

4.6 AIR QUALITY

This section discusses impacts to local and regional air quality. Both temporary impacts relating to construction of individual projects and long-term impacts associated with development facilitated by the proposed Community Plan are discussed. Potential impacts related to asbestos hazards are discussed in Section 4.12, *Hazards and Hazardous Materials*.

4.6.1 Setting

The 2007 Clean Air Plan (CAP) for Santa Barbara County describes the air quality setting for the County in detail, including the local climate and meteorology, current and projected air quality, and the regulatory framework for the management of air quality. The 2007 CAP is incorporated by reference and is available for review at the Santa Barbara County Air Pollution Control District (SBCAPCD) web site, www.sbcapcd.org. The air quality setting for the region is summarized below.

Local Climate and Meteorology

The project site is within the South Central Coast Air Basin (SCCAB), which includes all of San Luis Obispo, Santa Barbara, and Ventura counties. The climate of the SCCAB is strongly influenced by its proximity to the Pacific Ocean and the location of the semi-permanent high-pressure cell in the northeastern Pacific. With a Mediterranean-type climate, the project area is characterized by warm, dry summers and cool winters with occasional rainy periods.

Cool, humid marine air causes frequent fog and low clouds along the coast, generally during the night and morning hours in the late spring and early summer months. The project area is subject to a diurnal cycle in which daily onshore winds from the west and northwest are replaced by mild offshore breezes flowing from warm inland valleys during night and early morning hours. This alternating cycle can create a situation where suspended pollutants are swept offshore at night, and then carried back onshore the following day. Dispersion of pollutants is further degraded when the wind velocity for both day and nighttime breezes is low.

The heating of inland valleys creates an onshore airflow that is predominantly from the northwest in the Santa Maria Valley and stronger during the summer. This pattern reverses at night, as the land mass cools, and down-valley and offshore nighttime breezes become prevalent. Occasionally stronger winds are produced by “Santa Ana” winds, which are typically hot, dry northerly winds. Wind speeds associated with Santa Ana conditions are generally 15 to 20 miles per hour (mph), but can reach over 60 mph. In general, winds in northern Santa Barbara County (North County) tend to be stronger and more persistent than those in the southern part of the county, and consequently create better mixing and dispersion of air pollutants.

Two types of temperature inversions (warmer air on top of cooler air) are created in the area: subsidence and radiational. The subsidence inversion is a regional effect created by the Pacific high in which air is heated as it is compressed when it flows from the high-pressure area to the low pressure areas inland. This type of inversion generally forms at about 1,000 to 2,000 feet



and can occur throughout the year, but it is most evident during the summer months. Surface inversions are formed by the more rapid cooling of air near the ground during the night, especially during winter. This type of inversion is typically lower (0-500 feet at Vandenberg AFB, for example) and is generally accompanied by stable air. Both types of inversions limit the dispersal of air pollutants within the regional airshed, with the more stable the air (low wind speeds, uniform temperatures), the lower the amount of pollutant dispersion.

Air Pollution Regulation

The federal and state governments have been empowered by the federal and state Clean Air Acts to regulate the emission of airborne pollutants and have established ambient air quality standards for the protection of public health. The United States Environmental Protection Agency (EPA) is the federal agency designated to administer air quality regulation, while the California Air Resources Board (CARB) is the state equivalent in California. Local control in air quality management is provided by the CARB through county-level or regional (multi-county) air pollution control districts (APCDs). The CARB establishes air quality standards and is responsible for control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. The CARB has established 14 air basins statewide. That portion of the South Central Coast Air Basin in Santa Barbara County is within the jurisdiction of the Santa Barbara County APCD (SBCAPCD).

Federal (National Ambient Air Quality Standards or NAAQS) and state standards have been established for ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead, and fine particulates (PM₁₀ and PM_{2.5}). Table 4.6-1 summarizes the current federal and state standards for each of these pollutants. Standards have been set at levels intended to be protective of public health. California standards are more restrictive than federal standards for each of these pollutants except lead and the eight-hour average for CO.

Table 4.6-1 Current Federal and State Ambient Air Quality Standards

Pollutant	Federal Standards	California Standards
Ozone	0.08 ppm (8-hr avg)	0.07 ppm (8-hr avg) 0.09 ppm (1-hr avg)
Carbon Monoxide	9.0 ppm (8-hr avg) 35.0 ppm (1-hr avg)	9.0 ppm (8-hr avg) 20.0 ppm (1-hr avg)
Nitrogen Dioxide	0.053 ppm (annual avg)	0.18 ppm (1-hr avg)
Sulfur Dioxide	0.03 ppm (annual avg) 0.14 ppm (24-hr avg)	0.04 ppm (24-hr avg) 0.25 ppm (1-hr avg)
Lead	1.5 µg/m ³ (calendar qtr)	1.5 µg/m ³ (30-day avg)
Particulate Matter (PM ₁₀)	150 µg/m ³ (24-hr avg)	20 µg/m ³ (annual avg) 50 µg/m ³ (24-hr avg)
Particulate Matter (PM _{2.5})	15 µg/m ³ (annual avg) 35 µg/m ³ (24-hr avg)	12 µg/m ³ (annual avg) --

*ppm = parts per million; µg/m³ = micrograms per cubic meter
 Source: ARB, February 2, 2007.*



Effects of Air Pollution

Air pollution is potentially hazardous to human health, and can diminish the production and quality of many agricultural crops, reduce visibility, degrade soils and materials, and damage vegetation. Human health effects are the key determinant in the establishment of the above listed primary air quality standards. The following provides a summary of the pollutants for which the South Central Coast Air Basin is in non-attainment.

Ozone

Ozone is produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO_x) and reactive organic compounds (ROC). Nitrogen oxides are formed during the combustion of fuels, while reactive organic gases are formed during combustion and evaporation of organic solvents. Because ozone requires sunlight to form, concentrations exceeding state and federal standards occur primarily between the months of May and October. Ozone is a pungent, colorless toxic gas with potential health effects on humans, including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to ozone include children, the elderly, persons with respiratory disorders, and people who exercise strenuously outdoors.

Suspended Particulates

Particulate matter refers to small, airborne particles that can be inhaled by humans and other animals. The two categories of particulate matter of greatest concern are PM₁₀ and PM_{2.5}. PM₁₀ is small particulate matter measuring no more than 10 microns in diameter, while PM_{2.5} is fine particulate matter measuring no more than 2.5 microns in diameter. Suspended particulates are mostly dust particles, nitrates, and sulfates, and are a by-product of fuel combustion and wind erosion of soil and unpaved roads. Suspended particulates are also created in the atmosphere through chemical reactions. The characteristics, sources, and potential health effects associated with PM₁₀ and PM_{2.5} can be very different. PM₁₀ generally comes from windblown dust, dust kicked up from mobile sources, and dust created by crushing, grinding, or abrading surfaces during grading operations or other means by which large particles are broken into smaller ones. PM_{2.5} is generally associated with combustion processes and motor vehicle exhaust, especially from diesel engines. It can also be formed in the atmosphere as a secondary pollutant through chemical reactions.

According to recent community epidemiological studies, adverse health effects associated with both short-term and long-term exposure to fine particles include increased premature deaths, primarily in the elderly and those with heart or lung disease; aggravation of respiratory and cardiovascular illness, leading to increased hospital visits; lung function problems and symptoms similar to chronic bronchitis especially in children and asthmatics; increased work and school absences, and alteration in lung tissue structure and respiratory tract defense mechanisms.



Global Climate Change

Global climate change (GCC) is a change in the average weather of the earth that is measured by temperature, wind patterns, precipitation, and storms over a long period of time. The baseline by which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed an acceleration in the rate of warming during the past 150 years.

GCC is a documented effect, with the degree to which the change is caused by anthropogenic (man-made) sources under study. The increase in warming has coincided with the global Industrial Revolution, which has seen the widespread reduction of forests to accommodate urban centers and agriculture and the use of fossil fuels, primarily burning of coal, oil, and natural gas for energy. Per the United Nations Intergovernmental Panel on Climate Change (IPCC, 2007), the understanding of anthropogenic warming and cooling influences on climate has led to a very high confidence (90% or greater chance) that the global average net effect of human activities since 1750 has been one of warming. Most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gases (GHG) concentrations per the IPCC (November 2007). While there is some disagreement by individual scientists¹ with some of the findings of the IPCC, the overwhelming majority of scientists working on climate change agree with the main conclusions, as do the vast majority of major scientific societies and national academies of science. Disagreement within the scientific community is always present for all issues, however, the current state of knowledge is substantially in favor of GCC warming, with eleven of the last twelve years (1995-2006) ranking among the twelve warmest years in the instrumental record of global surface temperature since 1850 (IPCC, 2007). In addition, the majority of scientists agree that anthropogenic sources are a main, if not primary, contributor to the GCC warming.

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG), analogous to the way in which a greenhouse retains heat. Common GHG include water vapor, carbon dioxide, methane, nitrous oxides, fluorinated gases, and ozone. GHG are emitted by both natural processes and human activities. The accumulation of GHG in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHG, the earth's surface would be about 34° C cooler (CAT, 2006). However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. Concentrations of carbon dioxide in the atmosphere have risen approximately 35% since the Industrial Revolution. Per the IPCC (2007), the global atmospheric concentration of carbon dioxide has increased from a pre-industrial value of about

¹ A list of such scientists can be found at http://en.wikipedia.org/wiki/List_of_scientists_opposing_the_mainstream_scientific_assessment_of_global_warming



280 parts per million (ppm) to 379 ppm in 2005. The atmospheric concentration of carbon dioxide in 2005 exceeds by far the natural range over the last 650,000 years (180 to 300 ppm) as determined from ice cores. The annual carbon dioxide concentration growth rate was larger during the last 10 years (1995–2005 average: 1.9 ppm per year), than it has been since the beginning of continuous direct atmospheric measurements (1960–2005 average: 1.4 ppm per year) although there is year-to-year variability in growth rates.

Greenhouse Gas Inventory - State of California. California is a substantial contributor of global GHGs as it is the second largest contributor in the United States and the sixteenth largest in the world. Based upon the 2004 GHG inventory data (the latest year available) compiled by the California Energy Commission (CEC, December 2006), California produced 492 million metric tons of carbon dioxide equivalent (CDE²). The major source of GHG in California is transportation, contributing 41% of the state's total GHG emissions. Electricity generation is the second largest source, contributing 22% of the state's GHG emissions (CEC, December 2006). Most, 81%, of California's 2004 GHG emissions (in terms of CDE) were carbon dioxide produced from fossil fuel combustion, with 2.8% from other sources of CO₂, 5.7% from methane, and 6.8% from nitrous oxide (CEC, December 2006).

Potential Effects of Global Climate Change

GCC has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of about 0.2°C (0.36°F) per decade is projected, and there are identifiable signs that global warming could be taking place, including substantial ice loss in the Arctic (IPCC, 2007).

According to the ARB, potential impacts in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (ARB 2006c, 2007c). Below is a summary of some of the potential effects reported by an array of studies that could be experienced in California as a result of global warming and climate change. These studies incorporate the latest and most definitive science regarding global climate change and help form the basis of and rationale for measures identified to reduce GHG emissions and the associated impact on climate change.

Air Quality. Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions

² Carbon dioxide equivalent (CDE or CO₂E) is a quantity that describes, for a given mixture and amount of GHGs, the amount of CO₂ (usually in metric tons; million metric tons = MMTCO₂E) that would have the same global warming potential (GWP) when measured over a specified timescale (generally, 100 years).



and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (CEC, February 2006).

Water Supply. Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. Studies have found that, “considerable uncertainty about precise impacts of climate change on California hydrology and water resources will remain, until we have more precise and consistent information about how precipitation patterns, timing, and intensity will change” (Climate Change and California Water Resources). For example, some studies identify little change in total annual precipitation in projections for California (California Climate Change Center, 2006). Other studies show significantly more precipitation (Climate Change and California Water Resources [(DWR 2006)]). Even assuming that climate change leads to long-term increases in precipitation, analysis of the impact of climate change is further complicated by the fact that no studies have identified or quantified the runoff impacts that such an increase in precipitation would have in particular watersheds (California Climate Change Center, 2006). Also, little is known about how groundwater recharge and water quality will be affected (Id.). Higher rainfall could lead to greater groundwater recharge, although reductions in spring runoff and higher evapotranspiration could reduce the amount of water available for recharge (Ibid.).

The California Department of Water Resources (DWR 2006) report on climate change and effects on the State Water Project (SWP), the Central Valley Project, and the Sacramento-San Joaquin Delta concludes that “[c]limate change will likely have a significant effect on California’s future water resources . . . [and] future water demand.” DWR also reports that “much uncertainty about future water demand [remains], especially [for] those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain” (DWR, 2006).

This uncertainty serves to complicate the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood (DWR, 2006). DWR adds that “[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future.” Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows (Kiparsky 2003; DWR 2005; Cayan 2006, Cayan, D., et al, 2006).

Hydrology. As discussed above, climate changes could potentially affect: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise may be a product of global warming through two main processes: expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California’s water supply. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.



