

CEQA Air Quality Handbook

**A GUIDE FOR ASSESSING
THE AIR QUALITY IMPACTS
FOR PROJECTS SUBJECT TO CEQA REVIEW**

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Air Pollution Control District
San Luis Obispo County

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LIST OF ACRONYMS

ACM	Asbestos Containing Material
ADT	Average Daily Trips
APCD	San Luis Obispo County Air Pollution Control District
APS	Auxiliary Power System
ARB	California Air Resources Board
ATCM	Air Toxics Control Measure
BACT	Best Available Control Technology for Construction Equipment
CAAA	1990 Clean Air Act Amendments
CAMP	Construction Activity Management Plan
CAP	Clean Air Plan for San Luis Obispo County
CAPCOA	California Air Pollution Control Officers Association
CEQA	California Environmental Quality Act
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
DEIR	Draft Environmental Impact Report
DOC	Diesel Oxidation Catalyst
DPM	Diesel Particulate Matter
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
GHG	Greenhouse Gases
HRA	Health Risk Assessment
ITE	Institute of Transportation Engineers
LNG	Liquid Natural Gas
NESHAP	National Emission Standard for Hazardous Air Pollutants
NOA	Naturally Occurring Asbestos
NOP	Notice of Preparation
NO _x	Oxides of Nitrogen
PM	Particulate Matter
PM _{2.5}	Particulate Matter (less than 2.5 µm)
PM ₁₀	Particulate Matter (less than 10 µm)
ROG	Reactive Organic Gases
SLO	San Luis Obispo
TAC	Toxic Air Contaminant
VDECS	Verified Diesel Emission Control Systems
VMT	Vehicle Miles Traveled

GLOSSARY

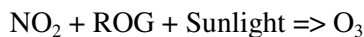
Climate Change: Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gases (GHGs), particularly those generated from the human production and use of fossil fuels.

Diverted Trips: Diverted linked trips, as defined by Institute of Transportation Engineers (ITE), are attracted from the traffic volume on a roadway within the vicinity of the generator but require a diversion from that roadway to another roadway to gain access to the site.

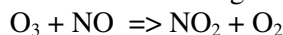
Fugitive Dust: Small particles which are entrained and suspended into the air by the wind or external disturbances. Fugitive dust typically originates over an area and not a specific point. Typical sources include unpaved or paved roads, construction sites, mining operations, disturbed soil and tilled agricultural areas.

Greenhouse Gas: The emissions that contribute to the climate change effect are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFC), chlorofluorocarbons (CFC) and sulfur hexafluoride (F₆S).

Ozone Precursors: Gaseous compounds needed to form ozone by the process of photochemistry. Photochemical air pollution (primarily ozone) is produced by the atmospheric reaction of organic substances, such as reactive organic gases (ROG) and nitrogen dioxide (NO₂) under the influence of sunlight.



During the summer, in areas with high emissions and high ozone concentrations, ozone concentrations are very dependent on the amount of solar radiation. Ozone levels typically peak in the late afternoon, at the end of the longest period of daily solar radiation. After the sun goes down, the chemical reaction between nitrous oxide and ozone begins to dominate and ozone usually decreases.



In some remote rural locations away from emission sources, ozone concentrations can remain high overnight because there are no NO sources to react with the existing ozone.

Ozone precursors are typically considered to be the combination of ROG + NO_x.

Particulate Matter: Small particles that become airborne and have the potential to cause adverse health impacts. There are three general size components: 1) PM or Total Suspended Particulate (TSP) which includes all airborne particles regardless of size or source; 2) PM₁₀ which includes airborne particles 10µm in size and smaller; and 3) PM_{2.5} or fine airborne particles 2.5µm and smaller.

Primary Trips: Trips made for the specific purpose of visiting the proposed facility.

Passby Trip: Trips made as an intermediate stop on the way from an origin to a destination without a route diversion.

Sensitive Receptors: Sensitive receptors are people that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). The location of sensitive receptors is needed to assess toxic impacts on public health.

