiction. Pursuant to the requirements of the law, in 1991 the SLOAPCD adopted a Clean Air Plan (CAP) that has undergone subsequent updates as required.

The Final 2001 San Luis Obispo CAP is used by the SLOAPCD to address attainment of national and state fugitive dust (PM₁₀) and ozone standards for the entire county (SLOAPCD 2004). This plan is a comprehensive planning document providing guidance to the APCD and other local agencies, including the County, on how to attain and maintain the State standard for ozone and PM₁₀. The CAP presents a detailed description of pollutant sources, future air quality impacts expected under current growth trends, and an appropriate control strategy for reducing ozone precursor emissions, thereby improving air quality.

c. California Climate Change Legislation and Programs

1) Vehicle Climate Change Standards

AB 1493 (Chapter 200, Statutes of 2002), requires the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light-duty trucks. Regulations were adopted by CARB in September 2004. The CARB analysis of this regulation indicates emissions savings of one Million Metric Tonnes (MMt) of CO₂ equivalent (CO₂e) by 2010 and 30 MMtCO₂e by 2020. For these standards to go into effect, EPA must approve a waiver of CCAA requirements to allow California (and other states) motor vehicle standards to exceed federal standards.

2) AB 32 – California Global Warming Solutions Act of 2006

The California Global Warming Solutions Act of 2006 (AB 32, Health and Safety Code Secs. 38500 et seq.) requires CARB to design and implement emission limits, regulations, and other measures. These will reduce, by 2020, statewide GHG emissions in a technologically feasible

and cost-effective manner to 1990 levels (representing a 25 percent reduction). The following summarizes the process and schedule for implementing AB 32:

- June 30, 2007 – CARB publishes a list of discrete early action GHG emission reduction measures that can be implemented prior to the measures and limits to be adopted to meet the 2020 limit. On September 7, 2007, CARB released a list of additional early action measures and discrete early actions.
- January 1, 2008 – CARB determines what the statewide greenhouse gas emissions level was in 1990 and approves a statewide GHG limit that is equivalent to that level.
- January 1, 2008 – CARB adopts regulations requiring the reporting and verification of statewide GHG emissions.
- January 1, 2009 - CARB adopts a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in GHG emissions from sources or categories of sources of greenhouse gases by 2020.
- January 1, 2010 – CARB adopts and enforces regulations to implement the GHG emission reduction measures identified on the early action list in 2007.
- January 1, 2011 – CARB adopts regulations to achieve the required reduction of GHG emissions to 1990 levels by 2020.
- January 1, 2012 – GHG emission limits and emission reduction measures adopted by January 1, 2011 become enforceable.

3) Senate Bill 97

CEQA requires the Office of Planning and Research (OPR) to prepare and develop proposed guidelines for implementation of CEQA by public agencies. Accordingly, SB 97 (Chapter 185, Statutes of 2007) requires OPR to develop guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions by July 1, 2009. The Resource Agency must certify and adopt those guidelines by January 10, 2010. Until these guidelines are adopted, there is no formal guidance on how to conduct climate change analyses in CEQA documents.

4) Governor's Executive Orders

Executive Order S-3-05 was signed in 2005, and calls for a reduction of GHG emissions to 2000 levels by 2010, a reduction of GHG emissions to 1990 levels by 2020, and a reduction of GHG emissions to 80 percent below 1990 levels by 2050. The order directs the California Environmental Protection Agency (CalEPA) secretary to coordinate development and implementation of strategies to achieve the GHG reduction targets in conjunction with the secretary of Business, the Transportation and Housing Agency, the secretary of the Department of Food and Agriculture, the secretary of the Resources Agency, the chairperson of CARB, the chairperson of the California Energy Commission (CEC), and the president of the California Public Utilities Commission (CPUC).

CalEPA developed the Climate Action Team (CAT), made up of representatives from the agencies listed above to implement the strategies to reduce GHG emissions. The order also includes a reporting requirement for CalEPA to the governor and legislature. The first report was released in March, 2006 (CalEPA, 2006), and a report will be issued bi-annually in the future. CAT has also issued a report on proposed early actions to mitigate climate change in California (CAT, 2007).

Executive Order S-1-07, the Low Carbon Fuel Standard (LCFS) (issued on January 18, 2007), calls for a reduction of at least ten percent in the carbon intensity of California's transportation fuels by 2020. The executive order instructed CalEPA to coordinate activities between the University of California, the CEC, and other state agencies to develop and propose a draft compliance schedule to meet the 2020 target. Furthermore, the order directed CARB to consider initiating regulatory proceedings to establish and implement the LCFS. In response, CARB identified the LCFS as an early action item with a regulation to be adopted and implemented by 2010.

d. San Luis Obispo County GHG Emission Reduction Efforts

Local efforts to quantify and reduce GHG emissions have primarily been undertaken by SLOAPCD, who provided the following information in a recent public statement:

“Many of the programs currently implemented by the District to reduce emissions and exposure to criteria and toxic air pollutants have ancillary benefits in reducing greenhouse gas emissions. The following is a brief summary of these programs: Options for Addressing Climate Change:

- **Rules and Regulations:** Numerous rules adopted by the Board and implemented by the District to address criteria pollutant emissions also have the side benefit of reducing greenhouse gases. For instance, several District rules address conventional emissions from combustion sources such as boilers, heaters and engines that often result in equipment modifications or replacement that improves the energy efficiency of those units and reduces fossil fuel use. Similarly, rules that regulate or prohibit open burning activities reduce CO₂ emissions from that activity. District Rule 426 regulates landfill emissions of methane.
- **Clean Fuels:** The District is actively involved in and supports the efforts of the Central Coast Clean Cities Coalition (C5), a local nonprofit coalition which promotes the use of cleaner alternative fuel technologies. With over 40 % of the greenhouse gas emissions coming from mobile sources, these efforts are an essential tool in reducing fossil fuel use and associated CO₂ emissions.
- **Development Review:** Through the California Environmental Quality Act (CEQA) review process the District evaluates impacts from land use development projects and recommends measures to reduce emissions. Mitigation measures focus on reducing emissions from motor vehicles and improving energy efficiency, both of which directly reduce criteria pollutants and GHGs. Such strategies include incorporation of energy efficiency measures (increased insulation, high efficiency appliances and

lighting, passive and active solar systems, etc.) that go beyond current building standards; and including Smart Growth principles into the project design to reduce vehicle trips and increase the viability of alternative transportation.