Agriculture. California has a \$30 billion agricultural industry that produces half of the country's fruits and vegetables. Higher CO₂ levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thus affect their quality (CCCC, 2006).

Ecosystems and Wildlife. Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists expect that the average global surface temperature could rise as discussed previously: 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and 2.2-10°F (1.4-5.8°C) in the next century, with substantial regional variation (EPA 2000). Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Sea level could rise as much as two feet along most of the U.S. coast. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes, such as carbon cycling and storage (Parmesan, 2004; Parmesan, C. and H. Galbraith 2004.)

Sensitive Receptors

Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14; the elderly over 65; persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases. Sensitive receptors include residences, schools, daycare centers, playgrounds or medical facilities.

Current Ambient Air Quality

The SBCAPCD is required to monitor air pollutant levels to assure that the air quality standards are met, and if they are not met, to develop strategies to meet the standards. A network of 17 monitoring stations measures air pollutant levels throughout the County. Some pollutants, such as ozone, are measured continuously, other pollutants are sampled periodically. The stations fall into two main categories: (1) state and local air monitoring stations (SLAMS) and (2) Prevention of Significant Deterioration (PSD) stations. The seven SLAMS, five of which are operated by the SBCAPCD and two of which are operated by the CARB, measure urban and regional air quality. The 13 PSD stations are used to determine the impacts of specific operations, such as large oil and gas facilities.

Depending on whether or not air quality standards are met or exceeded, an air basin is classified as being in "attainment" or as "nonattainment." SBCAPCD has recently been designated as an attainment area for the federal 1-hour and 8-hour ozone NAAQS. The County is in attainment for the one-hour state ozone standard. The state adopted a new 8-hour ozone standard that went into effect in 2006. The County does not meet the state eight-hour ozone standard. Based on historical air quality trends and onshore emission reductions, the strategies



for attainment of the federal 8-hour ozone standard proposed in the 2007 Clean Air Plan should also expedite attainment of the new state 8-hour ozone standard. In addition, portions of the County violate the state PM₁₀ 24-hour and annual standards. The County is therefore currently designated a non-attainment area for the state PM₁₀ standard. Currently, not enough data exists to determine the County's attainment status for either the federal or state PM_{2.5} standard. Table 4.6-2 summarizes the annual air quality data for the local airshed over the past three years from the closest stations.

As indicated in the table below, several violations of the state standards for ozone and PM₁₀ occurred from 2004 to 2006. Ozone is a secondary pollutant that is not produced directly by a source, but rather it is formed by a reaction between nitrogen oxides (NO_x) and reactive organic gases (ROG) in the presence of sunlight. Reductions in ozone concentrations are dependent on reducing the amount of these precursors. The major sources of ozone precursor emissions in Santa Barbara County are motor vehicles, the petroleum industry, and solvent usage (paint, consumer products, and certain industrial processes). The major sources of PM₁₀ in the County are mineral quarries, grading, demolition, agricultural tilling, road dust, and vehicle exhaust.

Table 4.6-2 Ambient Air Quality at the Local Monitoring Stations*

Pollutant	2004	2005	2006
Santa Ynez Monitoring Station¹			
Ozone (ppm), Worst Hour	0.90	0.91	0.77
Number of days of State exceedances (>0.09 ppm)	0	0	0
Ozone (ppm), 8-hr average	0.83	0.76	0.68
Number of days of State exceedances (>0.07 ppm)	2	1	0
Number of days of Federal exceedances (>0.08 ppm)	0	0	0
Lompoc Monitoring Station²			
Ozone (ppm), Worst Hour	0.84	0.64	0.56
Number of days of State exceedances (>0.09 ppm)	0	0	0
Ozone (ppm), 8-hr average	0.75	0.52	0.54
Number of days of State exceedances (>0.07 ppm)	1	0	0
Number of days of Federal exceedances (>0.08 ppm)	0	0	0
Particulate Matter <10 microns, µg/m ³ , Worst 24 Hours	52.3	86.6	26.8
Number of days above State standard (>50 µg/m ³)	1	1	0
Number of days above Federal standard (>150 µg/m ³)	0	0	0
Santa Maria Monitoring Station			
Ozone (ppm), Worst Hour	0.074	0.063	0.064
Number of days of State exceedances (>0.09 ppm)	0	0	0
Ozone (ppm), 8-hr average	0.064	0.061	0.062
Number of days of State exceedances (>0.07 ppm)	0	0	0
Number of days of Federal exceedances (>0.08 ppm)	0	0	0
Particulate Matter <10 microns, µg/m ³ , Worst 24 Hours	52.0	43.0	35.0
Number of days above State standard (>50 µg/m ³)	1	0	0
Number of days above Federal standard (>150 µg/m ³)	0	0	0
Particulate Matter <2.5 microns, µg/m ³ , Worst 24 Hours	16.6	29.8	12.7
Number of days above Federal standard (>65 µg/m ³)	0	0	0

Source: ARB Top Four Summary available at www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start

* PM₁₀ and PM_{2.5} are not measured at the Santa Ynez monitoring station, and PM_{2.5} is not measured at the Lompoc monitoring station.



Air Quality Regulation and Planning

The 2001 Santa Barbara County CAP addresses state and federal Clean Air Act mandates, including all federal planning requirements for “maintenance” areas. The 2001 CAP demonstrates that the County will continue to attain the federal ozone standard through 2015. The 2004 Clean Air Plan update demonstrates progress towards meeting the state one-hour ozone standard. The update does not affect the 2001 CAP, which remains in effect for federal requirements. The USEPA has approved the 1-hour ozone maintenance plan and motor vehicle emissions budgets in the 2001 CAP as revisions to the Santa Barbara portion of the California State Implementation Plan (SIP). The APCD Board adopted the 2007 CAP in August 2007. This 2007 Plan is similar to the 2004 Clean Air Plan but includes significant new information. Some new key elements include:

- *Updated local air quality information (through 2006)*
- *An updated baseline emission inventory (year 2002)*
- *An updated baseline emission estimate of marine shipping emissions (year 2002)*
- *Updated future year emission estimates through 2020*

Global Climate Change Regulation and Planning

Regulatory Context – State of California. In the fall of 2006, Governor Schwarzenegger signed AB 32, the “Global Warming Solutions Act of 2006,” into law. AB 32 requires the California Air Resources Board (CARB) to adopt regulations by January 1, 2008 to require reporting and verification of statewide GHG emissions. While this did not occur by January 2008, a Climate Change Scoping Plan was approved by CARB in December 2008. The scoping plan indicates how emission reductions will be achieved from significant GHG sources via regulations, market mechanisms, and other actions. In addition, AB 32 requires CARB to adopt regulations by January 1, 2010, to implement the early action GHG emission reduction measures that can be implemented before the adoption of those recommended by the 2009 plan. The bill requires achievement by 2020 of a statewide GHG emissions limit equivalent to 1990 emissions (essentially a 25% reduction below 2005 emission levels), and the adoption of rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions.

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. This bill directs the California Office of Planning and Research to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, by July 1, 2009. The Resources Agency is required to certify or adopt those guidelines by January 1, 2010.

Senate Bill (SB) 375, signed in August 2008, requires the inclusion of sustainable communities strategies (SCS) in regional transportation plans (RTPs) for the purpose of reducing greenhouse gas (GHG) emissions. The bill requires the California Air Resources Board (ARB) to appoint a Regional Targets Advisory Committee by January 31, 2009 and requires this committee to recommend factors to be considered and methodologies to be used for setting GHG reduction targets by December 31, 2009.



Executive Order S-01-07. Executive Order S-01-07 was enacted by Governor Schwarzenegger on January 18, 2007. The order mandates that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In addition, a Low Carbon Fuel Standard ("LCFS") for transportation fuels is to be established for California.

4.6.2 Impact Analysis

Methodology and Significance Thresholds

The analysis of air quality impacts follows the guidance provided in the SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents (July 2007)* and the Santa Barbara County *Environmental Thresholds and Guidelines Manual (2006)*. Pollutant emissions associated with temporary construction activity, vehicle trips and area source emission estimates were quantified using the URBEMIS 2007 v.9.2.2 computer model developed by the California Air Resources Board. Construction emissions were calculated for the estimated worst-case day over the construction period. Trip generation rates used to estimate long-term emissions were from data in the traffic analysis performed by Associated Transportation Engineers (see Section 4.2, *Transportation/Circulation*).

According to the Santa Barbara County APCD (July 2007), a project would have a significant air quality effect on the environment if operation of the project would:

- *Emit (from all project sources, both stationary and mobile) more than the daily trigger for offsets or Air Quality Impact Analysis set in the APCD New Source Review Rule, for any pollutant*
- *Emit 25 pounds per day or more of NO_x or ROC from motor vehicle trips only*
- *Cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone)*
- *Exceed the APCD health risk public notification thresholds adopted by the APCD Board for non-cancer risk*
- *Be inconsistent with the latest adopted federal and state air quality plans for Santa Barbara County.*
- *Expose new or existing receptors to objectionable odors.*

In addition, the County of Santa Barbara *Environmental Thresholds and Guidelines Manual (2006)* states that a significant adverse air quality impact may occur when air pollutant emissions associated with a project, individually or cumulatively:

- *Interferes with progress toward the attainment of the ozone standard by releasing emissions which equal or exceed the established long-term quantitative thresholds for NO_x and ROC; or*
- *Equals or exceeds the state or federal ambient air quality standards for any criteria pollutant (as determined by modeling).*



The Environmental Thresholds and Guidelines Manual also states that for operational emissions, a proposed project will *not* have a significant air quality effect on the environment, if operation of the project will:

- *Emit (from all project sources³, mobile and stationary), less than the daily trigger⁴ for offsets set in the APCD New Source Review Rule, for any pollutant; and*
- *Emit less than 25 pounds per day of oxides of nitrogen (NO_x) or reactive organic compounds (ROC) from motor vehicle trips only; and*
- *Not cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone); and*
- *Not exceed the APCD health risk public notification threshold adopted by the APCD Board; and*
- *Be consistent with the adopted federal and state Air Quality Plans.*

Although the SBCAPCD has not adopted quantitative thresholds of significance for temporary construction emissions, the SBCAPCD and the County's *Environmental Thresholds Manual* recommend quantification of construction-related NO_x, ROC, PM₁₀, and PM_{2.5} emissions. In addition, since the County is a nonattainment area for the State PM₁₀ standard, construction mitigation measures are required for all projects involving earthmoving activities regardless of size or duration. According to the SBCAPCD, implementation of required measures reduces fugitive dust emissions to a less than significant level (SBCAPCD, July 2007).

The Santa Barbara County Environmental Thresholds and Guidelines Manual also requires an analysis, if applicable, of the potential for a proposed project to either cause or subject a considerable number of people to odors or other air quality nuisance problems. A public nuisance is defined by Santa Barbara County APCD Rule 303 as "...such quantities of air contaminants or other material in violation of Section 41700 of the Health and Safety Code which may cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or of any such persons or to the public, or which cause, or have a natural tendency to cause injury or damage to business or property." The analysis may include projects that have the potential to cause odors, or projects that may subject potential sensitive receptors to nearby existing or proposed land uses that emit objectionable odors. Certain projects have the potential to cause significant odor impacts because of the nature of their operation and their location. These include fast food restaurants, bakeries, coffee roasting facilities, etc. Other projects may be new developments (e.g., residential areas or sensitive receptors), which have the potential to be affected by being located downwind of existing sources of odor. In addition, although the SBCAPCD has not adopted quantitative thresholds of significance for odor impacts, the SBCAPCD recommends the development of an Odor Abatement Plan (OAP) for projects that may generate nuisance odors that may affect a substantial number of people.

³ *Portable equipment registered under the California Air Resources Board Statewide Portable Equipment Registration Program (PERP) shall not be included a proposed project's emission total. Emissions from these sources are in compliance with the ARB PERP program, and are exempt from APCD permits.*

⁴ *Where projects exceed the offset trigger, the significant effect shall be considered mitigable to insignificance where APCD rules require offsets and net emissions after offsets are less than the trigger for offsets.*



Global Climate Change Methodology

The global climate change analysis provided in this EIR is in response to AB 32, the California Global Warming Solutions Act of 2006, and Executive Order S-03-05. The topic of Global Climate Change has not historically been addressed in EIRs, and guidance is not currently provided in either CEQA or the State CEQA Guidelines regarding this topic. In addition, it is not included in the Environmental Checklist Form provided in Appendix G of the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.)

The Office of Planning and Research (OPR) is directed under Senate Bill 97, to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions through CEQA by July 1, 2009. In the interim, draft CEQA Guidelines revisions have been circulated by OPR, but these do not specify specific significance thresholds and provide only generic guidance at this time. Hence, no adopted thresholds are available at this time. As there are no adopted thresholds, this analysis conforms closely to the methodologies recommended in the *White Paper on Global Climate Change* (AEP, 2007), that of the California Air Pollution Control Officers Association [CAPCOA] (January 2008), and recommended in the Governor's Office of Planning and Research's Technical Advisory on CEQA and Climate Change (June 2008). Where appropriate, mitigation measures proposed include a reference to the specific CAPCOA- or OPR Technical Advisory-suggested measure.