Smart Growth: Smart or strategic growth is an urban planning and transportation theory that concentrates growth in the center of a city to avoid urban sprawl; and advocates compact, transit-oriented, walkable, bicycle-friendly land use, including neighborhood schools, complete streets, and mixed-use development with a range of housing choices.

Verified Diesel Emission Control Strategy: Diesel vehicle or equipment exhaust retrofits that have been verified by the California Air Resources Board (ARB) that provide specified diesel particulate emission reductions when implemented in compliance with the ARB executive order for the device (www.arb.ca.gov/diesel/verdev/verdev.htm).

**CEQA
Air Quality Handbook**

**GUIDE FOR ASSESSING THE AIR QUALITY IMPACTS
FOR PROJECTS SUBJECT TO CEQA REVIEW**

The purpose of this document is to assist lead agencies, planning consultants, and project proponents in assessing the potential air quality impacts from residential, commercial and industrial development. It is designed to provide uniform procedures for preparing the air quality analysis section of environmental documents for projects subject to the California Environmental Quality Act (CEQA). These guidelines define the criteria used by the San Luis Obispo County Air Pollution Control District (APCD or Air District) to determine when an air quality analysis is necessary, the type of analysis that should be performed, the significance of the impacts predicted by the analysis, and the mitigation measures needed to reduce the overall air quality impacts. The use of this document will simplify the process of evaluating and mitigating the potential air quality impacts from new development in San Luis Obispo County.

For further information on any of the topics covered in this handbook, review the APCD's website at www.slocleanair.org or contact us directly at (805) 781-5912.

1 PROJECTS REQUIRING AIR QUALITY REVIEW AND ANALYSIS

The Air District has permit authority over many "direct" sources of air contaminants, such as power plants, gasoline stations, dry cleaners and refineries. Indirect sources are contributors to air pollution and include facilities and land uses which may not emit a significant amount of pollution themselves, but are responsible for indirect emissions, such as:

- Motor vehicle trips attracted to or generated by the land use;
- On-site combustion of natural gas, propane and wood for heating;
- Architectural coatings and consumer products; and,
- Landscape maintenance.

Emission impacts from both direct and indirect sources are typically identified and, if needed mitigated through the land use planning process under the guidelines and statutes of CEQA.

1.1 ROLE OF THE SLO COUNTY APCD

Under CEQA, the SLO County APCD may act as a **lead, responsible or commenting agency**, reviewing and commenting on projects which have the potential to cause adverse impacts to air quality. The CEQA statutes and guidelines require lead agencies to seek comments from each responsible agency and any public agency that have jurisdiction by law over resources that may be affected by a proposed project (CEQA 21153 and 15366). For many development proposals, this typically involves projects where vehicle trip generation is high enough to cause or contribute to local emission levels capable of hindering the APCD's efforts to attain and maintain health-based air quality standards. It is in this context that local jurisdictions and planning bodies can make critical decisions that affect their future environment and that of neighboring communities as well.

Offshore activities within State waters, such as oil drilling and production, harbor dredging and cable installation are also subject to CEQA review and possible APCD permits depending on the nature of the activity.

1.2 PROJECTS SUBJECT TO AIR QUALITY ANALYSIS

In general, any proposed project with **short-term construction** emissions or **long-term operational** emissions that may exceed an APCD threshold of significance, as identified in this Handbook, should be submitted to the SLO County APCD for review. If needed, the APCD will assist in refining impact evaluations and or appropriate mitigation measures. The project will be evaluated to determine the potential for significant air quality impacts, with further analysis or mitigation recommended if appropriate. Types of projects which generally fall into this category include:

- Discretionary Permits;
- Tract Maps;
- Development Plans;
- Site Plans;
- Area Plans;
- Specific Plans;
- Local Coastal Plans;
- General Plan Updates and Amendments;
- Large residential developments;
- Large commercial or industrial developments; and
- Remediation projects.

The environmental documents associated with these types of projects and reviewed by the APCD include Initial Studies, Notices of Preparation (NOP), Negative Declarations, and Environmental Impact Reports (EIR), and other environmental documents prepared pursuant to CEQA and NEPA.

