

## 4.2 AIR QUALITY

### 4.2.1 Setting

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

About 75 percent of the County's population and a corresponding portion of the commercial and industrial facilities are located within the Coastal Plateau. Because of higher population density and closer spacing of urban areas, emissions of air pollutants per unit area are generally higher in this region than in other regions of the County.

The Upper Salinas River Valley, located in the northern one-third of the county, houses roughly 25 percent of the County's population. Historically, this region has experienced the highest ozone and particulate levels in the County. Transport of ozone precursors from the Coastal Plateau and from the San Joaquin Valley may contribute to this condition.

The East County Plain is the largest region by land area. However, less than one percent of the County population resides there. Dry land farming and unpaved roads in this region contribute to County totals for particulate emissions, but these emissions rarely affect other regions of the County.

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

In spring and summer months, when the Pacific High attains its greatest strength, onshore winds from the northwest generally prevail during the day. At night, as the sea breeze dies, weak drainage winds flow down the coastal mountains and valleys to form a light, easterly land breeze. In the fall, onshore surface winds decline and the marine layer grows shallow, allowing an occasional reversal to a weak offshore flow. This, along with the diurnal alteration of land-sea breeze circulation, can sometimes produce a "sloshing" effect. Under these conditions, pollutants may accumulate over the ocean for a period of one or more days and are subsequently carried back onshore with the return of the sea breeze. Strong inversions can form at this time, trapping pollutants near the surface.

This effect is intensified when the Pacific High weakens or moves inland to the east. This may produce a "Santa Ana" condition in which air, often pollutant-laden, is transported into the County from the east and southeast. This can occur over a period of several days until the



high-pressure system returns to its normal location, breaking the pattern. The breakup of this condition may result in relatively stagnant conditions and a buildup of pollutants offshore. The onset of the typical daytime sea breeze can bring these pollutants back onshore, where they combine with local emissions to cause high pollutant concentrations. Not all occurrences of the “post Santa Ana” condition lead to high ambient pollutant levels, but it does play an important role in the air pollution meteorology of the County.

**b. Regulatory Framework.** 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 (USEPA) is the federal agency designated to administer air quality regulation, while ARB is the state equivalent under the California Environmental Protection Agency (CalEPA). Local control in air quality management is provided by the ARB through multi-county and county-level Air Pollution Control Districts (APCDs). The ARB establishes statewide air quality standards and is responsible for the control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. The ARB has established 15 air basins statewide. San Luis Obispo County is located in the SCCAB, which is under the jurisdiction of the San Luis Obispo Air Pollution Control District (APCD).

Federal and state standards have been established for six criteria pollutants, including ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulates less than 10 and 2.5 microns in diameter (PM<sub>10</sub> and PM<sub>2.5</sub>), and lead (Pb) (refer to Table 4.2-1). California air quality standards are identical to or stricter than federal standards for all criteria pollutants. Table 4.2-1 illustrates the current Federal and State Ambient Air Quality Standards.

**Table 4.2-1: Current Federal and State Ambient Air Quality Standards**

Pollutant	Federal Standard	California Standard
Ozone	0.075 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.070 ppm (8-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) 0.03 ppm (annual avg)
Sulfur Dioxide	0.03 ppm (annual avg) 0.14 ppm (24-hr avg) 0.5 ppm (3-hr avg)	0.04 ppm (24-hr avg) 0.25 ppm (1-hr avg)
Lead	1.5 µg/m <sup>3</sup> (calendar quarter)	1.5 µg/m <sup>3</sup> (30-day avg)
Particulate Matter (PM <sub>10</sub> )	150 µg/m <sup>3</sup> (24-hr avg)	20 µg/m <sup>3</sup> (annual avg) 50 µg/m <sup>3</sup> (24-hr avg)
Particulate Matter (PM <sub>2.5</sub> )	15 µg/m <sup>3</sup> (annual avg) 35 µg/m <sup>3</sup> (24-hr avg)	12 µg/m <sup>3</sup> (annual avg)

ppm= parts per million

µg/m<sup>3</sup> = micrograms per cubic meter

Source: California Air Resources Board, <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>, September 2, 2010.



**c. Current Ambient Air Quality.** The County's air quality is measured by a network of nine ambient air quality monitoring stations: Atascadero (Lewis Avenue), Carrizo Plains, Grover City (Lesage Drive), Morro Bay, Nipomo Regional Park, Nipomo (Guadalupe Road), Paso Robles (Santa Fe Avenue), and San Luis Obispo (Marsh Street and 3320 South Higuera Street). At these monitoring stations, information is collected 24 hours per day, seven days per week, on the ambient levels of pollutants, including ozone (O<sub>3</sub>), particulate matter (PM<sub>10</sub>), nitrogen oxides (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>), and carbon monoxide (CO).