- **Grant Programs:** Many emission reduction projects funded through the various grant programs administered by the District result in replacement or retrofit of older, high emission engines with cleaner and more efficient engines that simultaneously reduce fuel use, thus reducing CO2 emissions. Conversion of stationary and mobile diesel engines to natural gas or electric motors also serves to reduce CO2 emissions.
- **Transportation Choices Program:** In partnership with SLO Regional Rideshare, Ride-On and the APCD, the Transportation Choices Program (TCP) is a free program offered to businesses and organizations throughout SLO County to reduce employee and student commute trips and promote the use of alternative transportation.
- **Pollution Prevention:** The Pollution Prevention Program promotes the use of and publicly recognizes small businesses which successfully employ pollution prevention and emission reduction techniques as part of routine operating procedures. Many of the businesses so recognized have incorporated operational changes that reduce their emissions through efficiency improvements that also reduce fuel and product use and saves (sic) energy.
- **Public Outreach:** The APCD implements a number of outreach campaigns to promote a variety of clean air programs, including backyard burning reduction programs, clean car awareness, pollution prevention, energy efficiency and transportation alternatives, all of which promote community consciousness and lifestyle choices that can help reduce our impacts on climate change.”

Currently, no complete GHG inventory for the county exists, although efforts are being made to develop one. Therefore, this EIR presents an estimate of current and future GHG emissions as informational material.

3. Thresholds of Significance

The significance of potential air quality impacts are based on thresholds identified within Appendix G of the CEQA Guidelines and standards established within the SLOAPCD CEQA Air Quality Handbook. The specifics of these guidelines are defined below.

a. CEQA Guidelines

Appendix G of the CEQA Guidelines provides the following thresholds for determining significance with respect to air quality. Air quality impacts would be considered significant if the proposed project would:

- Conflict with or obstruct implementation of the applicable air quality plan;

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or,
- Create objectionable odors affecting a substantial number of people.

b. County of San Luis Obispo Initial Study Checklist

The County of San Luis Obispo Initial Study Checklist provides the following thresholds for determining significance with respect to air quality. Air quality impacts would be considered significant if the proposed project would:

- Violate any state or federal ambient air quality standard, or exceed air quality emission thresholds as established by County Air Pollution Control District;
- Expose any sensitive receptor to substantial air pollutant concentrations;
- Create or subject individuals to objectionable odors; or,
- Be inconsistent with the District's Clean Air Plan.

c. SLOAPCD CEQA Air Quality Handbook

According to the April 2003 CEQA Air Quality Handbook, project impacts may also be considered significant if one or more of the following special conditions apply:

- If the project has the ability to emit hazardous or toxic air pollutants in the close proximity of sensitive receptors such that an increased cancer risk affects the population.
- If the project has the potential to emit diesel particulate matter in an area of human exposure, even if overall emissions are low.
- Remodeling or demolition operations where asbestos-containing materials will be encountered.
- If naturally occurring asbestos has been identified in the project area.
- If project has the ability to emit hazardous or toxic air pollutants in the close proximity of sensitive receptors such as schools, churches, hospitals, etc.
- If the project results in a nuisance odor problem to sensitive receptors.

The CEQA Air Quality Handbook defines thresholds for long-term operational emissions and short-term construction related emissions. Depending on the level of exceedance of a defined threshold, the APCD has established varying levels of mitigation.

1) Significance of Long-term Operational Emissions

The threshold criteria established by the SLOAPCD to determine the significance and appropriate mitigation level for long-term operational emissions (i.e., vehicular and area source emissions) from a project are presented in Table V.I.-1. Emissions that equal or exceed the designated threshold levels are considered potentially significant and should be mitigated. As shown in the table, the level of analysis and mitigation recommended follows a tiered approach based on the overall amount of emissions generated by the project. For projects requiring air quality mitigation, the APCD has developed a list of both standard and discretionary mitigation strategies tailored to the type of project being proposed: residential, commercial, or industrial. The level of mitigation is shown in Table V.I.-2.

**TABLE V.I.-1
APCD Thresholds of Significance for Operational Emissions Impacts**

Pollutant	Threshold	Tier I	Tier II	Tier III
ROG, NO _x , SO ₂ , PM ₁₀	<10 lbs/day	10 lbs/day	25 lbs/day	25 tons/yr
CO	<550 lbs/day	---	550 lbs/day	---
Level of Significance	Insignificant	Potentially Significant	Significant	Significant
Environmental Document	Negative Declaration	Mitigated ND	MND or EIR	EIR

Source: County of San Luis Obispo, APCD CEQA Air Quality Handbook, 2003

**TABLE V.I.-2
Mitigation Threshold Guide**

Emissions	Mitigation Measures Recommended		
	Standard Discretionary	Discretionary	Off-Site
< 10 lbs/day	None	None	None
10 - 14 lbs/day	All	3	None
15 - 19 lbs/day	All	6	None
20 - 24 lbs/day	All	10	None
≥ 25 lbs/day	All	All Feasible	Maybe
≥ 25 tons/yr	All	All Feasible	Yes

Source: County of San Luis Obispo, APCD CEQA Air Quality Handbook, 2003

2) Significance of Short-term Construction Emissions

Use of heavy equipment and earth-moving operations during project construction can generate fugitive dust and combustion emissions that may have substantial temporary impacts on local air quality. Fugitive dust emissions would result from land clearing, demolition, ground excavation, cut and fill operations, and equipment traffic over temporary roads at the construction site. Combustion emissions such as NO_x, and diesel particulate matter, are most significant when using large diesel fueled scrapers, loaders, dozers, haul trucks, compressors, generators, and other types of equipment. Because specific construction equipment information is often not available during the EIR process, the APCD has developed an alternative method for calculating construction emissions based on the amount of earthwork involved for a particular project. Table V.I.-3 summarizes the level of emissions requiring mitigation.