Indirect Emissions. Operational emissions of CO₂ associated with space heating and cooling, as well as landscape maintenance were quantified using the California Air Resource Board's URBEMIS 2007 (version 9.2.2) computer model.

Direct Emissions from Mobile Combustion. Emissions of CO₂ from transportation sources were quantified using the California Air Resource Board's URBEMIS 2007 (version 9.2.2) computer model.

It should be noted that one of the limitations to a quantitative analysis is that emission models such as URBEMIS evaluate aggregate emissions and do not demonstrate, with respect to a global impact, how much of these emissions are "new" emissions specifically attributable to the proposed project in question. For most projects, the main contribution of GHG emissions is from motor vehicles and the total vehicle miles traveled (VMT), but the quantity of these emissions appropriately characterized as "new" is uncertain. With respect to a retail project for example, traffic to the store can be comprised of diverted trips from other retail stores (and depending on location, either result in an increase or decrease in VMT), pass-by trips (where the store is en route to another primary location), or an additional, fully new trip associated with consumer choice to travel to the store in addition to other retail stores. In the absence of information regarding the different types of trips, the VMT generated by URBEMIS is used as a reasonable and conservative estimate.

Project Impacts and Mitigation Measures

The impact analysis evaluates both programmatic impacts associated with Plan as well as project-level impacts of the development of the Affordable Housing Overlay District (AHOD) sites. Programmatic impacts include buildout of the Plan area, proposed land use and zoning



changes, policy changes, and programs proposed as part of the Santa Ynez Valley Community Plan. Project-specific analysis would still be needed for any individual future projects proposed under the amended programs or policies. In addition, for the AHOD sites, potential site-specific impacts and mitigation measures are described and evaluated. The project level analysis for the AHOD sites is intended to serve as the project environmental review for possible future projects on these sites, therefore additional environmental review of any future development proposal on an AHOD site would not be required as long as the proposal is consistent with applicable Code requirements and restrictions.

Impact AQ-1 Clean Air Plan Consistency

The 2007 CAP goal is to reduce ozone precursor emissions from a wide variety of stationary and mobile sources. The 2007 CAP focuses on the state 1-hour ozone standard and the associated planning requirements mandated by the 1988 California Clean Air Act. Per Santa Barbara County thresholds, a project would have a significant impact if it were inconsistent with the adopted federal and state air quality plans of Santa Barbara County. The SBCAPCD further describes consistency with the CAP as meaning that a project’s direct and indirect emissions are accounted for in the growth assumptions of the CAP and that a project is consistent with the policies in the CAP (Scope and Content of Air Quality Sections in Environmental Documents, 2007). The 2007 CAP is based on growth projections contained in the 2002 SBCAG Regional Growth Forecast, which utilized a number of assumptions regarding land development patterns to obtain future forecasts. These population projections are shown in Tables 4.6-3 and 4.6-4.

Table 4.6-3 CAP Countywide Population Projections

Year	Population
2010	462,000
2015	488,000
2020	505,000

Source: Clean Air Plan 2007; Based on SBCAG Regional Growth Forecast, 2002

Table 4.6-4 SBCAG Countywide Population Forecast

Year	Population
2005	417,500
2010	430,200
2015	444,900
2020	459,600
2025	473,400
2030	481,400
2035	487,000
2040	492,800

Source: SBCAG Regional Growth Forecast, 2007

As shown above, SBCAG’s most recent Regional Growth Forecast (2007) forecasts a smaller population growth rate than the previous 2002 Forecast, upon which the 2007 Clean Air Plan



was based. It can be assumed that the next revision to the CAP will reflect the more updated population forecast figures, as shown in Table 4.6-4. In addition, SBCAG population projections were used to assess the proposed Plan's 20-year buildout impacts because the 2007 CAP only projected future population through the year 2020, while the SBCAG forecasted population growth over the next 30 years.

Programmatic Impacts of the Plan

Plan Buildout and Rezones

The County currently has a population of approximately 424,425 (Department of Finance, January 2007). To determine whether the County is currently consistent with the CAP, the County's current 2007 population should be compared to the SBCAG's most recent population projections for that same year. However, no specific data from the 2007 Regional Growth Forecast was available for the year 2007, the most recent population figure in the SBCAG Regional Growth Forecast was from 2005, which totaled 417,500 persons. The difference between the forecasted amount for 2010 and 2005 was taken (430,200-417,500), and divided by the span of five years to get an average increase in persons per year (12,700/5). This average (2,540 persons per year) was multiplied by two years (2007-2005) and added to the 2005 population in order to estimate the projected population for 2007 (417,500+5,080). Using this method, the SBCAG projections for the year 2007 would be approximately 422,580 persons. The current population of 424,425 exceeds the SBCAGs forecasted population for 2007; therefore, the County is currently inconsistent with the population anticipated in the most recent CAP.

As discussed above, the 2007 CAP calculations are based on the Santa Barbara County Association of Governments' (SBCAG) 2007 Regional Growth Forecast. However, neither of these plans provide population statistics for growth within the Plan Area specifically, as they are countywide documents. Since the CAP and SBCAG population forecasts are based on buildout assumptions under current land use and zoning designations, found in the County's existing Comprehensive Plan, the SYVCP's consistency with CAP population projections can be assessed by whether or not the population anticipated under the proposed SYVCP exceeds the population anticipated under the existing Comprehensive Plan. Development under the proposed Community Plan is estimated to generate a twenty-year buildout total of 936 additional primary and secondary residential units in the Plan Area (including development under the Affordable Housing Overlay). Based on the County's average household size of 2.8 persons per dwelling unit (SBCAG Regional Growth Forecast, 2007), twenty year buildout under the proposed Plan would result in 2,621 new residents by 2030. Based on historical growth data, twenty-year buildout conditions under the existing Comprehensive Plan, would total approximately 1,988 new persons (County of Santa Barbara, 2007). Twenty year buildout under the proposed Plan Area would be 633 more persons than under the existing Comprehensive Plan, and therefore would exceed the population that has been incorporated into the CAP's buildout assumptions for the Plan Area.

Vehicle use and emissions are directly related to population (more people means more vehicle use). Populations that remain within CAP and SBCAG forecasts are accounted for with regards to APCD emissions inventories. When population growth exceeds these forecasts, emission inventories could be surpassed, affecting attainment status. However, the proposed Plan



contains several trip-reduction strategies that are not included in the existing Comprehensive Plan, such as mixed-use development, the AHOD site developments, and direction of this growth into the urban portions of the Plan Area which are consistent with County, CAP, and SB 375 goals for reducing sprawl and directing new housing in areas in close proximity to transit and other alternative transportation modes are available. While the Plan Area population increase under the proposed Plan would be slightly greater than under the existing Comprehensive Plan, and hence is inconsistent with the current CAP, the changes in land use and zoning in the Plan would be included in the next CAP update (2010). Trip reduction measures would help reduce potential air quality impacts, however impacts related to CAP consistency would temporarily remain Class I, *significant and unavoidable*.

Mixed Use Overlay

Development under the proposed Mixed Use Overlay would yield up to 137 residential units in twenty years. Based on a population estimate of 2.8 persons/household (SBCAG Regional Growth Forecast, 2007), 137 units would contribute to an estimated population increase of 390 persons. Although this is a small percentage of the overall population forecasted by the CAP and by SBCAG for the next twenty years, the intensification of uses proposed at this site was not accounted for in previous plans, and therefore development of any additional units on this site would be considered inconsistent with the CAP and may have a significant impact on air quality. Mixed-use development, by design would generate fewer trips than the same amount of residential and commercial development occurring separate from each other. While the population increase under the proposed Mixed use Overlay would be slightly greater than under the existing Comprehensive Plan, and hence is inconsistent with the current CAP, the changes in land use and zoning in the Plan would be included in the next CAP update (2010). Trip reduction measures would help reduce potential air quality impacts, however impacts related to CAP consistency would temporarily remain Class I, *significant and unavoidable*.

Design Control Overlay

The proposed expansion of the Design Control Overlay Zone would increase the role of the CBAR in review of developments along scenic view corridors, but would not accommodate new residential development that could not otherwise occur under the existing Zoning Ordinance. The program would not in itself generate additional population, therefore, the program is not anticipated to induce substantial population growth that would be considered inconsistent with the CAP, and *no impacts* would result.

Heritage Sites Overlay

The proposed application of the Heritage Sites Overlay would increase the role of the Valley Plan Advisory Committee (VPAC) or similar local advisory board in the review of proposed land subdivisions within the HS Overlay, and would not accommodate new residential development that could not otherwise occur under the existing Zoning Ordinance. The program would not in itself generate additional population, therefore, the program is not anticipated to induce substantial population growth that would be considered inconsistent with the CAP, and *no impacts* would result.



Other Applicable Community Plan Policies, Programs, and Standards

No other Community Plan policies, programs or standards would generate development that would result in additional population than what is accounted for in the CAP. However, the Plan does propose policies that are mitigative in nature that would help promote alternative modes of transportation and reduce vehicle emissions. These policies would have a Class IV, *potentially beneficial* impact, and are listed in the programmatic mitigation measures section below.

Impacts Related to Development of AHOD Sites

Population generation under the 20-year buildout scenario is discussed above in *Plan Buildout and Rezones*. The 20-year buildout discussion includes the housing that could be produced through the development of the AHOD sites. For informational purposes, the population generated by the development of each of these AHOD sites is also discussed below.

Impact AQ-1(A) Clean Air Plan Consistency: Site A

Development of this 2.27-acre site at a density of 20 units/acre would yield up to 45 residential units. Based on the County's average household size of 2.76 persons per dwelling unit (California Department of Finance, 2007), 45 units would contribute to an estimated population increase of up to 125 persons. Although this is a small percentage of the overall population forecasted by the CAP and by SBCAG for the next twenty years, the intensification of uses proposed at this site was not accounted for in previous plans, and therefore development of any additional units on this site would be considered inconsistent with the CAP and may have a significant impact on air quality, as noted above in the discussion of Plan Buildout. However, future development on this site would be considered infill and therefore would not result in an increase of the percentage of vehicle miles traveled to population. In addition, this site has existing commercial development, therefore the net change in vehicle trips, and hence air pollutant emissions, would not be significant and may be negligible or an improvement over baseline emissions. As a result, impacts related to CAP consistency would be Class III, *less than significant*.

Impact AQ-1(B) Clean Air Plan Consistency: Site B

Development of this 1.04-acre site at a density of 20 units/acre would yield up to 20 residential units. Based on the County's average household size of 2.76 persons per dwelling unit (California Department of Finance, 2007), 20 units would contribute to an estimated population increase of up to 56 persons. Although this is a small percentage of the overall population forecasted by the CAP and by SBCAG for the next twenty years, the intensification of uses proposed at this site was not accounted for in previous plans, and therefore development of any additional units on this site would be considered inconsistent with the CAP and may have a significant impact on air quality, as noted above in the discussion of Plan Buildout. However, future development on this site would be considered infill and therefore would not result in an increase of the percentage of vehicle miles traveled to population. In addition, this site has existing commercial development, therefore the net change in vehicle trips, and hence air pollutant emissions, would not be significant and may be negligible or an improvement over



baseline emissions. As a result, impacts related to CAP consistency would be Class III, *less than significant*.

Impact AQ-1(C) Clean Air Plan Consistency: Site C

Development of this 2.06-acre site at a density of 12 units/acre would yield up to 24 residential units. Future development on this site would be considered infill and therefore would not result in an increase of the percentage of vehicle miles traveled to population. Based on the County's average household size of 2.76 persons per dwelling unit (California Department of Finance, 2007), 24 units would contribute to an estimated population increase of up to 67 persons. Although this is a small percentage of the overall population forecasted by the CAP and by SBCAG for the next twenty years, the intensification of uses proposed at this site was not accounted for in previous plans, and therefore development of any additional units on this site would be considered inconsistent with the CAP. While buildout of AHOD Site C would result in a population increase that would be slightly greater than under the existing Comprehensive Plan, and hence is inconsistent with the current CAP, the changes in land use and zoning in the Plan would be included in the next CAP update (2010). Trip reduction measures would help reduce potential air quality impacts, however impacts related to CAP consistency would temporarily remain Class I, *significant and unavoidable*.

Impact AQ-1(D) Clean Air Plan Consistency: Site D

Development of this 2.2-acre site at a density of 12 units/acre would yield up to 26 residential units. Future development on this site would be considered infill and therefore would not result in an increase of the percentage of vehicle miles traveled to population. Based on the County's average household size of 2.76 persons per dwelling unit (California Department of Finance, 2007), 26 units would contribute to an estimated population increase of up to 72 persons. Although this is a small percentage of the overall population forecasted by the CAP and by SBCAG for the next twenty years, the intensification of uses proposed at this site was not accounted for in previous plans, and therefore development of any additional units on this site would be considered inconsistent with the CAP. While buildout of AHOD Site D would result in a population increase that would be slightly greater than under the existing Comprehensive Plan, and hence is inconsistent with the current CAP, the changes in land use and zoning in the Plan would be included in the next CAP update (2010). Trip reduction measures would help reduce potential air quality impacts, however, impacts related to CAP consistency would temporarily remain Class I, *significant and unavoidable*.