Between 2007 and 2009, these monitoring stations measured countywide exceedances of the state hourly ozone (eight days in 2008) and the state 8-hour ozone standard (45 days in 2007, 72 days in 2008, and 28 days in 2009). The County also experienced exceedances of the federal 8-hour standard during this time, exceeding the federal 8-hour standard 18 days in 2007, 43 days in 2008, and eight days in 2009. PM<sub>10</sub> is not monitored on a countywide basis. However, the monitoring station with the most exceedances of the PM<sub>10</sub> standard between 2007 and 2009 was the Nipomo (Guadalupe Road) station, which exceeded the state standard eight days in 2007, six days in 2008, and 12 days in 2009.

On a regional basis, ozone is the pollutant of greatest concern in the county, particularly within the coastal plateau. Ozone is a secondary pollutant, formed in the atmosphere by complex photochemical reactions involving precursor pollutants and sunlight. The amount of ozone formed is dependant upon both the ambient concentration of chemical precursors and the intensity and duration of sunlight. Consequently, ambient ozone concentration tends to vary seasonally with the weather. Reactive Organic Gases (ROG), also called Reactive Hydrocarbons (RHC), and Nitrogen Oxides (NO<sub>x</sub>) are the primary precursors to ozone formation. NO<sub>x</sub> emissions result primarily from the combustion of fossil fuels; ROG emissions are also generated by fossil fuel combustion and through the evaporation of petroleum products. Emissions of ROG and NO<sub>x</sub> are fairly equally divided between mobile and stationary sources, with the Dynergy Morro Bay power plant being the largest, single stationary source of NO<sub>x</sub> emissions in the County. Automobiles and electrical generation produce the majority of NO<sub>x</sub> emissions.

Local concentrations of inert (non-reactive) pollutants such as Carbon Monoxide (CO) ozone, and PM<sub>10</sub> are primarily influenced by nearby sources of emissions, and thus, vary considerably between monitoring stations. SO<sub>2</sub> emissions are mainly concentrated around areas where large quantities of fossil fuels are either burned in electrical production or petroleum products are refined. SO<sub>2</sub> levels on the Nipomo Mesa and the Dynergy energy facility in Morro Bay are a good example of this.

**d. Air Quality Management.** Under state law, the APCD is required to prepare an overall plan for air quality improvement for the SCCAB, known as the Clean Air Plan (CAP). The most recent CAP was prepared in 2001. The 2001 CAP is the third update to the original 1991 CAP, adopted in 1992. The CAP is intended to bring the county into attainment of the State ozone standard within a three year timeframe through a comprehensive set of control measures designed to reduce ozone precursor emissions from a wide variety of stationary and mobile sources.



**e. 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. The majority of sensitive receptor locations are therefore residences, schools, and hospitals.

#### 4.2.2 Impact Analysis

**a. Methodology and Significance Thresholds.** This analysis of air quality issues follows the guidance and methodologies recommended for program-level analyses in the APCD's *CEQA Air Quality Handbook* (December, 2009). According to the APCD, program-level environmental review does not require a quantitative air emissions analysis at the project scale. Rather, a qualitative analysis of the air quality impacts should be conducted based upon criteria such as prevention of urban sprawl and reduced dependence on automobiles. A finding of significant impacts can be determined qualitatively by comparing consistency of the project with the Transportation and Land Use Planning Strategies outlined in the District's Clean Air Plan (CAP).

CAP consistency impacts are determined based on evaluation of the following questions:

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

If the answer to all of the above questions is yes, then the proposed project or plan is consistent with the CAP. If the answer to any one of the questions is no, then the emissions reductions projected in the CAP may not be achieved, which could delay or preclude attainment of the state ozone standard. This would be inconsistent with the Clean Air Plan.

The following thresholds are based on the County's Initial Study and Initial Study checklist and Appendix G of the State CEQA Guidelines. Air quality impacts would be significant if development facilitated by the proposed program would result in any of the following:

- *Violate any air quality standard or contribute substantially to an existing or projected air quality violation.* Refer to Impacts AQ-1 and AQ-2, below.
- *Expose sensitive receptors to substantial pollutant concentrations.* Refer to Impact AQ-1, below.
- *Create objectionable odors affecting a substantial number of people.* Refer to Section 4.13: Effects Found Not to be Significant.
- *Conflict with or obstruct implementation of the District's Clean Air Plan.* Refer to Impact AQ-3, below.
- *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).* Refer to discussion on cumulative air quality impacts, below.



**b. Project Impacts and Mitigation Measures.**

**Impact AQ-1** Construction activities resulting from the proposed Agricultural Cluster Subdivision Program would generate ozone precursors (ROG + NO<sub>x</sub>) and fugitive particulate matter, and would potentially result in human exposure to Naturally Occurring Asbestos (NOA), a toxic air contaminant. These emissions would represent a substantial reduction from the potential emissions associated with development potential under the existing ordinance. Impacts compared to the existing ordinance are therefore Class III, *less than significant*. However, compared to existing conditions, development potential under the proposed ordinance revisions would generate construction-phase emissions. Impacts compared to existing conditions would therefore be Class II, *significant but mitigable*.