**TABLE V.I.-3
Level of Construction Activity Requiring Mitigation**

Pollutant	Emissions		Amount of Material Moved	
	Tons/Qtr	Lbs/day	Cu. Yds/Qtr	Cu. Yds/Day
ROG	2.5	185	247,000	9,100
	6.0	185	593,000	9,100
NO _x	2.5	185	53,500	2,000
	6.0	185	129,000	2,000
PM ₁₀	2.5		Any project with a grading area greater than 4.0 acres of continuously worked area will exceed the 2.5-ton PM ₁₀ quarterly threshold. Combustion emissions should always be calculated based upon the amount of cut and fill expected.	

Note: All calculations assume working conditions of 8 hours per day, 5 days per week, for a total of 65 days per quarter.

Source: County of San Luis Obispo APCD CEQA Air Quality Handbook, 2003

d. Greenhouse Gas Emissions

At the current time there is no regulatory guidance available to assist lead agencies in establishing thresholds of significance for GHG emissions that result from proposed projects. Given the significant amount of GHGs emitted on a daily basis worldwide, it seems unlikely that an individual project could impact global warming. The GHG emissions generated by an individual project could be estimated; however, there is no emissions threshold that can be used to evaluate the CEQA level of significance of these emissions. Determining the CEQA significance of the proposed project at a project-level is speculative. At the same time, it seems reasonable to assume that nearly all projects that involve the consumption of fossil fuels, for example, would contribute cumulatively to global warming.

In the absence of quantitative emission thresholds, consistency with adopted programs and policies is used by many jurisdictions to evaluate the significance of cumulative impacts. The

strategies recommended by CAT serve as current statewide approaches to reducing the state's GHG emissions. Consistency with these strategies is assessed to determine if the contribution of the proposed project to cumulative GHG emissions is considerable.

4. Impact Assessment and Methodology

The APCD has established four separate categories of evaluation for determining the significance of air quality emissions. Full disclosure of the potential air pollutant and/or toxic air emissions from a project is needed for these evaluations, as required by CEQA. The evaluation categories include:

- Comparison of calculated project emissions to APCD emission thresholds;
- Consistency with the most recent CAP for the County;
- Comparison of predicted ambient pollutant concentrations resulting from the project to federal and state health standards, when applicable; and
- The evaluation of special conditions that apply to certain projects.

Impacts have been analyzed using a reasonable “worst-case” analysis approach for air quality resources. The specific methodologies of each “worst-case” approach are described within Section V.5, Project-Specific Impacts and Mitigation Measures, under each project component heading, as applicable. Emission estimates for the proposed project have been determined through the following:

- Consultation with SLOAPCD;
- Use of the SLOAPCD CEQA Air Quality Handbook (April 2003);
- Use of the SLOAPCD CAP (December 2001);
- Use of the 2002 URBEMIS 8.7 modeling software program designed to estimate operational air emissions from land development projects;
- Use of established emission factors that quantify the amount of emissions of a pollutant per unit time or energy volume;
- Mass emission estimates that quantify the amount of emissions of a pollutant in pounds per cubic yard of earthwork; and,
- Incorporation of the Traffic and Circulation Study prepared by Fehr & Peers for the proposed project and included in Appendix E.

Subsequent to the determination of emission estimates for any individual project resulting from the proposed rezoning and development, emissions were analyzed in accordance with the thresholds of significance put in place by SLOAPCD. This analysis provides the basis for the determination of the specific level of impact significance in association to SLOAPCD tiered thresholds.

Specific information regarding construction equipment usage was unavailable at the time this EIR was written; therefore, short-term construction-related emissions were assessed using mass emission estimates that quantify the amount of emissions of a pollutant in pounds per cubic yard of earthwork. Mass emission estimates are provided in the APCD CEQA Air Quality Handbook.

5. Project-specific Impacts and Mitigation Measures

a. Short-term Construction Related Emissions

1) Combustion Emissions (ROG, and NO_x,)

It has been estimated by the applicant that the area of disturbance required to construct the tract improvements, the WWTP and ponds, equestrian facility, and ranch headquarters would include 53.4 acres. A total of 300,500 cubic yards of cut and 150,500 cubic yards of fill would be required. Grading estimates for the future dude ranch are unknown, and are not included in the emissions calculations; however, it can be reasonably assumed that construction activities would result in similar impacts, and mitigation identified below would apply.

Based on the topography of the site, and unrestricted outdoor uses, it is anticipated that each of the 101 new homes would require approximately 0.5 acre of grading. Tract improvements require approximately 8,400 cubic yards of cut and fill per acre of disturbance (450,500 cubic yards/53.4 acres). Using that figure, construction of the new residences would require approximately 424,200 cubic yards of disturbance. It is unclear at this time what the proportions of cut and fill would be. However if the tract improvements were used as a guide, a significant amount of material, approximately 140,000 cubic yards of material may be in excess. Table V.I.-4 includes the estimated earthwork required for each project component.

**TABLE V.I.-4
Estimated Earthwork by Project Component (cubic yards)**

Component	Cut	Fill	Total
Tract Improvements	200,000	100,000	300,000
WWTP and Ponds	90,000	40,000	130,000
Equestrian Facilities	7,500	7,500	15,000
Ranch Headquarters	3,000	3,000	6,000
Residences			424,200*
Total			864,700
<i>*Estimated</i>			

No specific construction schedule, aside from project phasing, has been provided by the applicant. Air Quality impacts associated with the Biddle Ranch Agricultural Cluster, a somewhat similar project, estimated that grading would occur on approximately one acre per day. Using that scenario, earthwork for all of the improvements associated with the proposed project would occur over a 105 working day period (54 acres of disturbance for tract improvements and 51 for residential grading). Assuming 22 working days per month, earthwork would be completed in approximately five months. However, because the residential lots would be sold individually, all grading for individual lots would most likely not occur within this period. Emissions estimates calculated per quarter are conservative (refer to Table V.I.-4).

Therefore, the total emissions expected and the emissions expected per day should be considered most accurate.