Mitigation Measures

Programmatic Mitigation

No mitigation measures would fully reduce this impact caused by populations that would temporarily exceed CAP projections. However, the Plan proposes several policies that would potentially help reduce vehicle emissions:

Policy LUG-SYV-3: The urban boundary line surrounding the townships of Santa Ynez, Los Olivos and Ballard shall distinguish principally urban land uses from rural and/or



agricultural uses. These boundaries shall represent the maximum extent of urban area in the Santa Ynez Valley. These boundaries shall not be moved except as part of a County-initiated update of the Plan.

Policy LUT-SYV-2.1: In order to provide community cohesiveness, new neighborhoods should be designed to provide circulation, pedestrian, bicycle and public transportation linkage to existing neighborhoods, schools, parks, and commercial areas.

Policy CIRC-SYV-5: The County shall encourage development of all feasible forms of alternative transportation in the Santa Ynez Valley Community Plan Area.

Action CIRC-SYV-5.1: The County shall work with SBCAG, the cities of Solvang and Buellton, and local transit providers to improve transit service in the Santa Ynez Valley.

Action CIRC-SYV-5.2: The County shall coordinate with Caltrans to incorporate park-and-ride facilities (including bike lockers, transit stops and benches) near planned highway interchange improvement projects.

Policy CIRC-SYV-6: The County shall encourage Caltrans to accommodate planned bicycle facilities in the design and construction of new highway overpasses and/or widening of existing highways and overpasses.

Action CIRC-SYV-6.2: When updating the Bike Master Plan, the County shall work with Caltrans and Public Works to improve safety on the areas highways and roadways for recreational as well as commuter bicyclists.

Action CIRC-SYV-6.3: The County shall focus attention on improving bikeways within the townships near schools and recreation areas, and consider the safety and feasibility of extending a Class II bike lane on Highway 246 east of the Santa Ynez Valley High School.

The following mitigation measure would also reduce vehicle emissions to the extent feasible:

AQ-1.1 Trip Reduction Measures. To reduce overall trip generation and associated air contaminant emissions, future commercial tenants requiring more than fifty employees will be required to establish and maintain employee trip reduction programs that should consider the following elements:

- Install bicycle racks and/or bicycle lockers at a ratio of 1 bicycle parking space for every 10 car parking spaces for customers and employees, or at a ratio otherwise acceptable the SBCAPCD to be determined prior to occupancy clearance;
- Post carpool, vanpool and transit information in employee break/lunch areas;
- Employ or appoint an Employee Transportation Coordinator;
- Implement a Transportation Choices Program. Project applicants should work with the Transportation Choices Coalition partners for free consulting services on how to start and maintain a program. Contact Traffic Solutions;
- Provide for shuttle/mini bus service;



- Provide incentives to employees to carpool/vanpool, take public transportation, telecommute, walk, bike, etc.;
- Implement compressed work schedules;
- Implement telecommuting program;
- Implement a lunchtime shuttle to reduce single occupant vehicle trips;
- Include teleconferencing capabilities, such as web cams or satellite linkage, which will allow employees to attend meetings remotely without requiring them to travel out of the area;
- Provide on-site eating, refrigeration and food vending facilities to reduce employee lunchtime trips;
- Provide preferential carpool and vanpool parking spaces; and
- Provide shower and locker facilities to encourage employees to bike and/or walk to work (typically one shower and three lockers per every 25 employees).
- Provide off-site improvements to offset contaminant emissions, including: retrofitting existing homes and businesses with energy-efficient devices, replacing transit or school buses, contributing to alternative fueling infrastructure, and/or improving park and ride lots.

The specific components of a trip reduction program that will be required for a particular commercial development will be at the discretion of the Planning and Building Department, based on the recommendations of the APCD.

Plan Requirements and Timing. Future commercial developers under the Santa Ynez Valley Community Plan shall incorporate the listed provisions into development plans or shall submit proof of infeasibility prior to initiation of construction. **Monitoring.** The Planning and Building Department shall site inspect to ensure development is in accordance with approved plans prior to occupancy clearance. Planning and Building staff shall verify installation in accordance with approved building plans.

Mitigation Related to Development of AHOD Sites

Mitigation Measure AQ-1.1 would apply to AHOD Sites C-D. However, no mitigation measures would fully mitigate this impact caused by populations that would temporarily exceed CAP projections.

Significance After Mitigation: Programmatic Impacts of the Plan

The above policies and mitigation measure would reduce vehicle emissions to the extent feasible. However, no mitigation measures would achieve CAP consistency; therefore impacts would temporarily remain Class I, *significant and unavoidable*.



Significance After Mitigation: *Impacts Related to Development of AHOD Sites*

The above policies and mitigation measure would reduce vehicle emissions to the extent feasible for AHOD Sites C and D. However, no mitigation measures would achieve CAP consistency, therefore impacts remain Class I, *significant and unavoidable*.

Impact AQ-2 Odor Nuisance Impacts

Programmatic Impacts of the Plan

Plan Buildout and Rezones

Future development in the Community Plan Area would potentially include equestrian or livestock facilities, wineries, private septic systems wood-burning fireplaces, and fast food restaurants, bakeries, coffee roasting facilities, etc. All of these uses have the potential to generate odor nuisance effects to the public or to adjoining residents.

Equestrian and livestock uses can generate odors that are perceived as unpleasant to some people. The degree of unpleasantness is partly a function of personal tolerance for short-term odors associated with horse manure, and the attending flies that are attracted. Horse manure is essentially highly-processed hay, with little additional organic material that produces long-term odors, such as those commonly associated with cow excrement.

Existing and future residents in the Plan Area would potentially use individual septic systems. The septic systems are required to be installed per the Santa Barbara On-Site Sewage Ordinance. If not properly installed, these have the potential of creating nuisance odors on the site, or to existing residential development in the community.

The APCD would respond to odor complaints on a case-by-case basis, taking enforcement action as necessary. These nuisance odors are considered minor and do not warrant mitigation beyond standard complaint procedures. As a result, impacts from the above uses would be less than significant.

Odor nuisances generating from food or coffee production could present significant impacts to neighboring residences, and mitigation is required.

Odors generating from wineries may also be perceived as unpleasant, and result primarily from the fermentation and aging processes and the resultant ethanol emissions. Odor from industrial uses, including wineries, could be significant, and mitigation is required.

Wood-burning fireplaces are the cause of many public nuisance complaints that the APCD receives during the winter months. Odor nuisance impacts from wood-burning fireplaces could potentially be significant, and mitigation is required.

Overall, Plan buildout and rezones would result in Class II, *significant but mitigable* odor nuisance impacts.



Mixed Use Overlay

The Plan proposes the development of up to 137 mixed-use residential units in the commercial cores of Santa Ynez and Los Olivos. MUP presents a potential for odor complaints resulting from the development of residences in close proximity to restaurants and other commercial uses that may produce odors. In addition, certain commercial uses such as dry cleaners and gas stations produce odorous fumes which present health hazards to nearby sensitive receptors. Therefore future residents under the proposed MU Overlay may be exposed to odor nuisance impacts or health hazards, and mitigation is required. Impacts would be Class II, *significant but mitigable*.

Design Control Overlay

The proposed expansion of the Design Control Overlay Zone would not accommodate new residential development that could not otherwise occur under the existing Zoning Ordinance. The program would not result in odor generating land uses. *No impacts* would result.

Heritage Sites Overlay

The proposed application of the Heritage Sites Overlay would increase the role of the Valley Plan Advisory Committee (VPAC) or similar local advisory board in the review of proposed land subdivisions within the HS Overlay, and would not accommodate new residential development that could not otherwise occur under the existing Zoning Ordinance. The program would not result in odor generating land uses. *No impacts* would result.

Other Applicable Community Plan Policies, Programs, and Standards

The proposed policies would potentially result in the development of additional wastewater systems that may generate odors, and cause odor nuisance impacts to nearby residents.

Action WW-SYV-3.1: The County shall work cooperatively with the Regional Water Quality Control Board to pursue feasibility, fiscal, and environmental studies that evaluate the possibility of developing and implementing a community wastewater facility for the town of Los Olivos. In studying the community wastewater facility option, detailed consideration should also be given to alternative solutions, including, but not limited to: (1) defining areas of the town where septic system upgrades may continue to be feasible; (2) joint sewerage project with the town of Ballard; (3) various locations and technologies for collection, treatment and disposal and/or wastewater reuse for the town and (4) potential mandatory septic system maintenance programs. Community input shall be sought regarding the content of the studies and potential alternative solutions to be considered.

Action WW-SYV-3.2: The County shall work cooperatively with the City of Solvang, Santa Ynez Community Service District, and Regional Water Quality Control Board to pursue feasibility, fiscal, and environmental studies to evaluate the possibility of implementing public sewage service and infrastructure in the Janin Acres subdivision and certain areas West Santa Ynez (e.g., Stadium Drive/Horizon Drive), where feasible,



and consistent with Comprehensive Plan policies. Community input shall be sought regarding the content of the studies and potential alternative solutions to be considered.

Action WW-SYV-3.3: The County shall work cooperatively with the Santa Ynez Community Service District and Regional Water Quality Control Board to pursue feasibility, fiscal, and environmental studies to evaluate the possibility of implementing an Onsite Wastewater Management Plan or other alternative solutions for the town of Ballard and portions of West Santa Ynez. Community input shall be sought regarding the content of the studies and potential alternative solutions to be considered.

Potential odor nuisance impacts would be analyzed prior to development of the facility. Impacts would be Class III, *less than significant*.

Impacts Related to Development of AHOD Sites

Impact AQ-2(A) Odor Impacts: Site A

The Community Plan proposes to rezone this 2.27 acre site, with an Affordable Housing Overlay of 20 units per acre. Development of these affordable housing units would not generate substantial odors, or subject future residents to substantial odor nuisances. Impacts would be Class III, *less than significant*.

Impact AQ-2(B) Odor Impacts: Site B

The proposed Plan would rezone this site with an Affordable Housing Overlay of 20 units per acre. This property is 1.04 acres, which under this zoning, could allow development of up to 20 affordable housing units. Development of these affordable housing units would not generate substantial odors, or subject future residents to substantial odor nuisances. Impacts would be Class III, *less than significant*.

Impact AQ-2(C) Odor Impacts: Site C

Under the proposed Plan, this site would have an Affordable Housing Overlay allowing 12 units per acre. Under this overlay, up to 24 affordable housing units could be developed on this 2.06 acre property. Development of these affordable housing units would not generate substantial odors, or subject future residents to substantial odor nuisances. Impacts would be Class III, *less than significant*.

Impact AQ-2(D) Odor Impacts: Site D

The Community Plan proposes that this property would have an Affordable Housing Overlay allowing 12 units per acre. Under this overlay, up to 26 affordable housing units could be developed on this 2.2 acre property. Development of these affordable housing units would not generate substantial odors, or subject future residents to substantial odor nuisances. Impacts would be Class III, *less than significant*.

Mitigation Measures

Programmatic Mitigation

The following mitigation measures are required:

AQ-2.1 Odor Abatement Plan. Future applicants for wineries or other odor generators, based on the nature of the operations (*Scope and Content of Air Quality Sections in Environmental Documents*, July 2007) shall develop and implement an Odor Abatement Plan (OAP). The OAP shall include the following:

- Name and telephone number of contact person(s) responsible for logging and responding to winery odor complaints;
- Policy and procedure describing the actions to be taken when an odor complaint is received, including the training provided to the responsible party on how to respond to an odor complaint;
- Description of potential odor sources (i.e. fermentation and aging processes and the resultant ethanol emissions; odors associated with a fast food restaurant may include cooking and grease aromas);
- Description of potential methods for reducing odors, including minimizing potential add-on air pollution control equipment; and
- Contingency measures to curtail emissions in the event of a continuous public nuisance.

Plan Requirements and Timing. This plan shall be prepared prior to issuance of grading permits. **Monitoring.** Planning and Building shall review the OAP prior to issuance of grading permits.

AQ-2.2 Prohibited Commercial Uses in Mixed-Use Zones. To ensure that future residents in the proposed Mixed Use Overlay Zones would not be exposed to potential toxic odors generated by gas stations or PERC dry cleaning facilities, *Sec. XX-XXX. Prohibited Uses* of the proposed **Mixed Use Overlay (MU-SYV)** shall be modified to prohibit PERC dry cleaning operations, and gasoline stations.

Plan Requirements and Timing: This language shall be added to the MU-SYV Overlay, as part of the Final Santa Ynez Valley Community Plan. **Monitoring:** Planning and Development shall review and approve the policy prior to adoption of the Final Santa Ynez Valley Community Plan.