**Compared to Development Potential under the Existing Ordinance**

The following proposed program revisions would reduce overall development potential in agricultural areas of the county: elimination of minor agricultural clusters, elimination of agricultural cluster subdivision as an option in the RL category, reducing the distance to URLs for agricultural cluster eligibility, elimination of agricultural cluster development associated with properties under Williamson Act contract, and elimination of the density bonus. The result of these revisions would be that 4,163 fewer residential units could be constructed.

The program would also introduce the Agricultural Cluster Subdivision Program into the Coastal Zone; however, the coastal version of the program would only authorize the reconfiguration of existing underlying lots into residential cluster lots, essentially replacing current lot line adjustment procedures with more restrictive agricultural clustering standards.

As shown in Table 4.2-2, the revised program would reduce construction-related air pollutants by 82 to 96 percent when compared to development potential under the existing program. Therefore fewer short-term air quality impacts resulting from grading and excavation would be generated. Impacts would be Class III, *less than significant*.

**Table 4.2-2: Estimated Reduction in Construction-phase Emissions**

Pollutant	Comparison of Total Construction Emissions (lbs/day)		
	Existing	Proposed	Reduction
Reactive Organic Gases (ROG)	7,008.19	650.94	6,357.25 (90.7%)
Nitrous Oxides (NO <sub>x</sub> )	1,457.67	270.03	1,187.64 (81.5%)
Carbon Monoxide (CO)	1,449.8	181.63	1,268.17 (87.5%)
Sulfur Dioxide (SO <sub>2</sub> )	2.34	0.09	2.25 (96.2%)
Particulate Matter < 10 microns (PM <sub>10</sub> )	7,673.81	1,393.59	6,280.22 (81.8%)
Particulate Matter <2.5 microns (PM <sub>2.5</sub> )	1,597.49	291.09	1,306.40 (81.8%)
Carbon Dioxide (CO <sub>2</sub> )	195,532.40	32,371.21	163,161.19 (83.4%)

Source: URBEMIS 2007 (version9.2.4). Refer to Appendix E: URBEMIS Output for Air Quality Analysis.



## Compared to Existing Conditions

### *Construction Emissions*

Compared to existing conditions, the proposed Agricultural Cluster Subdivision Program would allow for the development of up to 418 new residences in agricultural areas within five miles of the URLs of Arroyo Grande, Atascadero, San Luis Obispo, San Miguel, Nipomo, Paso Robles, and Templeton.

The Agricultural Cluster Subdivision Program would also allow for the reconfiguration of legally established underlying lots in eligible areas of the Coastal Zone (rural North Coast and Estero planning areas, excluding Hearst Ranch) to accommodate residential development. To date, 320 legal underlying lots have been identified in these areas. However, since many of these lots could already be developed in their current configuration with fewer restrictions than would be required under the proposed amendments, only a small percentage of the eligible lots would be likely to participate in the program. Nonetheless, any future reconfiguration would result in the construction of new single family residences in the Coastal Zone.

Construction of additional units would cause temporary, short-term emissions of various air pollutants. These impacts would occur through dust generated by on-site grading activities for construction of roads, driveways, and residential and commercial building foundations, and as a result of heavy construction vehicle emissions. NO<sub>x</sub> and ROG would be emitted by the operation of construction equipment. Diesel combustion from construction equipment or trucks would generate the emission of diesel particulate matter (DPM), which may contain sulfates and silicates in addition to particulate matter (e.g. PM<sub>10</sub> down to PM<sub>0.1</sub>). Fugitive dust (PM<sub>10</sub>) would be emitted by activities that disturb the soil.

The amount of construction activity that would occur at any given time over the life of the proposed ordinance is not known. Therefore, it is not possible to accurately quantify the anticipated maximum quarterly construction emissions according to standard SLOAPCD methodologies. Table 4.2-3 summarizes quarterly emissions associated with construction of 418 residences over a 20-year build-out period (i.e. assuming 21 new units would be constructed each year for 20 years).

**Table 4.2-3: Construction Emissions Associated with Agricultural Cluster Subdivision Development Potential (418 new units)**

<b>Pollutant</b>	<b>Total Emissions 20-year build-out (tons)</b>	<b>Quarterly SLOAPCD Thresholds (tons/quarter)</b>
Ozone Precursors (ROG +NO <sub>x</sub> combined)	2.31	2.5
Fugitive Particulate Matter (PM <sub>10</sub> )	0.65	2.5
Diesel Particulate Matter (DPM) <sup>1</sup>	0.11	0.13