**TABLE V.I.-5
Construction Equipment Emission Calculations**

Screening Emission Rates for Construction Operations ¹					
Mass Emission Rates					
Reactive Organic Gases (ROG)	0.0203 lbs/yd ³				
Oxides of Nitrogen (NOx)	0.0935 lbs/yd ³				
Combustion Particulate (PM10)	0.0049 lbs/yd ³				
Carbon Monoxide (CO)	0.3040 lbs/yd ³				
Sulfur Oxides (SOx)	0.0100 lbs/yd ³				
Construction Activities					
Estimated Volume of Cut & Fill (yd3)	864,700				
Maximum Rate of Earth Moved Per Day (yd3)	8,235				
Total Working Days of Earth Movement (days)	105				
Construction Hours Per Day (hours)	8				
	ROG	NOx	PM₁₀	CO	SOx
Total Construction Emissions (lbs)	17,553	80,849	4,237	262,869	8,647
Total Construction Emissions (tons/qtr)	5.5	25.4	1.32	82.6	2.7
Total Construction Emissions Per Day (lbs)	167	770	40	2,504	82.4

¹ Bold numbers represent emission estimates that exceed one or more of the APCD thresholds for long-term project related emissions.

Source: Based on mass emission estimates, CEQA Air Quality Handbook, 2003.

AQ Impact 1 Construction of the proposed project would result in direct short-term air quality impacts associated with ROG and NO_x emissions.

AQ/mm-1 Prior to approval of subdivision improvement plans or grading permits, and subsequent individual lot construction permits, applicable plans shall show the following measures. During construction of all phases of development, and individual lot development, the applicants shall:

- a. Maintain records showing that all construction equipment is in proper tune according to manufacturer’s specifications.
- b. Fuel all off-road and portable diesel powered equipment with ultra-low sulfur diesel fuel (15 ppm sulfur limit). This includes but is not limited to bulldozers, graders, cranes, loaders, scrapers, backhoes, generator sets, compressors and auxiliary power units. Use a biodiesel blend of ten percent or greater to minimize Diesel Particulate Matter (DPM), which is a recognized carcinogen.
- c. Wherever possible, use electrical or clean-fuel equipment (e.g., propane powered fork lifts).

- d. Maximize to the extent feasible use of diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines.
- e. Install diesel oxidation catalysts (DOC), catalyzed diesel particulate filters (CDPF) or other District approved emission reduction retrofit devices. Determination of the appropriate control devices for the project must be performed in consultation with APCD staff, a minimum of eight weeks prior to construction to allow adequate time for device procurement and installation.

AQ/mm-2 Prior to approval of subdivision improvement plans or grading permits, and subsequent individual lot construction permits, if it is determined that portable engines and portable equipment will be utilized, the contractor shall contact the SLOAPCD and obtain a Permit to Operate. This equipment shall be registered in the statewide portable equipment registration program. Contact APCD Engineering Department at 781-5912.

Residual Impact With implementation of the above measures, this impact would be considered *less than significant with mitigation, Class II*.

2) Fugitive Dust Emissions (PM₁₀)

Heavy equipment used for earth-moving operations during project construction and vineyard development would generate fugitive dust. This could have substantial temporary impacts on local air quality. Fugitive dust emissions would result from land clearing, demolition, ground excavation, cut and fill operations, and equipment traffic over temporary dirt roads at construction sites. Fugitive dust emissions (PM₁₀) would occur at a rate of approximately 55 lbs/acre/day of disturbed land (U.S. Environmental Protection Agency, 1996). Impacts from fugitive dust emissions would be significant because they could cause a public nuisance or would exacerbate the existing high PM₁₀ levels found in the Nipomo Mesa Area.

Since the county is classified non-attainment for PM₁₀, the SLOAPCD requires Best Management Practices (BMPs) for all projects involving earthmoving activities regardless of the project size or duration. All standard APCD dust control mitigation measures shall be incorporated into the construction phases of each of the proposed project components to reduce the potential to generate nuisance dust problems and maintain PM₁₀ emissions below the APCD's mitigation threshold.

AQ Impact 2 **PM10 emissions from construction activities would create short and long-term impacts on air quality, further exacerbating the County non-attainment status for PM10.**

AQ/mm-3 Prior to approval of subdivision improvement plans or issuance of grading permits, and subsequent individual lot construction permits, a Dust Control Plan shall be prepared and submitted to the APCD for approval

prior to commencement of construction activities. The Dust Control Plan shall:

- a. Use APCD approved BMPs and dust mitigation measures;
- b. Provide provisions for monitoring dust and construction debris during construction;
- c. Designate a person or persons to monitor the dust control program and to order increased watering or other measures as necessary to prevent transport of dust off-site. Duties should include holiday and weekend periods when work may not be in progress;
- d. Provide the name and telephone number of such persons to the APCD prior to construction commencement.
- e. Identify compliant handling procedures.
- f. Fill out a daily dust observation log.

AQ/mm-4

Prior to approval of subdivision improvement plans or issuance of grading permits, and subsequent individual lot construction permits, the applicant shall:

- a. Obtain a compliance review with the APCD prior to the initiation of any construction activities;
- b. Provide a list of all heavy-duty construction equipment operating at the site to the APCD. The list shall include the make, model, engine size, and year of each piece of equipment. This compliance review will identify all equipment and operations requiring permits and will assist in the identification of suitable equipment for the catalyzed diesel particulate filter;
- c. Apply for an Authority to Construct from the APCD.

AQ/mm-5

Prior to approval of subdivision improvement plans or issuance of grading permits, and subsequent individual lot construction permits, the following mitigation measures shall be shown on all project plans, included in the Dust Control Plan, and implemented during the appropriate grading and construction phases.

- a. Reduce the amount of the disturbed area where possible.
- b. Water trucks or sprinkler systems shall be used in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency shall be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water shall be used whenever possible.
- c. All dirt stockpile areas shall be sprayed daily as needed.
- d. 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.

- e. All disturbed soil areas not subject to re-vegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD.
- f. All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible after initial site grading. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- g. Construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- h. All trucks hauling dirt, sand, or other loose materials are to be covered or shall maintain at least two feet of free board (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114.
- i. Wheel washers shall be installed where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.
- j. Streets shall be swept at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used when feasible.
- k. Permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities.

AQ/mm-6

During construction of subdivision improvement plans and individual lot grading, the applicant shall maintain monthly compliance checks throughout the construction phase. This includes verifying that all equipment and operations continue to comply with the APCD requirements. Prior to final inspection monitoring reports shall be provided to the APCD and County Planning and Building Department for approval.