1.3 PROJECT INFORMATION NEEDED FOR SLO COUNTY APCD REVIEW

Early consultation with the APCD can ensure the environmental document adequately addresses air quality issues. In order to facilitate our review of the proposed project, the following information should be provided:

- Complete and accurate project description;
- Emission calculations for both construction and operational phase emissions;
- Relevant environmental documents, including draft EIRs, Initial Studies, Negative Declarations, etc;
- Other technical analyses that relate to air quality, including but not limited to traffic analyses, growth impact projections, land use elements, maps, health risk assessments, sensitive receptor locations etc; and,
- Mitigation Monitoring Program, if applicable.

1.4 OPERATIONAL SCREENING CRITERIA FOR PROJECT IMPACTS

General screening criteria used by the SLO County APCD to determine the type and scope of projects requiring an air quality assessment, and/or mitigation, is presented in Table 1-1. These criteria are based on project size in an urban setting and are designed to identify those projects with the potential to exceed the APCD’s significance thresholds. Operational impacts are focused primarily on the indirect emissions (i.e., motor vehicles) associated with residential, commercial and industrial development.

Table 1-1 is based on ozone precursor and greenhouse gas (GHG) emissions and is not comprehensive. It should be used for general guidance only. This table is not applicable for projects that involve heavy-duty diesel activity and/or fugitive dust emissions. A more refined analysis of air quality impacts specific to a given project is necessary for projects that exceed the screening criteria below or are within ten percent (10%) of exceeding the screening criteria.

Table 1-1: Operational Screening Criteria for Project Air Quality Analysis^(1, 2)

Land Use	Unit of Measure	Size of Urban/(Rural) Project Expected to Exceed the APCD Annual GHG Bright Line Threshold ⁽³⁾ of:	Size of Urban/(Rural) Project Expected to Exceed the APCD Daily Ozone Precursor Significance Threshold ⁽⁴⁾ of:
		1150 MT CO ₂ e/year from Operational & Amortized Construction Impacts	25 lbs ROG+NO _x /Day from Operational Impacts
COMMERCIAL			
Bank (with Drive-Through)	1,000 SF	25	17
General Office Building		70	91
Government (Civic Center)			
Government Office Building			
Hospital			
Medical Office Building			
Office Park			
Pharmacy/Drugstore w/o Drive Thru			
Pharmacy/Drugstore with Drive Thru		26	25
Research & Development		93	114

EDUCATIONAL ⁽⁵⁾			
Day-Care Center	1,000 SF	39	26
Elementary School		69	62
High School		62	61
Junior High School		72	65
Library		24	23
Place of Worship		77	44
Junior College (2yr)	Students	1070	1032
University/College (4yr)		464	487
INDUSTRIAL ⁽⁶⁾			
General Heavy Industry	1,000 SF	53	311
General Light Industry		23	103
Industrial Park		36	113
Manufacturing		44	168
Refrigerated Warehouse-No Rail		47	237
Refrigerated Warehouse-Rail		50	324
Unrefrigerated Warehouse-No Rail		51	237
Unrefrigerated Warehouse-Rail		51	324
RECREATIONAL			
Fast Food Restaurant w/o Drive Thru	1,000 SF	2.9	2.6
Fast Food Restaurant with Drive Thru		5.7	3.5
Health Club		42	46
High Turnover (Sit Down Restaurant)		13.7	13.2
Movie Theater (No Matinee)		20	21
Quality Restaurant		18	21
Racquet Club		44	48
Recreational Swimming Pool		42	41
Arena	Acres	178	159
City Park		103	786
Golf Course		138	241
Hotel	Rooms	85	126
Motel		79	142
RESIDENTIAL			
Apartment High Rise	Dwelling Units	113	94
Apartment Low Rise		109 / (74)	94 / (71)
Apartment Mid Rise		112	94
Condo/Townhouse General		103 / (72)	93 / (69)
Condo/Townhouse High Rise		104	93
Congregate Care (Assisted Living)		196	157
Mobile Home Park		124	112
Retirement Community		169	- ⁽⁷⁾
Single Family Housing		70 / (49)	68 / (50)
RETAIL			
Auto Care Center	1,000 SF	33	32
Convenience Market (24 hour)		5.5	3.3
Convenience Market w/ Gas Pumps		5.7	2.3
Discount Club		37	34
Electronic Superstore		50	48
Free Standing Discount Store		29	25