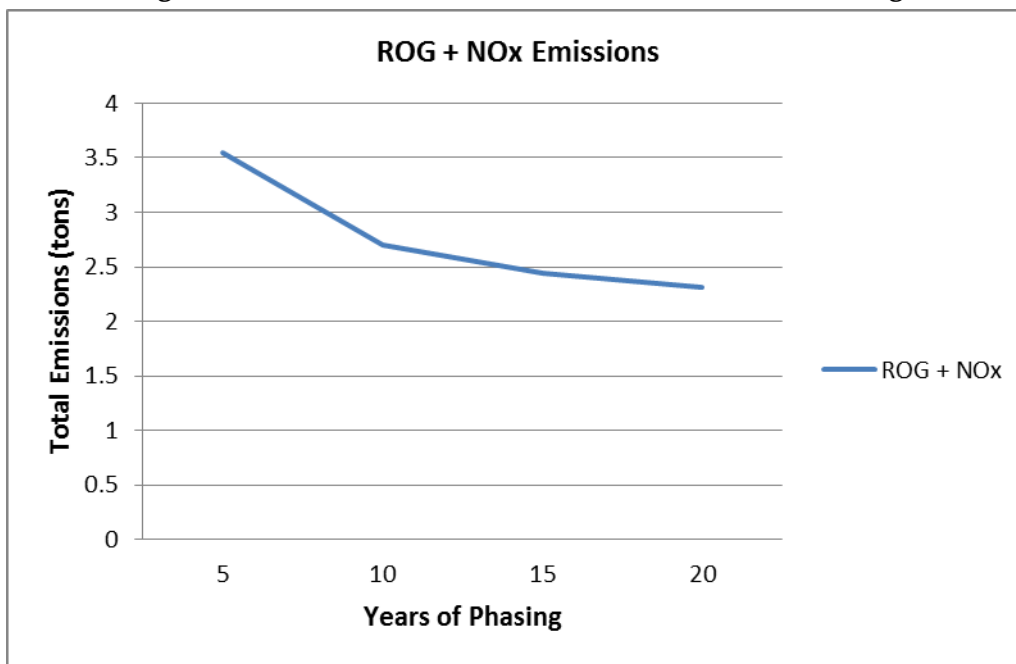
Source: URBEMIS 2007 (version 9.2.4). Refer to Appendix E: URBEMIS Output for Air Quality Analysis.



Table 4.2-3, above, illustrates how the residential development resulting from the Agricultural Cluster Subdivision Program is not anticipated to exceed construction-phase emission thresholds for criteria pollutants when cluster development is phased over 20 years.

As shown in Figure 4.2-1, below, ozone precursor emissions could exceed the 2.5 tons/quarter threshold if build-out is reached in less than 14 years, such that 30 or more units are constructed in a single year. However, given the restrictive provisions of the proposed program and the elimination of the density bonus, it is unlikely for the program to reach build-out in 14 years or less. Even under the existing ordinance, which includes up to a 100 percent density bonus for major cluster projects, only 367 units were approved in the past 25 years, an average of less than 15 new units per year.

Figure 4.2-1: Ozone Precursors with Construction Phasing



The County is still currently in non-attainment for the state standard for ozone precursors and fugitive particulate matter. As a result, even under a 20-year build-out scenario, program impacts with respect to these pollutants would be considered cumulatively significant. Implementation of the mitigation measures listed below will ensure that each project's contribution towards cumulative impacts will be reduced below a level of significance (refer to Section 4.2.2(c) for more discussion on cumulative impacts). Impacts would therefore be Class II, *significant but mitigable*.

#### Naturally Occurring Asbestos (NOA)

Grading and site preparation activities associated with individual agricultural cluster projects could occur in areas containing NOA. Determination if asbestos is present, and if so, compliance with all requirements outlined in the CARB's *Air Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations* in addition to the *National Emissions Standards for Hazardous Pollutants*, would reduce impacts from NOA to less than significant levels.



*Toxic Diesel Emissions during Construction*

Construction activities resulting from the proposed program would generate diesel particulate matter. In particulate, grading and site preparation activities would generate the greatest intensity of diesel emissions. Since diesel particulate matter is listed as a Toxic Air Contaminant by the CARB (with no identified threshold) the amount of diesel exhaust anticipated to be produced by the aforementioned diesel equipment, as well as the diesel haul trucks during construction was calculated and is displayed in the column labeled Fugitive Particulate Matter (refer to Table 4.2-3). Construction emissions from heavy-duty diesel exhaust were calculated using the APCD's *CEQA handbook*.

At the present time, it is unknown whether or not future agricultural cluster subdivision projects would be located near sensitive receptors, or what type of construction equipment they would require. Nevertheless, implementation of the construction phase mitigation measures described below would be anticipated to reduce impacts to less than significant levels. Future projects would also be reviewed by SLOAPCD on a case-by-case basis. Depending on the construction equipment that would be required for such projects and their proximity to sensitive receptors (e.g. existing residences and schools), they could be required to implement additional mitigation measures.

Mitigation Measures. Although the proposed Agricultural Cluster Subdivision Program would result in fewer impacts compared to potential build-out under the existing agricultural cluster subdivision ordinance, CEQA requires that potential impacts be compared to the existing baseline physical conditions. As noted above, the proposed program would result in potentially significant impacts relative to ozone precursors (ROG and NO<sub>x</sub>) and would contribute to cumulative impacts relative to PM<sub>10</sub> emissions.