Mitigation Related to Development of AHOD Sites

No mitigation is required.



Significance After Mitigation: *Programmatic Impacts of the Plan*

With implementation of the above measure, the proposed Community Plan would have less than significant odor nuisance impacts.

Significance After Mitigation: *Impacts Related to Development of AHOD Sites*

Impacts would be less than significant without mitigation.

Impact AQ-3 Temporary Construction Emissions
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Temporary air quality impacts generally occur during project construction. Santa Barbara County has not established construction emissions thresholds. However, the County violates the State standard for PM₁₀; therefore, dust control measures are required for all projects involving grading. In addition, dust can adversely affect sensitive receptors (such as residences, hospitals, nursing homes or schools) in close proximity.

Construction activities can generate temporary air pollutant emissions. This would include emissions of ozone precursors ROC and NO_x as well as fugitive dust, which contain both PM₁₀ and PM_{2.5}. Emissions would be generated by a variety of specific activities, including site grading, use of heavy construction equipment, construction worker trips, application of architectural coatings, and paving of roads and other paved areas.

Programmatic Impacts of the Plan

Plan Buildout and Rezones

The 20-year buildout and rezoning actions under the proposed community plan would result in 516 new primary residential units, and 305 new secondary units (including residential second units, agricultural employee units, and mixed use residences), and 115 new residential units under the Affordable Housing Overlay, described below. Additional commercial development under 20-year buildout conditions would result in approximately 555,334 square feet (sf) of additional development.

Construction activity that would occur over the next 20 years in accordance with the proposed Santa Ynez Valley Community Plan would cause temporary, short-term emissions of various air pollutants. NO_x would be emitted by the operation of construction equipment, while fugitive dust (PM₁₀) would be emitted by activities that disturb the soil, such as grading and excavation, road construction and building construction.

Information regarding specific development projects, soil types, and the locations of receptors would be needed in order to quantify the level of impact associated with construction activity. However, as an example of the type of construction-related emissions that an individual project can generate, a 200,000 square foot one-story commercial retail development would typically involve the use of a bulldozer, grader, scraper, front-end loader, water truck, and dump trucks during the rough grading phase. The grading phase of development, which in this example



would last for approximately two weeks, uses the largest amount of heavy-duty construction equipment, which is the primary source of emissions during construction. This example would generate approximately 58 pounds per day of NO_x, 5.1 pounds per day of ROG, and 5.5 pounds per day of PM₁₀. In this example the NO_x level would exceed 25 lbs per day requiring the implementation of the APCD's standard NO_x reduction measures. In addition, all construction activity would be required to implement the APCD's standard PM₁₀ reduction measures. Demolition of regulated structures would require APCD Notification, and as discussed in Section 4.12 *Hazards and Hazardous Materials*, contaminated soil remediation may require APCD permits.

Taken individually, construction activities are not generally considered to have significant air quality impacts because of their short-term and temporary nature along with the application of standard dust control measures. However, given the amount of development that the Santa Ynez Valley Community Plan would accommodate over the next 20 years, it is reasonable to conclude that some major construction activity could be occurring at any given time throughout the valley. Impacts could also be complicated by the fact that multiple construction projects could occur simultaneously in any specific portion of the Valley. Therefore, construction-related impacts associated with Santa Ynez Valley Community Plan buildout are considered potentially significant. Given that Santa Barbara County violates the state standards for ozone and PM₁₀, the minimal amount of dust and ozone precursors generated from construction activities is nevertheless considered to be potentially significant and mitigation measures are required. Overall, at a program level, construction-related air quality impacts are considered Class II, *significant but mitigable*.

Mixed Use Overlay

Implementation of the proposed Mixed Use (MU) Overlay on the designated sites within the commercial cores of Los Olivos and Santa Ynez would be expected to generate additional development in these townships. The proposed Mixed Use Overlay, the changes to parking standards associated with mixed use projects (Policy LUT-SYV-4.1), and development of one or more community parking lots in the Santa Ynez and Los Olivos (Action LUT-SYV-4.3) may facilitate the development of mixed-use projects in these townships at a greater rate if not to a greater degree than under existing plans and policies. The sites designated for application of the MU Overlay are already developed portions of the Valley. Construction of projects under the mixed use overlay would therefore potentially occur adjacent to occupied commercial or residential uses which may include sensitive receptors, and mitigation would be required. Therefore, the MU Overlay would result in Class II, *significant but mitigable* impacts due to construction emissions.

Design Control Overlay

The Revised Design Control (D) Overlay is proposed to protect scenic qualities, property values, and neighborhood character on certain key sites and along certain key corridors. This program would not accommodate construction of projects that could not already be developed under existing County land use regulations. Since this program would not generate additional emissions compared to what could currently be generated, *no impacts* would result.



Heritage Sites Overlay

The proposed Heritage Sites (HS) Overlay would designate certain parcels in the Santa Ynez Valley whose potential subdivision requires a higher level of scrutiny and careful consideration. This program would not accommodate construction of projects that could not already be developed under existing County land use regulations. Since this program would not generate additional emissions compared to what could currently be generated, *no impacts* would result.

Other Applicable Community Plan Policies, Programs, and Standards

No other Community Plan policies, programs, or standards would result in development that would have construction-related air quality impacts.

Impacts Related to Development of AHOD Sites

Table 4.6-5 shows estimates of maximum daily construction emissions associated with buildout of each of the Affordable Housing Overlay sites. Construction of the residential units on the affordable housing overlay sites would involve activities that would generate temporary air pollutant emissions. This would include emissions of ozone precursors ROG and NO_x as well as fugitive dust, which contain both PM₁₀ and PM_{2.5}. Emissions would be generated by a variety of specific activities, including site grading, use of heavy construction equipment, construction worker trips, application of architectural coatings, and paving of roads and other paved areas. The impacts of construction activity on each individual AHOD site are discussed below.

**Table 4.6-5 Unmitigated Construction Emissions
 Associated with Buildout of the Affordable Housing Overlay Sites**

Site: Maximum Units	Maximum Emissions (lbs/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
AHOD Site A: 45 multi-family units	52.71	39.7	13.86	4.63
AHOD Site B: 20 multi-family units	23.43	39.49	7.65	3.33
AHOD Site C: 24 multi-family units	28.11	39.66	12.86	4.42
AHOD Site D: 26 multi-family units	30.46	39.68	13.46	4.55

Source: URBEMIS 2007 version 9.2.2, modeling results contained in Appendix F.

Impact AQ-3(A) Temporary Construction Emissions: Site A

The Community Plan proposes to rezone this 2.27 acre site, with an Affordable Housing Overlay of 20 units per acre. Caesar’s Auto Detailing and a car wash occupy the southeast portion of the property, and a single-family residence is adjacent to this business. These structures would potentially be demolished if multi-family units were developed. The effect of this overlay would be to allow the property owner the option of either retaining the base commercial zoning, or developing up to 45 affordable housing units on the entire lot in place of existing commercial and residential uses. The closest sensitive receptors include single-family residences located approximately 0.01 miles to the east, north and northwest.



A construction scenario was analyzed in URBEMIS utilizing defaults, but substituting a project area of 2.27 acres for the default acreage. To calculate emissions created by demolition activities, the existing structures that would potentially be demolished were estimated to total approximately 2,600 square feet, based on aerial photography. The estimated construction emissions are shown in Table 4.6-5. Maximum daily ROG emissions are estimated at about 52.71 pounds per day, which would occur during the application of architectural coatings. Maximum daily NO_x emissions would occur during the site grading phase due to off road diesel emissions, and are estimated at about 39.7 pounds per day. The maximum PM₁₀ and PM_{2.5} emissions would be 13.86 and 4.63 pounds per day, respectively, and would occur when dust is generated during site grading. Given that Santa Barbara County violates the state standards for ozone and PM₁₀, the minimal amount of dust and ozone precursors generated from construction activities is nevertheless considered to be potentially significant and mitigation measures are required. Overall, at a program level, construction-related air quality impacts are considered Class II, *significant but mitigable*.

Impact AQ-3(B) Temporary Construction Emissions: Site B

The proposed Plan would rezone this site with an Affordable Housing Overlay of 20 units per acre. This property is 1.04 acres, which under this zoning, could allow development of up to 20 affordable housing units. The entire site is currently developed with the Sanja Cota Motel, which was built in 1962, and includes a 170 square foot “hay barn”, an office/residence, 23 guest rooms and associated parking. The existing structures that would be demolished if the site were to be developed with multifamily units, total approximately 13,500 sf. The closest sensitive receptors include a single-family residence within 150 feet to the north, and the single-family residence on AHOD site A, approximately 150 feet to the east.

A construction scenario was analyzed in URBEMIS utilizing defaults, but substituting a project area of 1.04 acres. The estimated construction emissions are shown in Table 4.6-5. Maximum daily ROG emissions are estimated at about 23.43 pounds per day, which would occur during the application of architectural coatings. Maximum daily NO_x emissions would occur during the site grading phase due to off road diesel emissions, and are estimated at about 39.49 pounds per day. The maximum PM₁₀ and PM_{2.5} emissions would be 7.65 and 3.33 pounds per day, respectively, and would occur when dust is generated during site grading. Given that Santa Barbara County violates the state standards for ozone and PM₁₀, the minimal amount of dust and ozone precursors generated from construction activities is nevertheless considered to be potentially significant and mitigation measures are required. Overall, at a program level, construction-related air quality impacts are considered Class II, *significant but mitigable*.

Impact AQ-3(C) Temporary Construction Emissions: Site C

Under the proposed Plan, this site would have an Affordable Housing Overlay allowing 12 units per acre. Under this overlay, up to 24 affordable housing units could be developed on this 2.06 acre property. The site contains a single family residence that may be demolished if construction of multi-family units were to occur under this overlay. The closest sensitive receptor is a single-family residence located immediately adjacent to the southern property boundary.



A construction scenario was analyzed in URBEMIS utilizing defaults, but substituting a project area of 2.06 acres for the default acreage. To calculate emissions created by demolition activities, the existing structures that would potentially be demolished were estimated to total approximately 2,000 square feet, based on aerial photography. The estimated construction emissions are shown in Table 4.6-5. Maximum daily ROG emissions are estimated at about 28.11 pounds per day, which would occur during the application of architectural coatings. Maximum daily NO_x emissions would occur during the site grading phase due to off road diesel emissions, and are estimated at about 39.66 pounds per day. The maximum PM₁₀ and PM_{2.5} emissions would be 12.86 and 4.42 pounds per day, respectively, and would occur when dust is generated during site grading. Given that Santa Barbara County violates the state standards for ozone and PM₁₀, the minimal amount of dust and ozone precursors generated from construction activities is nevertheless considered to be potentially significant and mitigation measures are required. Overall, at a program level, construction-related air quality impacts are considered Class II, *significant but mitigable*.

Impact AQ-3(D) Temporary Construction Emissions: Site D

The Community Plan proposes that this property would have an Affordable Housing Overlay allowing 12 units per acre. Under this overlay, up to 26 affordable housing units could be developed on this 2.2 acre property. The site contains a single family residence that may be demolished if construction of multi-family units were to occur under this overlay. The closest sensitive receptors are single-family residences located within 100 feet to the east and south.

A construction scenario was analyzed in URBEMIS utilizing defaults, but substituting a project area of 2.2 acres for the default acreage. To calculate emissions created by demolition activities, the existing structures that would potentially be demolished was estimated to total approximately 2,500 square feet, based on aerial photography. The estimated construction emissions are shown in Table 4.6-5. Maximum daily ROG emissions are estimated at about 30.46 pounds per day, which would occur during the application of architectural coatings. Maximum daily NO_x emissions would occur during the site grading phase due to off road diesel emissions, and are estimated at about 39.68 pounds per day. The maximum PM₁₀ and PM_{2.5} emissions would be 13.46 and 4.55 pounds per day, respectively, and would occur when dust is generated during site grading. Given that Santa Barbara County violates the state standards for ozone and PM₁₀, the minimal amount of dust and ozone precursors generated from construction activities is nevertheless considered to be potentially significant and mitigation measures are required. Overall, at a program level, construction-related air quality impacts are considered Class II, *significant but mitigable*.

Mitigation Measures

Programmatic Mitigation

Measures included in the Scope and Content of Air Quality Sections in Environmental Documents (July 2007) to reduce construction-related emissions would apply to construction activity associated with Santa Ynez Valley Community Plan buildout. These include measures to limit fugitive dust (PM₁₀) as identified below. Subsequent analysis of future individual projects implemented under the Santa Ynez Valley Community Plan should include all of the



relevant mitigation measures identified below to reduce construction-related emissions to less than significant levels.