Free Standing Discount Superstore		30	27
Hardware/Paint Store		28	22
Home Improvement Superstore		46	36
Regional Shopping Center		36	31
Strip Mall		40	38
Supermarket		17.2	12.5
Gasoline/Service Station	Pumps	32	10
<p>1. The screening levels in this table were created using CalEEMod version 2011.1.1 with default San Luis Obispo County urban settings; some rural setting results are also included and are denoted in parentheses. If the project is not represented well by an urban settings, (e.g. urban fringe development where urban trip lengths are not representative), then the project impacts need to be specifically evaluated in CalEEMod using project specific information; modeling results, substantiated assumptions, and CalEEMod files need to be presented to the APCD for review and approval.</p> <p>2. This screening table is based on annual GHG emissions and daily ozone precursor emissions, and is not comprehensive. It should be used for general guidance only. This table is not applicable for projects that involve substantial heavy-duty diesel activity and/or fugitive dust emissions. A more refined analysis of air quality impacts specific to a given project is recommended for projects exceeding the screening criteria values or that are within 10% of the screening criteria values in this table.</p> <p>3. Use of this table does not preclude lead agencies from complying with Section 15064.4 of the California Environmental Quality Act (“CEQA”) Guidelines which requires that “a lead agency should make a good-faith effort... to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project.” If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the screening levels in this table, a refined emissions quantification and analysis should be conducted.</p> <p>4. For ozone precursor evaluations the APCD considers CalEEMod winter scenario simulations worst case because winter emissions are typically higher than its summer emissions.</p> <p>5. All projects involving the purchase of a school site, or construction of a new elementary or secondary school, must be referred to the APCD for review and comment. (Pub. Resources Code Section 21151.8, Subd. (a)(2)).</p> <p>6. The size of projects expected to exceed the GHG Threshold of significance for Industrial Land Uses is much smaller than a project that would exceed the Ozone Precursor Threshold as a result of a CalEEMod.2011.1.1 model error in the calculations for industrial projects. This error is scheduled to be corrected in the next CalEEMod model update.</p> <p>7. Currently there is a CalEEMod model error for the retirement community category. If you are evaluating a project in this category, use the comparable Mobile Home Park category for screening.</p>			

1.5 PREPARING THE AIR QUALITY ANALYSIS SECTION FOR CEQA DOCUMENTS

As shown in Table 1-1, use of a simple screening analysis in a Negative Declaration, or emissions calculations and appropriate mitigation measures in a Mitigated Negative Declaration may be all that is necessary for many smaller urban projects. For larger projects requiring the preparation of an EIR, a more comprehensive air quality analysis is often needed. Such an analysis should address both construction phase and operational phase impacts of the project and include the following information:

- a. A description of existing air quality and emissions in the impact area, including the attainment status of SLO County relative to State and Federal air quality standards and any existing regulatory restrictions to development. The most recent Clean Air Plan should be consulted for applicable information.
- b. A thorough emissions analysis should be performed on all relevant emission sources, using emission factors from the EPA document AP-42 “Compilation of Air Pollutant Emission Factors”, the latest approved version of California Emission Estimator Model (CalEEMod), EMFAC, OFF-ROAD or other approved emission calculator tools. The emissions analysis should include calculations for estimated emissions of all criteria air pollutants and toxic air contaminants released from the anticipated land use mix on a quarterly and yearly basis. Documentation of emission factors and all assumptions (i.e. anticipated land uses, average daily trip rate from trip generation studies, etc.) should be provided in an appendix to the EIR.
- c. The EIR should include a range of alternatives to the proposed project that could effectively minimize air quality impacts, if feasible. A thorough emissions analysis should be conducted for each of the proposed alternatives identified. The EIR author should contact the SLO County APCD if additional information and guidance is required. All calculations and assumptions used should be fully documented in an appendix to the EIR.