The following mitigation measures are required to reduce ozone precursor and diesel particulate matter emissions:

- AQ-1(a) Construction Phase Mitigation.** Individual agricultural cluster subdivision projects which could result in the construction of more than 30 units per year shall be subject to the following mitigation measures:
- Maintain all construction equipment in proper tune according to manufacturer's specifications;
  - Fuel all off-road and portable diesel powered equipment with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road);
  - Use diesel construction equipment meeting ARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State off-Road Regulation;
  - Use on-road heavy-duty trucks that meet the ARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;
  - Construction or trucking companies with fleets that do not have engines in their fleet that meet the engine standards identified in



the above two measures (e.g. captive or NOx exempt area fleets) may be eligible by proving alternative compliance;

- All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit;
- Diesel idling within 1,000 feet of sensitive receptors is not permitted;
- Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
- Electrify equipment when feasible;
- Substitute gasoline-powered in place of diesel-powered equipment, where feasible;
- Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel; and
- If the estimated ozone precursor emissions from the actual fleet for a given construction phase are expected to exceed the APCD threshold of significance after the standard mitigation measures are factored into the estimation, then BACT needs to be implemented to further reduce these impacts.

The following mitigation measures are required to reduce the proposed program's contribution to cumulative impacts relative to PM<sub>10</sub> emissions:

**AQ-1(b) Dust Control.** The following measures shall be implemented to reduce PM<sub>10</sub> emissions during construction:

- Reduce the amount of the disturbed area where possible;
- Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Water shall be applied as soon as possible whenever wind speeds exceed 15 miles per hour. Reclaimed (nonpotable) water should be used whenever possible;
- All dirt-stock-pile areas shall be sprayed daily as needed;
- Permanent dust control measures shall be identified in the approved project revegetation and landscape plans and implemented as soon as possible following completion of any soil disturbing activities;
- Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading shall be sown with a fast-germinating native grass seed and watered until vegetation is established;
- All disturbed soil areas not subject to revegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD;



- All roadways, driveways, sidewalks, etc., to be paved shall be completed as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used;
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;
- All trucks hauling dirt, sand, soil or other loose materials shall be covered or shall maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114;
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site; and
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used where feasible.

The above measures shall be shown on development plans.

**Plan Requirements and Timing.** Conditions shall be adhered to throughout all grading and construction periods for all project components. Prior to issuance of grading permits, applicants shall include, as a note on a separate informational sheet to be recorded with any map, the aforementioned dust control requirements. All requirements shall be shown on grading and building plans. **Monitoring.** Planning and Building inspectors shall perform periodic spot checks during grading and construction. APCD inspectors shall respond to nuisance complaints.

- AQ-1(c) Cover Stockpiled Soils.** If importation, exportation, or stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting material shall be tarped from the point of origin.

**Plan Requirements and Timing.** Conditions shall be adhered to throughout all grading and construction periods for all project components. **Monitoring.** Planning and Building inspectors shall perform periodic spot checks during grading and construction. APCD inspectors shall respond to nuisance complaints.

- AQ-1(d) Dust Control Monitor.** The contractor or builder shall designate a person or persons to monitor the dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20% opacity, and to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.



**Plan Requirements and Timing.** The name and telephone number of dust monitor(s) shall be provided to the APCD Compliance Division prior to the start of any grading, earthwork, or demolition. The dust monitor shall be designated prior to approval of a Land Use Permit.

**Monitoring.** Planning and Building shall contact the designated monitor as necessary to ensure compliance with dust control measures.

Residual Impacts. When compared to development potential under the existing ordinance, impacts would be Class III, *less than significant*. Nonetheless, the Agricultural Cluster Subdivision Program would result in ozone precursor (ROG and NO<sub>x</sub>) and diesel particulate matter emissions. Although these emissions are anticipated to fall below applicable SLOAPCD thresholds, they would incrementally contribute to cumulatively significant construction-phase air quality impacts. However, implementation of the mitigation measures described above would reduce these impacts to less than significant levels.

The program itself would not exceed APCD thresholds for PM<sub>10</sub>. Because the APCD is in non-attainment for PM<sub>10</sub>, however, the project's incremental contribution to cumulative PM<sub>10</sub> emissions would be potentially significant. The mitigation measures described above would reduce PM<sub>10</sub> emissions to the extent feasible. In addition, construction activities would be temporary and would not result in long term air quality impacts. Therefore, implementation of the above mitigation measures would reduce impacts associated with PM<sub>10</sub> emissions to a less than significant level. Construction-phase air quality impacts would therefore be Class II, *significant but mitigable*.