AQ-3.1 Fugitive Dust (PM₁₀) Control. Fugitive dust control shall include measures designed to reduce particulate matter (PM₁₀) emissions from project construction. Controls shall include, but not be limited to, the following measures:

- *During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency should be required whenever the wind speed exceeds 15 mph. Reclaimed water should be used whenever possible, but should not be used in or around crops for human consumption.*
- *Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less.*
- *Gravel pads must be installed at all access points to prevent tracking of mud on to public roads.*
- *If importation, exportation and stockpiling of fill material are involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin.*
- *After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur.*
- *The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District prior to land use clearance for map recordation and land use clearance for finish grading for the structure.*
- *Prior to land use clearance, the applicant shall include, as a note on a separate informational sheet to be recorded with map, these dust control requirements. All requirements shall be shown on grading and building plans.*

Plan Requirements and Timing: P&D shall review grading and building plans for all project components prior to grading and construction. **Monitoring:** Permit Compliance inspectors shall perform periodic spot checks during construction to ensure compliance with requirements. APCD inspectors shall respond to nuisance complaints.



Mitigation Related to Development of AHOD Sites

Although air quality impacts during project construction would not exceed significance thresholds because they would be temporary, since Santa Barbara County violates the state standard for PM₁₀, dust mitigation measures are required for all discretionary construction activities regardless of the significance of the fugitive dust impacts. Mitigation Measure AQ-3.1 *Fugitive Dust (PM₁₀) Control*, above, would apply to development on all four of the AHOD sites.

Significance After Mitigation: *Programmatic Impacts of the Plan*

Subsequent analysis of future individual projects implemented under the Santa Ynez Valley Community Plan would include all of the relevant mitigation measures identified above to reduce construction-related emissions to less than significant levels, no significant residual effects would occur.

Significance After Mitigation: *Impacts Related to Development of AHOD Sites*

For AHOD sites A, C and D, construction impacts would be less than significant without mitigation; however, implementation of standard dust control mitigation for all projects involving earthwork would be anticipated to further reduce PM₁₀ emissions, in addition to reducing the potential for nuisance complaints.

Impact AQ-4 Operational Emissions

Operational emissions are long-term regional emissions that are contributed by area sources and mobile sources. The area sources are emissions that result from use of electricity and natural gas as well as from aerosols, lawn maintenance equipment and other modern conveniences generally utilized by people. Mobile source emissions are those emanating from vehicles utilized by people. The emissions were quantified using URBEMIS for each project component where applicable. Per county thresholds, a significant impact would occur if a project were to:

- *Emit from all sources (both mobile and stationary) 55 pounds/day of ROC or NOx or 80 pounds/day of PM₁₀;*
- *Emit 25 pounds per day of NOx or ROC from motor vehicle trips only*

Programmatic Impacts of the Plan

Buildout of individual projects under the proposed Community Plan would result in an increase in air pollutant emissions within the Santa Barbara County portion of the South Central Coast Air Basin. Long term/operational emissions associated with the Community Plan buildout are those associated with motor vehicle trips and stationary sources that may require permits from the APCD. Examples of stationary emission sources include gas stations, auto body shops, dry cleaners, and water treatment facilities. Other stationary sources such as residential heating and cooling equipment, wood burning stoves and fireplaces, or other individual appliances known as “area sources.”



The APCD does not require quantified analysis of construction or operational air contaminant emissions impacts for program-level evaluations, such as for the proposed Santa Ynez Valley Community Plan. Operational emissions are taken into account in the County’s Clean Air Plan, therefore the CAP consistency analysis in Impact AQ-1 above is the method for determining whether the program’s impact to regional air quality would be significant. In addition, the end of this section discusses the proposed Plan’s contribution to cumulative greenhouse gas emissions. No further analysis is required.

Impacts Related to Development of AHOD Sites

Impact AQ-4(A) Long-Term Regional Emissions: Site A

Development of this 2.27-acre site at a density of 20 units/acre would yield up to 45 residential units. Table 4.6-6 shows daily area and mobile emissions associated with this level of development. Overall emissions would include 5.59 pounds of ROG, 4.40 pounds of NO_x, and 3.73 pounds of PM₁₀. Emissions would be below County thresholds and the impact would be Class III, *less than significant*.

Table 4.6-6 Operational Emissions for AHOD Site A

Source	Estimated Emissions (lbs/day)		
	ROG	NO _x	PM ₁₀
Area Source	2.66	0.36	0.00
Mobile	2.93	4.04	3.73
Total	5.59	4.40	3.73
<i>Threshold (area + mobile)</i>	55	55	80
<i>Threshold (mobile only)</i>	25	25	n/a

Source: URBEMIS 2007 version 9.2.2, modeling results contained in Appendix F.

Impact AQ-4(B) Long-Term Regional Emissions: Site B

Development of this 1.04-acre site at a density of 20 units/acre would yield up to 20 residential units. Table 4.6-7 shows daily area and mobile emissions associated with this level of development. Overall emissions would include 2.56 pounds of ROG, 1.98 pounds of NO_x, and 1.67 pounds of PM₁₀. Emissions would be below County thresholds and the impact would be Class III, *less than significant*.

Table 4.6-7 Operational Emissions for AHOD Site B

Source	Estimated Emissions (lbs/day)		
	ROG	NO _x	PM ₁₀
Area Source	1.25	0.17	0.00
Mobile	1.31	1.81	1.67
Total	2.56	1.98	1.67
<i>Threshold (area + mobile)</i>	55	55	80
<i>Threshold (mobile only)</i>	25	25	n/a

Source: URBEMIS 2007 version 9.2.2, modeling results contained in Appendix F.



Impact AQ-4(C) Long-Term Regional Emissions: Site C

Development of this 2.06-acre site at a density of 12 units/acre would yield up to 24 residential units. Table 4.6-8 shows daily area and mobile emissions associated with this level of development. Overall emissions would include 3.2 pounds of ROG, 2.62 pounds of NO_x, and 0.44 pounds of PM₁₀. Emissions would be below County thresholds and the impact would be Class III, *less than significant*.

Table 4.6-8 Operational Emissions for AHOD Site C

Source	Estimated Emissions (lbs/day)		
	ROG	NO _x	PM ₁₀
Area Source	1.47	0.20	0.00
Mobile	1.73	2.42	0.44
Total	3.20	2.62	0.44
<i>Threshold (area + mobile)</i>	55	55	80
<i>Threshold (mobile only)</i>	25	25	n/a

Source: URBEMIS 2007 version 9.2.2, modeling results contained in Appendix F.

Impact AQ-4(D) Long-Term Regional Emissions: Site D

Development of this 2.2-acre site at a density of 12 units/acre would yield up to 26 residential units. Table 4.6-9 shows daily area and mobile emissions associated with this level of development. Overall emissions would include 3.46 pounds of ROG, 2.83 pounds of NO_x, and 2.41 pounds of PM₁₀. Emissions would be below County thresholds and the impact would be Class III, *less than significant*.

Table 4.6-9 Operational Emissions for AHOD Site D

Source	Estimated Emissions (lbs/day)		
	ROG	NO _x	PM ₁₀
Area Source	1.59	0.22	0.00
Mobile	1.87	2.61	2.41
Total	3.46	2.83	2.41
<i>Threshold (area + mobile)</i>	55	55	80
<i>Threshold (mobile only)</i>	25	25	n/a

Source: URBEMIS 2007 version 9.2.2, modeling results contained in Appendix F.

Mitigation Measures

Programmatic Mitigation

Programmatic evaluation of operational impacts is addressed through the CAP consistency discussion in Impact AQ-1 above. No additional mitigation is required.

Mitigation Related to Development of AHOD Sites

No mitigation is required.



Significance After Mitigation: *Programmatic Impacts of the Plan*

Programmatic evaluation of operational impacts is addressed through the CAP consistency discussion in Impact AQ-1 above.

Significance After Mitigation: *Impacts Related to Development of AHOD Sites*

Impacts would be less than significant without mitigation.

Impact AQ-5 Cumulative Odor Nuisance Impacts
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In addition to future development in the Community Plan Area, development in rural and industrial areas throughout the Valley would potentially include equestrian or livestock facilities, wineries, or private septic systems. As described under Impact AQ-2, all of these uses have the potential to generate odor nuisance effects to the public or to adjoining residents. Similar to Plan impacts, the nuisance from septic systems or livestock would be considered less than significant, and do not warrant mitigation beyond the standard complaint procedures.

Odors generating from wineries may also be perceived as unpleasant, and result primarily from the fermentation and aging processes and the resultant ethanol emissions. Cumulative buildout in the area would additionally include the Winery Permit Process Ordinance that was adopted by the County Board of Supervisors in August 2004. The Winery Permit Process Ordinance established three permit tiers of winery development and may encourage the development of small, low intensity wineries (Tier 1) due to reduced permit requirements. All wineries, existing and proposed, must now apply for, and obtain either a Permit or a written Permit Exemption from the APCD. Odor from industrial uses, including wineries, could be significant, and mitigation is required. Cumulative odor nuisance impacts are therefore Class II, *significant but mitigable*.

Mitigation Measures

Implementation of proposed Community Plan policies and Mitigation Measure AQ-2.1 would reduce cumulative odor nuisance impacts to a less than significant level. No additional mitigation is required.

Significance After Mitigation

Cumulative odor nuisance impacts would be less than significant after mitigation.

Impact AQ-6 Cumulative Temporary Construction Emissions

The impacts of the Plan, including the 20-year Plan buildout, would be combined with cumulative impacts resulting from development contemplated in the Buellton and Solvang General Plans as well as buildout of the Chumash Reservation. General Plan buildout in the City of Buellton would result in approximately 1,814 additional residential units and 1,197,730



sf of new commercial development. Buildout under Solvang’s General Plan will result in approximately 532 additional residential units, and 115,436 sf of new commercial development. An additional 72 residential units is estimated to accommodate 2030 growth projections on the Chumash Reservation.

In addition to growth from buildout projections of the Plan and similar buildout projections from other jurisdictions with in the Santa Ynez Valley, a few projects, programs, or initiatives would have the potential for additional growth in the Valley: for example, the Santa Barbara County Uniform Rules Update, the Winery Permit Process Ordinance, the Bradley Lands Annexation project in Santa Maria, the Los Alamos Community Plan, and the UCSB Long Range Development Plan. The Santa Barbara County Uniform Rules Update is estimated to result in the development of approximately 78 additional residential units throughout the agricultural areas of the Santa Ynez Valley Area. The Winery Permit Process Ordinance that was adopted in 2004 may encourage the additional development of small, low intensity wineries in the Valley.

Taken individually, construction activities are not considered to have significant air quality impacts because of their short-term and temporary nature. However, given the amount of development that would result from cumulative projects over the next 20 years, it is reasonable to conclude that some major construction activity could be occurring at any given time throughout the valley. Impacts could also be complicated by the fact that multiple construction projects could occur simultaneously in any specific portion of the valley. Given that Santa Barbara County violates the state standards for ozone and PM₁₀, the minimal amount of dust and ozone precursors generated from construction activities is nevertheless considered to be potentially significant and mitigation measures are required. Overall, cumulative construction emissions are Class II, *significant but mitigable*.

Mitigation Measures

Implementation of proposed Community Plan policies and Mitigation Measure AQ-3.1 would reduce the Plan’s contribution to cumulative construction emissions to a less than significant level. No additional mitigation is required.

Significance After Mitigation

Cumulative construction emissions would be less than significant after mitigation.

Impact AQ-7 Greenhouse Gas Emissions/Global Climate Change
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The impacts of the Plan, including the 20-year Plan buildout, would be combined with cumulative impacts resulting from development contemplated in the Buellton and Solvang General Plans as well as buildout of the Chumash Reservation. General Plan buildout in the City of Buellton would result in approximately 1,814 additional residential units and 1,197,730 sf of new commercial development. Buildout under Solvang’s General Plan will result in approximately 532 additional residential units, and 115,436 sf of new commercial development.



An additional 72 residential units is estimated to accommodate 2030 growth projections on the Chumash Reservation.

In addition to growth from buildout projections of the Plan and similar buildout projections from other jurisdictions within the Santa Ynez Valley, a few projects, programs, or initiatives would have the potential for additional growth in the Valley: for example, the Santa Barbara County Uniform Rules Update, the Winery Permit Process Ordinance, the Bradley Lands Annexation project in Santa Maria, the Los Alamos Community Plan, and the UCSB Long Range Development Plan. The Santa Barbara County Uniform Rules Update is estimated to result in the development of approximately 78 additional residential units throughout the agricultural areas of the Santa Ynez Valley Area. The Winery Permit Process Ordinance that was adopted in 2004 may encourage the additional development of small, low intensity wineries in the Valley.

In the absence of adopted thresholds of significance for greenhouse gas emissions, the cumulative impact analysis includes an estimate of the Community Plan-specific CO₂ emissions and an estimate of the CO₂ emissions from the cumulative projects listed above and compares these to the statewide CO₂ emissions. The analysis focuses on CO₂ emissions because these are the major GHG component, and since the URBEMIS emissions model provides information on CO₂ emissions expected from various residential and non-residential uses.

The estimated annual CO₂ emitted as a result of the 20-year buildout under the Plan, as modeled with URBEMIS, is estimated at about 66,824.77 tons, which is equivalent to about 0.067 million metric tons. Cumulative development would generate annual CO₂ emissions estimated at 74,676.05 tons, which is equivalent to about 0.075 million metric tons (see Table 4.6-10).