- d. Assembly Bill 32, the California Global Warming Solution Act of 2006 and California Governor Schwarzenegger Executive Order S-3-05 (June 1, 2005), both require reductions of greenhouse gases in the State of California. Senate Bill 97 required the Office of Planning and Research to develop and the Natural Resources Agency to adopt Amendments to the CEQA Guidelines for greenhouse gas emissions. Based on these guidelines, greenhouse gas emissions should be evaluated in the EIR along with appropriate mitigation.
- e. If a project has the potential to emit toxic or hazardous air pollutants including diesel exhaust, and is located in close proximity to sensitive receptors, impacts may be considered significant due to increased cancer risk for the affected population, even at very low levels of emissions. Such projects may be required to prepare a risk assessment to determine the potential level of risk associated with their operations. The SLO County APCD should be consulted on any project with the potential to emit toxic or hazardous air pollutants.

Pursuant to the requirements of California Health and Safety Code Section 42301.6 (AB 3205) and Public Resources Code Section 21151.8, subd. (a)(2), any new school or proposed industrial or commercial project site located within 1000 feet of a school must be referred to the SLO County APCD for review. Further details on requirements for projects in this category are presented in Appendix A.

- f. The ARB has determined that emissions from sources such as roadways and distribution centers and to a lesser extent gas stations, certain dry cleaners, marine ports and airports as well as refineries can lead to unacceptably high health risk from diesel particulate matter and other toxic air contaminants. The APCD has established a CEQA health risk threshold of **89 in-a-million** for sources which are not otherwise directly regulated; this value represents the health risk caused by ambient concentration of toxics in San Luis Obispo County. A list of potential sources and recommended buffer distances can be found in Section 4.2 of the Handbook. If the proposed project is located in close proximity to any of the listed sources a health risk screening and/or assessment should be performed to assess risk to potential residence of the development.
- g. A consistency analysis with the Clean Air Plan is required for a Program Level environmental review, and may be necessary for a Project Level environmental review, depending on the project being considered. Details on conducting a consistency analysis with the Clean Air Plan can be found in Section 3.2.
- h. A cumulative impact analysis should be performed to evaluate the combined air quality impacts of this project and impacts from existing and proposed future development in the area. This should encompass all planned construction activities within one mile of the project.
- i. The data analyses requested above should address local and regional impacts with respect to maintaining applicable air quality standards at build out. Authors should consult the SLO County APCD to determine if a modeling analysis should be performed and included in the EIR.
- j. Temporary construction impacts, such as fugitive dust and combustion emissions from construction and grading activities, should be quantified and mitigation measures proposed. In addition, naturally occurring asbestos may exist at the site. A geological survey is required for the site if it is located in the APCD identified candidate naturally occurring asbestos area. If naturally occurring asbestos is found, the EIR should indicate that a plan will be developed to comply with the requirements listed in the Air Resources Board's Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. If naturally occurring asbestos is not present at the site an exemption request will need to be filed with the APCD.
- k. Mitigation measures should be recommended, as appropriate, following the guidelines presented in Sections 2.3, 2.4 and 3.7 of this document.

2 ASSESSING AND MITIGATING CONSTRUCTION IMPACTS

Use of heavy equipment and earth moving operations during project construction can generate fugitive dust and engine combustion emissions that may have substantial temporary impacts on local air quality and climate change. Fugitive dust of concern is particulate matter that is less than ten microns in size (PM₁₀) and is not emitted from definable point sources such as industrial smokestacks. Sources include open fields, roadways, storage piles, earthwork, etc. Fugitive dust emissions results from land clearing, demolition, ground excavation, cut and fill operations and equipment traffic over temporary roads at the construction site.