**Impact AQ-2**      **Development under the proposed Agricultural Cluster Subdivision Program would generate long-term operational emissions. These emissions would represent a substantial reduction from the potential emissions associated with development potential under the existing ordinance. Impacts compared to the existing ordinance are therefore Class III, *less than significant*. However, compared to existing conditions, long-term operational emissions under the program could exceed SLOAPCD's 25 lbs/day threshold for these emissions. Impacts compared to existing conditions would therefore be Class I, *significant and unavoidable*.**

### **Compared to Development Potential under the Existing Ordinance**

As described in Impact AQ-1, several proposed program revisions would reduce overall development potential in agricultural areas of the county. The result of these revisions would be that 4,163 fewer residential units could be constructed. As shown in Table 4.2-4, below, the revised program would reduce long-term operational air pollutants by 95 to 96 percent when compared to development potential under the existing program. Therefore fewer long-term air quality impacts resulting from developed authorized under the program would be generated. Impacts would be Class III, *less than significant*.



**Table 4.2-4: Reduction in Operational Emissions**

Pollutant	Comparison of Total Operational Emissions (lbs/day)		
	Existing Program	Proposed Program	Reduction
Reactive Organic Gases (ROG)	529.64	26.35	503.29 (95.02%)
Nitrous Oxides (NO <sub>x</sub> )	747.94	30.58	717.36 (95.91%)
Carbon Monoxide (CO)	6,406.90	277.57	6,129.33 (95.67%)
Sulfur Dioxide (SO <sub>2</sub> )	4.85	0.18	4.67 (96.29%)
Particulate Matter < 10 microns (PM <sub>10</sub> )	980.80	35.86	944.94 (96.34%)
Particulate Matter <2.5 microns (PM <sub>2.5</sub> )	188.01	6.92	181.09 (96.32%)
Carbon Dioxide (CO <sub>2</sub> )	510,340.10	25,932.48	484,407.62 (94.92%)

Source: URBEMIS 2007 (version9.2.4). Refer to Appendix E: URBEMIS Output for Air Quality Analysis.

### Compared to Existing Conditions

Upon build-out under the Agricultural Cluster Subdivision Program, long-term operational impacts pertaining to ozone precursors and fugitive particulate matter would exceed SLOAPCD' thresholds, as described in Table 4.2-5, below. These emissions would primarily result from increased vehicle trips and residential energy usage. While no individual cluster project is anticipated to exceed SLOAPCD's thresholds for operational emissions<sup>1</sup>, build-out under the program could exceed SLOAPCD's thresholds for Ozone Precursors and Fugitive Particulate Matter (PM<sub>10</sub>).

**Table 4.2-5: Operational Emissions Associated with Total Agricultural Cluster Subdivision Development Potential**

Pollutant	Daily Operational Emissions at Build-out (lbs/day)	SLOAPCD Thresholds (lbs/day)
Ozone Precursors (ROG +NO <sub>x</sub> combined)	56.93	25
Fugitive Particulate Matter (PM <sub>10</sub> )	35.86	25
Carbon Monoxide (CO)	277.57	550

Source: URBEMIS 2007 (version9.2.4). Refer to Appendix E: URBEMIS Output for Air Quality Analysis.

<sup>1</sup> The largest agricultural cluster project approved to date consisted of 111 residential units, roughly 25 percent of the buildout potential under the proposed program. Based on the modeling assumptions used in this analysis, a project of this size would fall below the operational thresholds for ozone precursors and fugitive particulate matter.



Each agricultural cluster subdivision the department considers will be subject to review and comment by the Air Pollution Control District. The District will estimate operational emissions likely to be generated by each project. Based on these estimates, if the project is anticipated to exceed a threshold, mitigation is applied as specified in the *CEQA Air Quality Handbook*.

Mitigation Measures. Although the proposed Agricultural Cluster Subdivision Program would result in fewer impacts compared to potential build-out under the existing agricultural cluster subdivision ordinance, CEQA requires that potential impacts be compared to the existing baseline environmental conditions. As noted above, build-out under the program could exceed SLOAPCD's thresholds for Ozone Precursors and Fugitive Particulate Matter.

**AQ-2(a) Application of Standard Operational Mitigation.** Projects which individually do not exceed the 25 pound-per-day threshold for both ozone precursors (ROG and NO<sub>x</sub>) and fugitive particulate matter (PM<sub>10</sub>) do not require operational mitigation. Projects which exceed one or both of these thresholds shall have the following mitigation measures applied:

- Projects generating 25-29 lbs/day of ozone precursors or fugitive particulate matter shall select and implement at least **eight** of the mitigation measures listed in Table 3-5 of the Air Pollution Control District's 2009 *CEQA Air Quality Handbook*.
- Projects generating 30-34 lbs/day of ozone precursors or fugitive particulate matter shall select and implement at least **14** of the mitigation measures listed in Table 3-5 of the Air Pollution Control District's 2009 *CEQA Air Quality Handbook*.
- Projects generating 35-50 lbs/day of ozone precursors or fugitive particulate matter shall select and implement at least **18** of the mitigation measures listed in Table 3-5 of the Air Pollution Control District's 2009 *CEQA Air Quality Handbook*.
- Projects generating more than 50 lbs/day of ozone precursors or fugitive particulate matter shall implement **all feasible** mitigation measures listed in Table 3-5 of the Air Pollution Control District's 2009 *CEQA Air Quality Handbook*.