AQ/mm-7

The following measure applies during construction of subdivision improvement plans, and shall be included in all applications for subdivision improvement plans: The APCD generally prohibits developmental vegetation burning within San Luis Obispo County. However, under certain circumstances, where no technically feasible alternatives are available, limited developmental burning under restrictions may be allowed. Any such exception must complete the following prior to any burning: APCD approval; payment of fee to APCD based on the size of the project; and issuance of a burn permit by the APCD and the local fire department authority. As a part of APCD approval, the applicant shall furnish them with the study of technical feasibility (which includes costs and other constraints) at the time of application. For any questions regarding these requirements, APCD's Enforcement Division may be contacted (805.781.5912).

Residual Impact Implementation of the above mitigation measures will result in PM₁₀ related air quality impacts considered *less than significant with mitigation, Class II*.

3) Hazardous Air Pollutant Emissions

Demolition and/or remodeling activities have the potential to negatively impact air quality. Any future development of the Homeowners Association facilities may involve the demolition of several pre-existing older buildings. These include an older residence with the possibility of asbestos or other hazardous building materials. Demolition and remodeling activities are subject to the National Emission Standard for Hazardous Air Pollutants. These emissions standards regulate how asbestos containing building materials are removed and subsequently disposed of at landfills.

APCD Rule 501 allows backyard burning for residential homes outside of Urban or Village Reserve Lines when homeowners obtain APCD backyard burning permits. Greenwaste burning within or around clustered developments may result in a nuisance and negative health impacts to residents. The APCD recommends prohibition of backyard greenwaste burning to avoid this effect.

AQ Impact 3 **Demolition activities for the Homeowner’s Association facilities development may potentially lead to adverse air quality impacts during removal or remodeling of existing structures. This could occur from the presence of hazardous air pollutants resulting in a short-term impact.**

AQ/mm-8 Prior to approval of subdivision improvement plans or grading permit issuance, the following measures shall be included as conditions of approval for any future proposed development within the homeowner’s association site. Prior to commencement of demolition activities, the applicant shall:

- a. Notify the APCD at least ten working days prior to commencement of any demolition activities;
- b. Conduct an Asbestos survey by a Certified Asbestos Inspector;
- c. Use applicable disposal and removal requirements for any identified asbestos containing material.
- d. Contact the SLOAPCD Enforcement Division prior to final approval of any demolition activity.

Residual Impact Implementation of the above mitigation measure will result in demolition related air quality impacts considered *less than significant with mitigation, Class II*.

AQ Impact 4 **Backyard burning of greenwaste material may result in a nuisance and negative health effects, resulting in a direct, short-term impact.**

AQ/mm-9 Prior to application for a final map, CC&R's shall include the following measure: Residential greenwaste burning shall be prohibited.

Residual Impact Implementation of the above mitigation measure will result in open-burning and smoke related air quality impacts considered *less than significant with mitigation, Class II*.

4) Asbestos Exposure

The project site has been identified by the APCD as an area that has the potential to contain naturally occurring asbestos. Construction and development of the project could result in an exposure of naturally occurring asbestos due to earthwork and the excavation of serpentine and ultramafic rock.

AQ Impact 5 Earth moving activities for development of the proposed project components may expose naturally occurring asbestos, resulting in a short-term impact.

AQ/mm-10 At the time of application for subdivision improvement plans or grading permits, and subsequent individual lot construction permits, the applicants shall:

- a. Conduct a geologic analysis to determine the presence or absence of ultramafic and/or serpentine rock onsite. The geologic analysis shall identify if asbestos is contained within these rocks onsite; and,
- b. If naturally-occurring asbestos is found at the project site, the applicant must comply with all requirements outlined in APCD Rule 412, which incorporates state regulations at 17 CCR, SS 93104, and federal regulations at 40 CFR Part 63. In addition, the applicants shall work with the APCD to prepare an Asbestos Health and Safety Program and an Asbestos Dust Control Plan prior to development plan approval. These plans may include, but are not limited to, the following:
 1. Equipment operator safety requirements: protective clothing, breathing apparatuses to prevent inhalation of airborne asbestos fibers,
 2. Dust mitigation measures: continually water site to prevent airborne dust migration, cover all vehicle that haul materials from the site, all other legally required mitigation requirements, and
 3. Identification of APCD-approved disposal areas for all excavated materials.
- c. If naturally-occurring asbestos is not present, an exemption request must be filed with the APCD.

Residual Impact Implementation of the above mitigation measure will result in asbestos-related air quality impacts considered *less than significant with mitigation, Class II*.

b. Long-term Project Related Operational Emissions

Long-term operational emissions would result from a combination of increased vehicle traffic and area source emissions. Development of the project components would create substantial emissions to regional air quality due to increased vehicle traffic. It is estimated that in total, the proposed project would result in an average of approximately 1,234 vehicle trips per day resulting from residential land usage and various project related commercial activities. Traffic related air quality impacts would potentially be significant because the residential and commercial/retail facilities associated with the proposed project would direct traffic to one specific destination, thus concentrating emissions of ROG and NO_x at the project site.

Area source emissions result from energy consumption, such as fossil fuel burning for space heating. Area source emissions result from a combination of the previously mentioned vehicle traffic, combined with stationary sources such as fireplaces, space/water heaters, and a combination of project related commercial and industrial contributions. Operational emissions were determined through the use of the URBEMIS 2002 for Windows 8.7 software program (refer to Appendix F). Trip rates were determined from the Fehr & Peers *Traffic and Circulation Study* prepared for the project.

Long-term operational emission estimates for the development of the proposed project are shown in Table V.I.-5 and the URBEMIS data sheets are included in Appendix F. The emission estimates shown in Table V.I.-5 are a combination of summer and winter quantities. Winter area source emission estimates are usually higher because more energy is required and consumed, and the fuel combustion for heating is much greater than the summer months. As the SLOAPCD suggests, the data from the URBEMIS modeling program was adjusted by using 1/3 of the pounds per day winter emission estimates and adding those figures to 2/3 of the pounds per day summer emission estimates to get a normalized daily average. The tons per year emission estimates need no adjustment.