Table 4.6-10 Estimated CO₂ Emissions from Proposed SYVCP + Cumulative Projects

Long-Term Emission Source	CO ₂ Emissions - Summer (lbs/day)	CO ₂ Emissions - Annual (tons/year)
Proposed Project Area (stationary)	19,758.29	4,175.14
Proposed Project Vehicle (mobile)	349,269.83	62,649.63
Total SYVCP Operational Emissions	369,055.12	66,824.77
Cumulative Projects Area (stationary)	33,640.32	7,622.46
Cumulative Projects Vehicle (mobile)	373,829.97	67,053.59
Total Cumulative Operational Emissions	407,470.29	74,676.05
TOTAL CO₂ EMISSIONS	776,525.41	141,500.82

Source: URBEMIS 2007 v.9.2.2. See Appendix F for results and assumptions.

GHG Calculation Methodology

The following methodologies were used to calculate GHG emissions from 20-year buildout of the Plan, including nitrous oxide (N₂O) and methane (CH₄) emissions:

Indirect Emissions from Electricity Use. Operational emissions of CO₂ were quantified using the California Air Resource Board's URBEMIS 2007 (version 9.2.4) computer model. Nitrous oxide (N₂O) and methane (CH₄) emissions were quantified using the California Climate Action Registry



General Reporting Protocol (April 2008) indirect emissions factors for electricity use (see Appendix F for calculations). The calculations and emission factors contained in the General Reporting Protocol were selected based on technical advice provided to the Registry by the California Energy Commission. This methodology is considered to be reasonable and reliable for use as it has been subjected to peer review by numerous public and private stakeholders and in particular by the California Energy Commission, and is recommended by CAPCOA (January 2008).

The following equations are used to determine total emission from Indirect Electricity Use:

$$\text{CH}_4 \text{ Emission (metric tons) = Electricity Use (kWh) x CH}_4 \text{ Electricity Emission Factor (0.0067 lbs/MWh) / 2,204.62 lbs/metric tons}$$

$$\text{N}_2\text{O Emission (metric tons) = Electricity Use (kWh) x N}_2\text{O Electricity Emission Factor (0.0037 lbs/MWh) / 2,204.62 lbs/metric tons}$$

Direct Emissions from Mobile Combustion. Emissions of CO₂ were quantified using the California Air Resource Board's URBEMIS 2007 (version 9.2.4) computer model. Nitrous oxide (N₂O) and methane (CH₄) emissions were quantified using the California Climate Action Registry General Reporting Protocol (April 2008) direct emissions factors for mobile combustion. Total daily mileage of a 20-year buildout scenario under the Plan was calculated in URBEMIS 2007 and extrapolated out to derive total annual mileage. Emission rates were based on the vehicle mix output generated by URBEMIS and the emission factors found in the California Climate Action Registry General Reporting Protocol.

Equations to determine total emission from fuel use in Motor Vehicles include:

$$\text{CH}_4 \text{ Emission (metric tons) = Emission Factor by Vehicle and Fuel Type (g/mi) x Annual Mileage (mi) x 0.000001 metric tons/g}$$

$$\text{N}_2\text{O Emission (metric tons) = Emission Factor by Vehicle and Fuel Type (g/mi) x Annual Mileage (mi) x 0.000001 metric tons/g}$$

Equations to determine Carbon Dioxide Equivalent (CO₂e)⁵ include:

$$\text{Metric Tons of CO}_2\text{e} = \text{Metric tons of CH}_4 \times 21 (\text{GWP CH}_4)$$

$$\text{Metric Tons of CO}_2\text{e} = \text{Metric tons of N}_2\text{O} \times 310 (\text{GWP N}_2\text{O})$$

⁵ Because different GHG constituents absorb and reradiate different amounts of heat, a common reference gas, in this case (CO₂), is used to relate the amount of heat absorbed to the amount of the gas emissions. The amount of each GHG constituent is normalized to its "CO₂ equivalent" (CO₂e), which is calculated by multiplying the amount of a GHG emitted by its global warming potential (GWP). CO₂ has a GWP of one. By contrast, methane (CH₄) has a GWP of 21, meaning its global warming effect is 21 times greater than carbon dioxide on a molecule per molecule basis.



Quantification of Emissions

20-Year Plan Buildout

Operational Emissions. Development under the Plan at 20-year buildout would consume approximately 15,850,128 kWh/year based on energy demand factors from the CAPCOA CEQA and Climate Change white paper (January 2008) and the South Coast Air Quality Management District’s CEQA Air Quality Handbook (April 1993). The generation of electricity through combustion of fossil fuels typically yields carbon dioxide, and to a smaller extent other GHGs such as nitrous oxide and methane. Table 4.6-11 shows the estimated operational emissions of GHGs from the Plan. Additional carbon dioxide emission estimates generated using the URBEMIS model also take into account emissions from other area sources such as natural gas use for space heating, and are included in the CO₂ totals below.

Table 4.6-11 Estimated Annual Operational Emissions of Greenhouse Gases - Buildout

Emission Source	Annual Emissions	
	Emissions	CO ₂ e
Carbon Dioxide (CO ₂) from natural gas ¹	6,963.8 tons (short, US)	6,317.5 metric tons CO ₂ e
Carbon Dioxide (CO ₂) from energy use ²	4,175.1 tons (short, US)	3,787.6 metric tons CO ₂ e
Methane (CH ₄) ²	0.1 metric tons	1.1 metric tons CO ₂ e
Nitrous Oxide (N ₂ O) ²	>0.1 metric tons	9.1 metric tons CO ₂ e
Project Total		10,115.3 metric tons CO₂e

Source:

¹ Area Source Emissions from URBEMIS 2007 (version 9.2.4).

² California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, June 2008, page 39-46.

Mobile Emissions. Mobile source GHG emissions were estimated using the average daily trips estimate generated and the total vehicle miles traveled estimated in URBEMIS 2007 (v. 9.2.4). The URBEMIS model estimates that 20-year buildout under the Plan could generate up to 64,296 trips, which translates to 377,260 daily vehicle miles, or 137,699,900 annual miles. Table 4.6-12 shows the estimated operational emissions of GHGs from the Plan.

Table 4.6-12 Estimated Annual Mobile Emissions of Greenhouse Gases - Buildout

Emission Source	Annual Emissions	
	Emissions	CO ₂ e
Carbon Dioxide (CO ₂) ¹	62,649.6 tons (short, US)	56,834.8 metric tons CO ₂ e
Methane (CH ₄) ²	57.5 metric tons	1,206.6 metric tons CO ₂ e
Nitrous Oxide (N ₂ O) ²	63.5 metric tons	19,676.6 metric tons CO ₂ e
Project Total		77,718.0 metric tons CO₂e

Source:

¹ Operational Emissions from URBEMIS 2007 (version 9.2.4).

² California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, June 2008, page 39-46.



Combined Operational and Mobile Emissions. Table 4.6-13 lists the combined operational and mobile emissions for 20-year buildout of the Plan. Using the numbers described above, the combined operational and mobile greenhouse gas emissions for the proposed project total approximately 87,833 metric tons per year in carbon dioxide equivalency units. This total represents roughly 0.018% of California’s total 2004 emissions of 492 million metric tons, as reported below in Table 4.6-16. These emission projections indicate the majority of the Plan GHG emissions are associated with vehicle miles traveled (88.5%), and to a lesser extent from electricity consumption (11.5%).

Table 4.6-13 Combined Annual Emissions of Greenhouse Gases - Buildout

Emission Source	Annual Emissions
Operational	10,115.3 metric tons CO ₂ e
Mobile	77,718.0 metric tons CO ₂ e
Project Total	87,833.3 metric tons CO₂e

Sources:

Operational Emissions from URBEMIS 2007 (version 9.2.4).
 California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, June 2008.

AHOD Sites

Operational and mobile emissions totals for each of the AHOD sites were calculated according to the methodologies described above. The results are shown in Table 5. For calculations, see Appendix F.

Table 4.6-14 Combined Annual Emissions of Greenhouse Gases – AHOD Sites

AHOD Site	Operational CO₂e	Mobile CO₂e	Total CO₂e
Site A	222.9 metric tons CO ₂ e	445.8 metric tons CO ₂ e	668.7 metric tons CO ₂ e
Site B	99.2 metric tons CO ₂ e	199.7 metric tons CO ₂ e	298.9 metric tons CO ₂ e
Site C	119.5 metric tons CO ₂ e	267.0 metric tons CO ₂ e	386.5 metric tons CO ₂ e
Site D	128.9 metric tons CO ₂ e	288.5 metric tons CO ₂ e	417.4 metric tons CO ₂ e

Source:

Operational Emissions from URBEMIS 2007 (version 9.2.4).
 California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, June 2008, page 39-46.

Cumulative Development

Cumulative emissions were calculated according to the methodologies described above. The results are shown in Table 6, alongside results for 20-year buildout of the Plan. For calculations, see Appendix F.



Table 4.6-15 Estimated CO₂e Emissions from Proposed SYVCP + Cumulative Projects

Long-Term Emission Source	Annual Emissions
Proposed Project Area (operational)	10,115.3 metric tons CO ₂ e
Proposed Project Vehicle (mobile)	77,718.0 metric tons CO ₂ e
Total SYVCP Operational Emissions	87,833.3 metric tons CO₂e
Cumulative Projects Area (operational)	20,376.4 metric tons CO ₂ e
Cumulative Projects Vehicle (mobile)	83,109.2 metric tons CO ₂ e
Total Cumulative Operational Emissions	103,485.6 metric tons CO₂e
TOTAL CO₂ EMISSIONS	191,318.9 metric tons CO₂e

Source:

¹ Operational Emissions from URBEMIS 2007 (version 9.2.4).

² California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, June 2008, page 39-46.

The California Energy Commission (CEC) has developed an inventory of statewide GHG emissions. According to the CEC, in 2004 (the most recent year for which data is available), California sources contributed 492 million metric tons of CO₂e. Table 7 compares CO₂ emissions generated by SYVCP-specific development and cumulative development to overall statewide CO₂ emissions. The contribution of approximately 0.088 million metric tons of CO₂ estimated as a result of the proposed Community Plan is approximately 0.018% of the statewide emissions. The contribution of 0.103 million metric tons of CO₂ estimated as a result of the buildout in the cumulative projects list is approximately 0.021% of the statewide emissions.

Table 4.6-16 SYVCP, Cumulative and Statewide CO₂ Emissions Comparison

Emission Source	CO ₂ e Emissions (million metric tons/year)	% of Statewide annual CO ₂ Emissions
State of California (2004)	492	100%
Proposed Community Plan	0.088	0.018%
Cumulative Projects	0.103	0.021%

Source: California Energy Commission, 2007 and URBEMIS 2007 v.9.2.2. See Appendix F for results and assumptions.

No threshold or guidance currently exists; therefore no conclusive statements regarding significance of this impact can be made. However, because of the importance of GCC and its consequences, mitigation measures are provided below.

Efforts to reduce future air pollutant emissions would result in substantial decreases in the total amount of GHG emissions associated with development under the proposed Plan. The Climate Action Team, established by Executive Order S-3-05 has recommended strategies (Table 4.6-17) to reduce GHG emissions at a statewide level to meet the goals of the Executive Order (http://www.climatechange.ca.gov/climate_action_team/index.html). Several of these actions are already required by California regulations, or are similar to components of the proposed Plan. For example, mixed use development is identified as a GHG reduction measure in both the OPR Technical Advisory on CEQA and Climate Change (OPR, June 2008) and the CAPCOA white paper on CEQA and Climate Change (CAPCOA, January 2008) due to a reduction in resultant automobile trips and vehicle miles traveled. Development under the



proposed Mixed Use Overlay would implement this GHG reduction strategy and serve to reduce the amount of GHG emissions under buildout conditions.

Table 4.6-17 Climate Action Team Strategies

HFC Reduction Strategies	Measure requires the installation of mechanical air conditioners and refrigeration units that use non-ozone depleting chemicals.
Achieve 50% Statewide Recycling Goal	Measure requires a solid waste-recycling plan that aims to recycle 35-50% of overall disposable waste. Note that such recycling is already required in California, and already achieved in the Plan Area (refer to Section 4.3 <i>Public Services</i>).
Diesel Anti-Idling	Measure requires the reduction of diesel truck idling times. Note that CARB has already implemented a regulation to limit diesel idling to no more than 5 minutes.
Urban Forest	Measure requires the use of landscaping to shade building and parking lots.
Building Energy Efficiency Standards	Measure requires passive or fan-aided cooling, outdoor lighting designed for high efficiency solar-powered, natural lighting in buildings, architectural design to reduce energy use and increase energy efficiency, and use of landscaping to shade buildings.
Appliance Energy Efficiency	Measure requires use of energy efficient appliances and lighting.
Green Building Initiative	Building design to incorporate green building features such as recycled exterior masonry, recycled or low impact floors, recycled insulation, and low VOC paint.
California Solar Initiative	Measure requires solar energy collectors for each building.