Residual Impacts. When compared to development potential under the existing ordinance, impacts would be Class III, *less than significant*. Nonetheless, the Agricultural Cluster Subdivision Program would result in long-term operational emissions. The County of San Luis Obispo is currently in non-attainment for the state standard for ozone precursors and fugitive particulate matter. Based on the analysis, agricultural cluster projects would be unlikely to exceed SLOAPCD's 25 lbs/day operational threshold; however, their incremental contribution to cumulative operational emissions would not be mitigated. Specifically, in the build-out scenario, the proposed Agricultural Cluster Subdivision Program would exceed SLOAPCD's 25 lbs/day operational threshold for criteria pollutants. Operational impacts would therefore remain Class I, *significant and unavoidable*



**Impact AQ-3**     **The proposed Agricultural Cluster Subdivision Program is consistent with all applicable provisions of the Clean Air Plan. Therefore impacts are anticipated to be Class III, less than significant.**

As described in Section 4.2.2(a), the Agricultural Cluster Subdivision Program would be considered consistent with the 2001 CAP if: (1) the population projections of the program are equal to or less than those used in the CAP; (2) the rate of increase in vehicle trips and mile traveled is less than or equal to the rate of population growth for the same area; and (3) all applicable land use and transportation control measures from the CAP have been included in the project to the maximum extent feasible.

### **Clean Air Plan Consistency**

*Population Projection Consistency.* As described in Impact AQ-1, several proposed program revisions would reduce overall development potential in agricultural areas of the county. The result of these revisions would be that 4,163 fewer residential units could be constructed. Based on an unincorporated countywide average of 2.318 residents per household,<sup>2</sup> this equates to approximately 9,650 fewer residents. This would represent a reduction in the population assumed for eligible parcels in the CAP. Therefore, the proposed Agricultural Cluster Subdivision Program would be consistent with CAP population projections, and would be consistent with this CAP consistency criterion.

*Vehicle Trip Rate of Increase and Miles Traveled.* As described in Impact AQ-1, the proposed Agricultural Cluster Subdivision Program would reduce development potential for agricultural cluster subdivisions from 4,582 single family residences to 418 single family residences. In addition, the proposed program revision would modify agricultural cluster eligibility criteria to include only parcels within five miles of certain urban reserve lines (URLs). This 91 percent net reduction in development potential and URL distance reduction would decrease vehicle trips and vehicle miles throughout the county. Because the Agricultural Cluster Subdivision Program would reduce vehicle trips and miles traveled, it would improve consistency with the CAP compared to development potential under the existing ordinance. The program would be consistent with this CAP consistency criterion.

*Implementation of Transportation Control Measures (TCMs).* The proposed Agricultural Cluster Subdivision Program does not incorporate TCMs. However, the program would reduce overall development potential and would modify agricultural cluster eligibility criteria to include only parcels within five miles of certain URLs, thereby reducing vehicle miles traveled when compared to build-out potential of the existing ordinance. The purpose of TCMs is to reduce vehicle use by promoting and facilitating the use of alternative transportation options. Although the proposed Agricultural Cluster Subdivision Program does not explicitly promote alternative transportation, it does reduce development potential and therefore reduces vehicle use.

---

<sup>2</sup> California Department of Finance. *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark*. Sacramento, California, May 2010.



As described in San Luis Obispo County's Resource Management System, the County will implement applicable transportation and land use planning strategies recommended in the CAP. According to CAP Land Use Management Strategy L-1:

- Cities and unincorporated communities should be developed at higher densities that reduce trips and travel distances and encourage the use of alternative forms of transportation.

*Consistency:* The proposed Agricultural Cluster Subdivision Program reduces the overall number of residential dwellings that could be constructed in rural areas. Under the current program, agricultural cluster subdivisions could be developed at a density as high as one residence per 10 acres<sup>3</sup>. The proposed program would reduce that overall density to one residence per 50 acres<sup>4</sup>. The result is a reduction in potential rural development, a reduction in the incentives to develop in the rural areas, and further implementation of the County's existing policies which seek to encourage development in existing urban areas rather than the undeveloped countryside.

- Urban growth should occur within the urban reserve lines of cities and unincorporated communities. Rural areas of the county should be maintained as open space, agricultural lands and very low density residential development (20 acre or larger parcel size).

*Consistency:* As specified above, the proposed program would allow residential development to occur in rural areas at an overall density of one residence per 50 acres. This is less than half the density identified in the Clean Air Plan as allowable for very low density rural residential development. Additionally, although the Agricultural Cluster Subdivision Program is designed to regulate residential development in agricultural areas, eligibility criteria relating to distance from urban reserve lines are proposed. The purpose of these criteria is to limit use of the program only to those areas within five road miles of existing urban areas.

- Local planning agencies should encourage transit use by planning neighborhoods and commercial centers at densities to allow for convenient access to and use of local and regional transit systems.