The combined total of vehicle and area source emissions would result in long-term operational emission exceeding the APCD's Tier I Threshold for ROG, NO_x, and PM₁₀, and the Tier II Threshold for ROG and NO_x. The Tier III Thresholds would not be exceeded.

**TABLE V.I.-6
Combined Project Long-Term Operational Emissions**

Long-Term Operational Emissions	Emission Estimates (lbs/day)					Emission Estimates (tons/yr)				
	ROG	NO _x	CO	SO ₂	PM ₁₀	ROG	NO _x	CO	SO ₂	PM ₁₀
Area Source Emissions	28.64	2.90	39.34	0.12	5.22	3.91	0.47	5	0.01	0.65
Operational (Vehicle) Emissions	15.43	24.31	199.74	0.13	22.89	2.84	4.48	36.82	0.02	4.22
Total	44.07	27.21	239.08	0.24	28.11	6.75	4.96	41.82	0.04	4.87
APCD Tier I Thresholds	10	10		10	10	--	--	--	--	--
APCD Tier II Thresholds	25	25	≥ 50	25	25	--	--	--	--	--
APCD Tier III Thresholds	--	--	--	--	--	25	25	--	25	25

Note: Bold numbers represent emission estimates that exceed one or more of the APCD thresholds for long-term project related emissions.

AQ Impact 6 **ROG, NO_x and PM₁₀ long-term operation emissions would exceed the APCD’s Tier II Threshold. Development of the project would result in a direct long-term impact on air quality.**

AQ/mm-11 The following mitigation measures shall be implemented at the time of application for subdivision improvement plans or grading permits, and individual lot construction permits: Where applicable, only wood burning devices meeting SLOAPCD Rule 504 shall be installed.

AQ/mm-12 At the time of application for subdivision improvement plans or grading permits, and subsequent individual lot construction permits, the applicant shall submit plans and covenants, conditions and restrictions demonstrating compliance with the following measures:

- a. Increase the building energy efficiency rating by 20 percent above Title 24 requirements (i.e., increase attic, wall, or floor insulation, install double pane windows, use efficient interior lighting, etc.).
- b. Use electric lawnmowers for common area landscaping.
- c. Use drought-resistant native trees, trees with low emissions (e.g., terpenes), and high carbon sequestration potential. Evergreen trees on the north and west sides afford the best protection from the setting summer sun and cold winter winds. Additional considerations include the use of deciduous trees on the south side of the house that will provide shade in summer but allow sunlight in winter.
- d. Install solar panels and solar water heaters to achieve at least 50 percent of expected building energy needs.
- e. Building positioning and engineering that eliminate or minimize the development’s active heating and cooling needs (e.g., solar orientation).

- f. Have two to three neighborhood electric vehicles available onsite for residents to use to travel between homes and project amenities (i.e., pool, spa, community center).
- g. Provide front and back yard outdoor electrical outlets to encourage the use of electric appliances and tools.
- h. Construct bicycle routes/lanes on all internal roads, local streets, and collectors.
- i. Build new homes with internal wiring/cabling that allows Internet use simultaneously in at least three locations in each home.
- j. Provide pedestrian signalization and signage to improve pedestrian safety.
- k. Shade tree planting along southern exposures of buildings to reduce summer cooling needs.
- l. Use roof material with a solar reflectance value meeting the EPA/DOE Energy Star® rating to reduce summer cooling needs.
- m. Use high efficiency, gas or solar water heaters.
- n. Use energy efficient built-in appliances.
- o. Use low energy street and common area lights (i.e. sodium).
- p. Use energy efficient interior lighting.
- q. Use low energy traffic signals (i.e. light emitting diode).
- r. Install door sweeps and weather stripping if more efficient doors and windows are not available.
- s. Install high efficiency or gas space heating.
- t. Provide passive ambient ceiling lighting (sky lights, solar tubes) in at least 50 percent of occupied rooms, closets, and bathrooms.

AQ/mm-13

At the time of application for subdivision improvement plans or grading permits, the applicant shall consult with SLOAPCD to define and implement off-site emission reduction measures to reduce emissions to below Tier II levels. Excess emissions shall be multiplied by the cost effectiveness of mitigation as defined in the State's current Carl Moyer Incentive Program Guidelines to determine the annual off-site mitigation amount. This amount shall then be extrapolated over the life of the project to determine total off-site mitigation. Off-site emission reduction measures may include, but would not be limited to:

- a. Developing or improving park-and-ride lots;
- b. Retrofitting existing homes in the project area with APCD-approved wood combustion devices;
- c. Retrofitting existing homes in the project area with energy-efficient devices;
- d. Constructing satellite worksites;
- e. Funding a program to buy and scrap older, higher emission passenger and heavy-duty vehicles;
- f. Replacing/re-powering transit buses;

- g. Replacing/re-powering heavy-duty diesel school vehicles (i.e., bus, passenger, or maintenance vehicles);
- h. Funding an electric lawn and garden equipment exchange program;
- i. Retrofitting or re-powering heavy-duty construction equipment, or on-road vehicles;
- j. Re-powering marine vessels;
- k. Re-powering or contributing to funding clean diesel locomotive main or auxiliary engines;
- l. Installing bicycle racks on transit buses;
- m. Purchasing particulate filters or oxidation catalysts for local school buses, transit buses or construction fleets;
- n. Installing or contributing to funding alternative fueling infrastructure (i.e., fueling stations for CNG, LPG, conductive and inductive electric vehicle charging, etc.);
- o. Funding expansion of existing transit services;
- p. Funding public transit bus shelters;
- q. Subsidizing vanpool programs;
- r. Subsidizing transportation alternative incentive programs;
- s. Contributing to funding of new bike lanes;
- t. Installing bicycle storage facilities; and,
- u. Providing assistance in the implementation of projects that are identified in city or county bicycle master plans.

Residual Impact

Implementation of the above mitigation measures would offset long-term operational related air quality impacts, and would reduce emissions below Tier II thresholds; however, mitigation would not reduce potential impacts below Tier I thresholds. This impact is considered *significant and unavoidable, Class I*.

c. Odors

1) Equestrian Facility Odors

Equestrian uses can generate animal waste odors that may be considered a nuisance to nearby residents. Homes, particularly those on Lots 30 through 43, have the potential to be affected if odors are carried offsite. Offsite residences to the south of Los Berros Road may also be affected by odor nuisances.