Mitigation Measures

While no thresholds of significance currently exist for evaluating GHG emissions, this document presumes that the potential for significance exists, and therefore, mitigation measures are appropriate in order to reduce potential impacts to acceptable levels, lacking formal thresholds. For this reason, the Plan and this document enumerate an extensive list of programmatic mitigation measures in response to the underlying intent of CEQA to mitigate potentially significant impacts to the greatest degree feasible. It should also be noted that the Board of Supervisors at their March 17, 2009 meeting directed County staff to initiate work on a climate action strategy program as a County-wide policy initiative in response to the provisions of AB32 and SB 375.

As discussed above, the Plan’s Mixed Use Overlay would place housing closer to jobs and shopping and hence lead to less vehicle trips and less GHG emissions than an equivalent amount of non-mixed use development. In addition, as noted above in Impact AQ-1, the Plan proposes several policies and actions that would encourage alternate modes of travel and potentially help reduce vehicle miles traveled and resultant vehicle emissions, and therefore GHG emissions:

Policy LUT-SYV-2.1: In order to provide community cohesiveness, new neighborhoods should be designed to provide circulation, pedestrian, bicycle and public transportation linkage to existing neighborhoods, schools, parks, and commercial areas.

Action CIRC-SYV-1.2: A minimum of twenty percent of all transportation impact fees collected shall be allocated to the bicycle system, transit, pedestrian and wheelchair improvements, and multi-purpose trails serving bicycle, pedestrian, and equestrian users. Said alternative transportation funds shall be deposited and held in separate accounts, together with accumulated interest, with provisions for loans between the two accounts, until expenditure upon bicycle, transit, pedestrian, or multi-purpose facilities is needed.



Policy CIRC-SYV-5: The County shall encourage development of all feasible forms of alternative transportation in the Santa Ynez Valley Community Plan Area.

Action CIRC-SYV-5.1: The County shall work with SBCAG, the cities of Solvang and Buellton, and local transit providers to improve transit service in the Santa Ynez Valley.

Action CIRC-SYV-5.2: The County shall coordinate with Caltrans to incorporate park-and-ride facilities (including bike lockers, transit stops and benches) near planned highway interchange improvement projects.

Policy CIRC-SYV-6: The County shall encourage Caltrans to accommodate planned bicycle facilities in the design and construction of new highway overpasses and/or widening of existing highways and overpasses.

Action CIRC-SYV-6.2: When updating the Bike Master Plan, the County shall work with Caltrans and Public Works to improve safety on the areas highways and roadways for recreational as well as commuter bicyclists.

Action CIRC-SYV-6.3: The County shall focus attention on improving bikeways within the townships near schools and recreation areas, and consider the safety and feasibility of extending a Class II bike lane on Highway 246 east of the Santa Ynez Valley High School.

Policy CIRC-SYV-12: Development shall be sited and designed to provide maximum access to non-motor vehicle forms of transportation, including well designed walkways, paths and trails between residential development and adjacent and nearby commercial uses and employment centers, where feasible.

The following mitigation measures are required to reduce the contribution of GHGs resulting from development under the Plan:

AQ-7.1 Construction Phase Mitigation to Reduce Fuel Usage and Greenhouse Gases. The County shall incorporate the following development standard into the Santa Ynez Valley Community Plan:

DevStd GHG-SYV-x.x: Upon application for grading permits for discretionary projects, the applicant shall submit grading plans, the proposed rate of material movement and a construction equipment schedule to the APCD. In addition, the applicant shall implement the following measures where feasible to mitigate equipment emissions:

- All construction equipment and portable engines shall be properly maintained and tuned according to manufacturer's specifications;
- All off-road and portable diesel powered equipment, including but not limited to bulldozers, graders, cranes, loaders, scrapers, backhoes, generator sets, compressors, auxiliary power units, shall be fueled exclusively with CARB-certified motor vehicle diesel fuel;
- The applicant shall, at a minimum, use diesel construction equipment meeting the California Air Resources Board's Tier 1 emission standards for off-road heavy-duty diesel engines.



Equipment meeting Tier 2 or higher emission standards should be used to the maximum extent feasible.

- All on and off-road diesel equipment shall not be allowed to idle for more than 5 minutes. Signs shall be posted in the designated queuing areas to remind drivers and operators of the 5 minute idling limit;
- The applicant shall electrify equipment where feasible;
- The applicant shall substitute gasoline-powered for diesel-powered equipment where feasible;
- The applicant shall use alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel, where feasible; and
- The applicant shall apply Best Available Control Technology (CBACT) as determined by the APCD.
- Recycle/Reuse demolished construction material.

Plan Requirements and Timing. The applicant shall provide the grading amounts and schedule to the APCD Planning Division at least 3 months prior to the start of construction, at which time the APCD will define the appropriate level of BACT for the project. The application of all BACT features shall occur prior to project construction. These measures shall be shown on all grading and construction plans prior to issuance of construction permits. Compliance with these measures shall be included as bid specifications submitted to contractors. **Monitoring.** The applicant shall provide the APCD with proof that the above listed measures, as well as those required by the APCD upon review of grading plans, have been implemented prior to the start of the project's construction activity. The grading inspector shall perform periodic site inspections.

AQ-7.2 Operational Phase Mitigation to Reduce Fuel Usage and thus Greenhouse Gases. The County shall incorporate the following development standard into the Santa Ynez Valley Community Plan:

DevStd GHG-SYV-x.x: The following energy efficiency and green building techniques shall be implemented for discretionary projects where feasible:

- The applicant shall increase building energy efficiency ratings by at least 20% above what is required by Title 24 requirements (CAPCOA MM E-6). Potential energy consumption reduction measures include, but are not limited to:
 - Using roof material with a solar reflectance value meeting the EPA/DOE Energy Star® rating to reduce summer cooling needs and/or installing photovoltaic roof tiles (CAPCOA MM E-4, CAPCOA MM-13);



- Using high efficiency gas or solar water heaters (CAPCOA MM E-14);
 - Using built-in energy efficient appliances (CAPCOA MM E-16);
 - Installing double-paned windows;
 - Installing door sweeps and weather stripping if more efficient doors and windows are not available;
 - Installing low energy interior lighting;
 - Using low energy street lights (i.e. sodium); and
 - Installing high efficiency or gas space heating (CAPCOA, MS G-9).
- Possible additional Green Building techniques include:
 - Consideration of the siting of proposed buildings to eliminate or minimize the development's heating and cooling needs (e.g., solar orientation) (CAPCOA MM E-7).
 - Install solar systems to reduce energy needs (e.g., solar panels).
 - Plant native, drought resistant landscaping (CAPCOA MM D-17).
 - Use locally-produced building materials (CAPCOA MM C-3).
 - Use renewable or reclaimed building materials. (CAPCOA MM C-4)
 - Use materials which are resource efficient, recycled, with long life cycles and manufactured in an environmentally friendly way (CAPCOA MM E-17).

Plan Requirements and Timing. The applicant shall incorporate the listed provisions into building and improvement development plans or shall submit proof of infeasibility prior to issuance of grading permits. **Monitoring.** Planning and Building shall site inspect to ensure development is in accordance with approved plans prior to occupancy clearance.

AQ-7.3 Transportation Emissions. To further offset greenhouse gas (GHG) emissions, the County shall incorporate the following policies and action into the Community Plan :

Policy GHG-SYV-x: Coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where signals are installed, require the use of Light Emitting Diode (LED) traffic lights (OPR Energy Conservation Policies and Actions GHG Reduction Measure #4).

Policy GHG-SYV-x: Specific limits on idling time for commercial vehicles, including delivery and construction vehicles, shall be set for projects proposing new commercial development. (OPR Land Use and Transportation GHG Reduction Measure #7)



Policy GHG-SYV-x: Remove obstacles to the development of necessary infrastructure to encourage the use of alternative fuel vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations) (CAPCOA MM E-11).

Action GHG-SYV-x.x: Develop transportation policies that give funding preference to public transit.

Action GHG-SYV-x.x: Provide public education and publicity about public transportation services (CAPCOA Ms G-4).

Plan Requirements and Timing. The County shall incorporate the above transportation-related measures into the Final Community Plan. **Monitoring:** Planning and Development shall review and approve the policy prior to adoption of the Final Santa Ynez Valley Community Plan.

AQ-7.4 Solar Funding Program. The County shall incorporate the following action item into the Santa Ynez Valley Community Plan:

ACTION GHG-SYV-x.x: The County shall pursue the feasibility of establishing a Sustainable Energy Financing District to allow property owners to install solar systems and make other energy efficiency improvements to buildings and pay for the cost as a long-term assessment on their property tax bills. The County shall consult with other local jurisdictions and encourage multi-jurisdiction participation in order to maximize financing efficiencies.

Plan Requirements and Timing: This policy would be included as a new policy into the Final Santa Ynez Valley Community Plan. **Monitoring:** Planning and Development shall review and approve the policy prior to adoption of the Final Santa Ynez Valley Community Plan.

AQ-7.5 Solar Energy Systems in New Construction. The County shall incorporate the following development standard into the Santa Ynez Valley Community Plan:

DevStd GHG-SYV-x.x: For all new residential subdivisions of five or more lots, new multi-family development projects of five or more units, and new commercial or mixed-use development exceeding 5,000 square feet, solar energy systems that result in a 20% or more reduction in electrical or other energy needs are encouraged. All such projects shall undergo BAR review.

Plan Requirements and Timing: This development standard would be included as a new standard in the Final Santa Ynez Valley Community Plan. **Monitoring:** Planning and Development shall



review and approve the development standard prior to adoption of the Final Santa Ynez Valley Community Plan.

AQ-7.6 Greenhouse Gas Emissions Reduction. The County shall incorporate the following policy into the Santa Ynez Valley Community Plan to reduce GHG emissions of individual projects under the Community Plan:

POLICY GHG-SYV-x: The County shall require, unless economically infeasible, all future projects to incorporate the following Green House Gas reduction measures to the maximum extent feasible:

- Recycle/Reuse demolished construction material. Use locally made building materials for construction of the project and associated infrastructure.
- Execute an Energy Savings Performance Contract with a private entity to fund renewable energy improvements in existing and new developments in exchange for a share of energy savings over a period of time (OPR Energy Conservation Policies and Actions GHG Reduction Measure #7).
- Use drought resistant native trees, trees with low emissions 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 admit summer sun; evergreen plantings on the north side will slow cold winter winds; constructing a natural planted channel to funnel summer cooling breezes into the house. Neighborhood CCRs not requiring that front and side yards of single family homes be planted with turf grass. Vegetable gardens, bunch grass, and low-water landscaping shall also be permitted, or even encouraged.
- Unless the parcel precludes reasonable development, orient 75% or more of homes and/or buildings to face either north or south (within 30° of N/S). Building design includes roof overhangs that are sufficient to block the high summer sun, but not the lower winter sun, from penetrating south facing windows.
- Include in new buildings facilities to support the use of low/zero carbon fueled vehicles, such as the charging of electric vehicles from green electricity sources (OPR Energy Conservation Policies and Actions GHG Reduction Measure #2).

Plan Requirements and Timing: This policy would be included as a new policy in the Final Santa Ynez Valley Community Plan.

Monitoring: Planning and Development shall review and approve the policy prior to adoption of the Final Santa Ynez Valley Community Plan.



AQ-7.7 LEED Building Construction. The County shall incorporate the following new policy into the Santa Ynez Valley Community Plan:

POLICY GHG-SYV-x: The County shall encourage public and private development projects to construct LEED (Leadership in Energy and Environmental Design) certified buildings. Projects seeking LEED certification shall benefit from expedited project review and permitting, and reduced application fees (OPR Green Buildings GHG Reduction Measure #1).

Plan Requirements and Timing: This policy would be included as a new policy in the Final Santa Ynez Valley Community Plan.

Monitoring: Planning and Development shall review and approve the policy prior to adoption of the Final Santa Ynez Valley Community Plan.

Proposed mitigation measures AQ-7.5, -7.6, and -7.7 are aimed at building standards to minimize energy consumption. None of these standards would have the potential to create significant secondary effects and, rather, would be expected to generally reduce or minimize the environmental effects of development in all issue areas. While these measures may increase construction and hence housing costs, such economic or social effects are not treated as significant effects on the environment when such economic effects do not result in physical impacts on the environment (CEQA Guidelines Section 15131). It is not anticipated that these types of projects would create significant secondary effects.

Significance After Mitigation

In the absence of adopted thresholds of significance for greenhouse gas emissions, the above mitigation measures would reduce future air pollutant emissions to the extent feasible, thereby resulting in substantial decreases in the total amount of GHG emissions associated with development under the proposed Plan. While this EIR quantitatively measures the climate change emissions, there are no accepted methodologies or standards by which to determine the impacts of the cumulative emission impacts of all potential sources of air emissions in the SYV vicinity. Therefore, the potential cumulative impacts of climate change air emissions are too speculative for evaluation because this particular impact is too speculative. Because quantitative thresholds have not been established at this time and the proposed measures would reduce GHG emissions to the extent feasible, impacts are not considered significant after mitigation.