*Consistency:* This policy is focused on planning for a mix of uses and convenient access to alternative transportation in urban areas. The Agricultural Cluster Subdivision Program is generally applicable only to rural areas, where commercial development would be inappropriate and alternative transportation would be infeasible. As a result, this policy is not directly applicable to the Agricultural Cluster Subdivision Ordinance. When considered on a broad perspective, the proposed program will be in alignment with the intent of this policy, because it would reduce the overall number of residences that could be developed in rural areas and would focus agricultural cluster developments around existing urban areas. The result is a reduction in vehicle miles traveled.

---

<sup>3</sup> Assuming 100 percent density bonus, qualifying on a 20-acre minimum parcel size.

<sup>4</sup> Assuming no density bonus, qualifying on a 40-acre minimum parcel size (use test), 2.5 acre minimum cluster parcel size, and 95 percent open space preservation.



The nature of TCMs, which require a fundamental shift in conventional land use and transportation planning strategies, necessitates that they be implemented as part of comprehensive General Plan Updates, such as a community plan update, area plan update, or specific plan. Incorporating these strategies into single-focus ordinance updates is neither feasible nor desirable. The Agricultural Cluster Subdivision Program is not considered a comprehensive update, as it focuses on one type of rural residential development and does not address general land use and transportation trends and policies in urban areas.

Nonetheless, the Agricultural Cluster Subdivision Program would achieve the overarching goal of reducing the number of vehicle miles traveled. Therefore, TCMs would not be necessary to achieve the purpose of reducing vehicle use when compared to the existing ordinance. The proposed Agricultural Cluster Subdivision Program is therefore considered consistent with this CAP consistency criterion.

*Summary.* The proposed Agricultural Cluster Subdivision Program would be consistent with the CAP, which would be a Class III, *less than significant*, impact.

Mitigation Measures. The Agricultural Cluster Subdivision Program is consistent with the Clean Air Plan. Therefore, no mitigation measures are necessary.

Residual Impacts. Impacts would be Class III, *less than significant*.

**c. Cumulative Impacts.** This section describes the cumulative impacts of the proposed Agricultural Cluster Subdivision Program compared to development potential under both the existing ordinance and existing conditions. The geographic scope for the air quality cumulative analysis includes the county's unincorporated areas.

### **Compared to Development Potential under the Existing Ordinance**

When compared to development potential under the existing ordinance, the proposed amendments would reduce the number of residential cluster parcels that could potentially be created in the county from 4,582 to 418, a 91 percent reduction. As a result, the program would be anticipated to reduce emission of air pollutants by more than 80 percent at build-out. Additionally, because the program reduces residential density and requires that properties be located close to urban areas in order to qualify for development, the number of potential vehicle miles traveled at build-out is expected to be commensurately reduced. Although the program would introduce agricultural clustering provisions into the Coastal Zone, it would only allow for the reconfiguration of existing underlying lots, essentially replacing current lot line adjustment procedures with more restrictive agricultural clustering standards. As a result, this program is consistent with the Clean Air Plan and its related strategies, which seek to reduce rural development. Cumulative impacts are therefore anticipated to be Class III, *less than significant*.

### **Compared to Existing Conditions**

*Cumulative Construction Phase Impacts.* As described in Impact AQ-1, the proposed Agricultural Cluster Subdivision Program could lead to the construction of up to 418 new single family residences within five miles of the identified URLs, as well as additional



residences in the Coastal Zone. When considered together with the cumulative projects listed in Table 3.3-1, the proposed program's contribution to construction phase air quality impacts would be cumulatively considerable. For example, development authorized under the proposed amendments could be constructed during build-out of the 102 new residences proposed for the Laetitia agricultural cluster project. Although many of the projects approved under the program would not individually exceed the 2.5 tons-per-quarter threshold for ozone precursors (ROG and NOX) and fugitive particulate matter (PM10), they would incrementally contribute to the construction phase emissions resulting from the Laetitia agricultural cluster project and other construction activities in the area. However, with implementation of the mitigation measures described under Impact AQ-1, the program's incremental contribution to these emissions would be reduced to less than significant levels. Cumulative impacts related to construction phase emissions would therefore be Class II, *significant but mitigable*.

*Cumulative Operational Impacts.* As described in Impact AQ-1, the proposed Agricultural Cluster Subdivision Program could lead to the construction of up to 418 new single family residences within five miles of the identified URLs, as well as additional residences in the Coastal Zone. When considered together with the cumulative projects listed in Table 3.3-1, the proposed program's contribution to long-term operational impacts would be cumulatively considerable. Operational impacts occurring at build-out are expected to result in threshold exceedences for ozone precursors and diesel particulate matter. Implementation of Mitigation Measure AQ-2 would reduce these impacts to a less than significant level for individual projects exceeding SLOAPCD's 25 lbs/day threshold for Ozone Precursors and Fugitive Particulate Matter. However, since future agricultural cluster projects would be unlikely to individually exceed this threshold, their incremental contribution to cumulative operational air quality impacts would go unmitigated. Therefore, under build-out of the program, cumulative impacts would remain Class I, *significant and unavoidable*.



This page intentionally left blank.