2) Wastewater Treatment Plant Odors

Wastewater treatment plants have the potential to generate nuisance odors that impact nearby sensitive receptors (i.e., residents). Odors can be associated with the processing and storage of sludge and the effluent storage ponds. The proposed project would produce domestic wastewater from the residences and developments, and agricultural wastewater from the vineyard operations.

Domestic wastewater would be stored in underground tanks and pumped into the wastewater treatment plant for processing. Once separated, sludge would be held until it could be hauled to a permitted disposal facility. Treated residential liquid effluent would be stored in two, open air

ponds (Pond 1 and Pond 2) located near the southern boundary of the property (refer to Figures III-21 and III-22).

Agricultural wastewater would be treated in a plant adjacent to the domestic wastewater treatment plant. Treated agricultural effluent would be stored in Pond 3, also located south of the proposed residential developments. Effluent from both processes would be held in the ponds until it could be used for agricultural irrigation.

The proposed wastewater processing facility would be completely enclosed and include a biofilter odor control system. Biofilters utilize microorganisms in media such as mulch or soil to convert odorous emissions into by-products such as carbon dioxide and water (Webster, 2004). The SLOAPCD was aware of only one other biofilter currently being used in the county, at the City of Pismo Beach wastewater treatment plant. In their opinion, odors can potentially be effectively controlled through the use of a biofilter, if the filter is properly constructed and maintained (Guise, 2007).

AQ-Impact 7 The proposed wastewater treatment plant and the equestrian facility have the potential to generate odors that could be a nuisance to nearby residents.

AQ/mm-14 At the time of application for subdivision improvement plans or grading permits, the applicant shall develop and implement an odor abatement plan (OAP) to be implemented by the mutual water company for the wastewater treatment plant and the equestrian facility operator. The plan shall be submitted to the County Planning and Building Department and SLOAPCD for review and approval prior to issuance of grading permits. The plan(s) shall include the following:

- a. Name and telephone number of contact person responsible for logging and responding to odor complaints
- b. Policy and procedure to be taken when an odor complaint is received
- c. Description of the potential odor sources at onsite facilities.
- d. Description of methods for reducing odors at the facility.

Residual Impact Implementation of the above measure will result in odor related air quality impacts that are *less than significant with mitigation, Class II*.

d. **Generation of Dust**

Operation of the equestrian facility would likely result in the generation of fugitive dust, which may result in a nuisance to residents and agricultural operations both on and offsite. Dust complaints may result in a violation of the APCD's Rule 402 (Nuisance).

AQ-Impact 8 Operation of the proposed equestrian facility has the potential to generate dust that could be a nuisance to nearby residents and agricultural operations.

- AQ/mm-15 At the time of application for subdivision improvement plans or grading permits, the applicant shall submit an “Equestrian Center Dust Control Plan” to the County and APCD for review and approval. The plan shall include, but not be limited to, the following measures:
- a. Reduce the amount of disturbed area where possible.
 - b. Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency shall occur when wind speeds exceed 15 mph. Reclaimed (non-potable) water shall be used whenever possible.
 - c. Permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities.
 - d. All disturbed soil areas not subject to revegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD.
 - e. All access roads and parking areas associated with the facility shall be paved to reduce fugitive dust.
 - f. A person or persons shall be designated to monitor for dust and implement additional control measures as necessary to prevent transport of dust offsite. The monitor’s duties shall include holidays and weekends. The name and contact number of such person(s) shall be provided to the APCD prior to operation of the arena.

Residual Impact Implementation of the above measure will result in odor related air quality impacts that are *less than significant with mitigation, Class II*.

e. Consistency with Clean Air Plan (CAP)

The SLOAPCD CEQA Air Quality Handbook recommends assessing the following Clean Air Plan policies to determine consistency. These policies are in place to attain federal and state emission thresholds. Projects that are not consistent with the Clean Air Plan potentially contribute to unhealthful air pollutant levels, and interfere with the County’s ability to be in attainment.

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

Population projections in the 2001 CAP utilized the General Plan buildout projections for the unincorporated communities. Build-out assumptions used for the Agriculture and Rural Lands land use categories include one primary and one auxiliary dwelling unit for every 80 acres. For the 1,910-acre proposed project area, 24 units at build-out were assumed under the existing zoning. Given that the proposed project would increase the development potential of the project parcels (which are within the Agriculture and Rural Lands land use categories), and would likely result in emissions related to additional traffic trips by residents, the project is considered inconsistent with the CAP population projections.

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 proposed project is located in an area zoned Agriculture and Rural Lands. These areas are generally not expected to experience significant population growth. Based on the traffic analysis performed by Fehr and Peers, the proposed project would generate 1,234 new daily trips. Because the project is located in a rural area, commercial and other services are not located in close proximity to the proposed project. As a result, it is expected that vehicle miles resulting from each trip would be more than those made by residents in more urbanized areas.

3) Have all applicable land use and transportation control measures and strategies from the CAP been included in the plan or project to the maximum extent feasible?

The CAP includes 14 strategies intended to reduce the number of trips and vehicle miles traveled by encouraging “development of compact communities that provide a balance of housing and jobs, while fostering the use of alternatives to the automobile.” These strategies include providing a mix of land uses, balancing the number of jobs available with the housing available in each community, encouraging use of alternative transportation, among others. The proposed project would result in the construction of 102 residences in a rural area. The project is not expected to create long-term job opportunities. No commercial services are included in the development nor would they be located within walking or convenient bicycling distance from the project. There are no existing bike lanes or transit stops adjacent to the proposed development that could be incorporated into the project design. Residents would be reliant on the automobile for the vast majority of all trips made.

Based on the discussion above, the proposed project would increase the population expected for the region, result in potentially longer trip lengths, and does not incorporate land use or transportation control measures to any significant degree. As a result, the proposed project is considered inconsistent with the CAP, and would result in a significant, adverse impact to air quality.

AQ Impact 9 **The proposed project is inconsistent with the general land use and planning policies identified in the Clean Air Plan, resulting in air pollutants generated by increased traffic trips, resulting in a long-term, significant, and unavoidable impact.**

Implement AQ/mm-12 and AQ/mm-13.

Residual Impact Implementation of the above measure would reduce operational impacts generated by the proposed project; however, based on the project’s inconsistency with the Clean Air Plan, the project would result in an impact considered *significant and unavoidable, Class I*.

6. Cumulative Impacts

a. Cumulative Emissions and Consistency with the Clean Air Plan

In 1994, the South County Area Plan was adopted and associated EIR certified. As a part of that analysis, a cumulative assessment of the build-out impacts of the planning area was completed. While cumulative impacts to air quality was identified in the South County Area Plan Update EIR as potentially significant and unavoidable, the findings recognized that the existing cumulative air quality mitigation program, combined with a slight improvement over the previous Area Plan build-out would offset some of these impacts.

Each new residence, including the residences that would be built within the proposed project, would be subject to the South County Air Quality Mitigation fee, which is intended to partially mitigate the cumulative effects of new residential development within the South County planning area. This program funds several strategies within the South County to improve air quality and reduce single-occupant vehicles, by: attracting transit ridership through regional bus stop improvements; encouraging carpooling through park-and-ride lot improvements and ridesharing advertising; promoting the use of bicycles through bike lane installation; reducing dust through limited road paving of several unpaved roads; and by providing electronic information/services locally to reduce vehicle trip lengths.

The proposed project would increase the total number of vehicle trips when compared to the General Plan buildout projections. These impacts can be mitigated with standard mitigation measures outlined above; however, the increased residential development in a rural area makes it more difficult for the County to achieve and maintain its air quality goals.

The proposed project is inconsistent with the CAP's land use and planning goals and policies, and long-term regional air quality planning strategies; therefore, the project would significantly contribute to the cumulative degradation of air quality, resulting in a significant, cumulative, air quality impact.

AQ Impact 10 The proposed project is inconsistent with the regional land use and planning policies identified in the Clean Air Plan, resulting in a cumulative, significant, adverse, and unavoidable impact.

Implement AQ/mm-12 and AQ/mm-13.

Residual Impact Implementation of the above measure would reduce operational impacts generated by the proposed project; however, based on the project's inconsistency with the Clean Air Plan, the project would result in an impact considered *significant and unavoidable, Class I*.

b. Greenhouse Gases

Implementation of the proposed project will result in increased production of vehicle related greenhouse gases such as carbon dioxide, methane, and nitrous oxide. The proposed project may also increase the demand for energy, the production of which may result in greenhouse gas emissions. These emissions would cumulatively contribute to global warming.

The state Climate Action Team (CAT) has recommended strategies that could be implemented to reduce GHG emissions. The proposed project could include design features and mitigation measures that would result in lower fuel combustion emissions, water conservation, increased energy efficiency, and other benefits. The CAT strategies relevant to the proposed project and applicable design features or mitigation measures that would be consistent with these strategies are listed in Table V.I.-7 below.

**TABLE V.I.-7
Consistency with Climate Action Team Strategies**

CAT Strategies	Design Features/Mitigation Measures
Vehicle Climate Change Standards	The proposed project would be consistent with this strategy because new vehicles purchased and operated by future project residents would be required to comply with the standards.
Achieve 50% Statewide Recycling Goal	PSU/mm-4 requires the applicant to recycle at least 50 percent of waste generated by project.
Water Use Efficiency	WAT/mm-1 requires preparation and implementation of a Water Conservation Plan WAT/mm-2 requires use of treated effluent for irrigation purposes WAT/mm-3 and -4 identify landscaping water conservation measures WAT/mm-5 and -6 identify operational water conservation measures WAT/mm-7 and -8 require preparation and implementation of a Water Master Plan
Building Energy Efficiency Standards in Place	AQ/mm-12 identifies measures to increase energy efficiency by at least 10 percent above Title 24 requirements
Appliance Energy Efficiency Standards in Place	AQ/mm-11 and -12 identify the use of energy efficient appliances to increase efficiency ratings

Source: California Climate Action Team, 2006

Implementation of the design features and mitigation measures identified in the EIR and listed in Table V.I.-7 would reduce the project’s contribution to GHG emissions; however, as identified in Section V.I.5.d (Consistency with Clean Air Plan), the proposed project would not be consistent with APCD’s transportation and land use planning policies, and would not be consistent with CAT strategy “Smart Land Use and Intelligent Transportation.” Similar to the APCD’s existing policies, the CAT strategy promotes proximity between jobs and housing, transit-oriented development, and high density residential and commercial development along transit corridors. Inconsistencies with this strategy include the following:

- The proposed project is located in a rural area, and commercial and other services are not located in close proximity to the proposed project. As a result, it is expected that vehicle miles resulting from each trip would be more than those made in more urbanized areas.

- The proposed project is located approximately two miles from the nearest transit route, and it is unlikely to create demand for a transit stop within walking distance of proposed residential development.
- The project does not include a mix of residential and commercial development. Residents would generate traffic trips to access necessary services. Residents would be reliant on the automobile for the vast majority of all trips made.

Based on the discussion above, the proposed project would increase the population expected for the region, result in potentially longer trip lengths, and does not incorporate land use or transportation control measures to any significant degree. As a result, the proposed project is considered inconsistent with the “Smart Land Use and Intelligent Transportation” strategy, and would contribute to cumulative quantities of GHC.

Due to the lack of significance thresholds and associated impact determinations, mitigation measures cannot be required for the proposed project; however, implementation of mitigation to reduce long-term operational emissions and to increase energy efficiency are recommended. Several additional CAT strategies could be implemented by the applicant to further reduce the project’s contributions to GHG emissions. These strategies are voluntary, and include the following:

- **High Recycling.** Recovery of recyclable materials beyond the 50 percent goal.
- **Green Buildings Initiative.** Operating the average home (about 2,500 sf) creates about 11 tons of CO₂ annually. This is more than two automobiles. The LEED standard can significantly reduce energy demand, and therefore CO₂ emissions. The CC&Rs can require all new buildings to achieve LEED building standards of at least the Silver level.
- **California Solar Initiative.** Install solar roofs on homes to achieve 100 percent energy production for both electricity and water heating, and maximize winter space heating.