Heavy-duty construction equipment is usually diesel powered. In July 1999, the ARB listed the particulate fraction of diesel exhaust as a toxic air contaminant, identifying both chronic and carcinogenic public health risks. Combustion emissions, such as nitrogen oxides (NO_x), reactive organic gases (ROG), greenhouse gases (GHG) and diesel particulate matter (diesel PM), are most significant when using large, diesel-fueled scrapers, loaders, bulldozers, haul trucks, compressors, generators and other heavy equipment. Emissions from both fugitive dust and combustion sources can vary substantially from day-to-day depending on the level of activity, the specific type of operation, moisture content of soil, use of dust suppressants and the prevailing weather conditions.

Depending on the construction site location and proximity to sensitive receptors, a project that generates high levels of construction emissions, including diesel PM, may be required to perform a health risk assessment to evaluate short-term exposures to high pollutant concentrations and, if necessary, to implement mitigations measures. Mitigation requirements and the need for further analysis will be determined on a case-by-case basis, based upon emission levels and the potential risk for human exposure and effects. Diesel PM emissions may therefore be a factor in whether Best Available Control Technology (BACT) for construction equipment will be needed, even when emissions of criteria pollutants are below the Air District's significance thresholds.

The following information will assist the user in evaluating the fugitive dust and combustion emissions from a project and in proposing appropriate mitigation measures to reduce these impacts to a level of insignificance.

2.1 CONSTRUCTION SIGNIFICANCE CRITERIA

Construction emissions must be calculated for all development projects likely to exceed the construction emissions threshold, or if the project is subject to the special conditions defined in Section 2.1.1. Details on how to conduct emission calculations are discussed in Section 2.2 below. Once the emissions have been calculated, they should then be compared to the APCD construction phase significance thresholds.

Comparison to APCD Construction Significance Thresholds

The threshold criteria established by the SLO County APCD to determine the significance and appropriate mitigation level for a project's **short-term construction** emissions are presented in Table 2-1.

Most of the **short-term construction mitigation strategies** in Sections 2.3 and 2.4 focus on reducing fugitive dust emissions from work sites and haul vehicles, reducing combustion emissions from construction equipment, reducing asbestos (e.g., NOA) and scheduling construction activities to protect public health.

Table 2-1 provides general thresholds for determining the significance of impacts for total emissions expected from a project's construction activities. The discussion following the table provides a more detailed explanation of the thresholds. The Air District has discretion to require mitigation for projects that will not exceed the mitigation thresholds if those projects will result in special impacts, such as the release of diesel PM emissions or asbestos near sensitive receptors.

Table 2-1: Thresholds of Significance for Construction Operations

Pollutant	Threshold ⁽¹⁾		
	Daily	Quarterly Tier 1	Quarterly Tier 2
ROG + NO _x (combined)	137 lbs	2.5 tons	6.3 tons
Diesel Particulate Matter (DPM)	7 lbs	0.13 tons	0.32 tons
Fugitive Particulate Matter (PM ₁₀), Dust ⁽²⁾		2.5 tons	
Greenhouse Gases (CO ₂ , CH ₄ , N ₂ O, HFC, CFC, F6S)	Amortized and Combined with Operational Emissions (See Below)		

1. Daily and quarterly emission thresholds are based on the California Health & Safety Code and the CARB Carl Moyer Guidelines.
2. Any project with a grading area greater than 4.0 acres of worked area can exceed the 2.5 ton PM₁₀ quarterly threshold.

Mitigation of construction activities is required when the emission thresholds are equaled or exceeded by fugitive and/or combustion emissions:

ROG and NO_x Emissions

- **Daily:** For construction projects expected to be completed in less than one quarter (90 days), exceedance of the 137 lb/day threshold requires Standard Mitigation Measures;
- **Quarterly – Tier 1:** For construction projects lasting more than one quarter, exceedance of the 2.5 ton/quarter threshold requires Standard Mitigation Measures and Best Available Control Technology (BACT) for construction equipment. If implementation of the Standard Mitigation and BACT measures cannot bring the project below the threshold, off-site mitigation may be necessary; and,
- **Quarterly – Tier 2:** For construction projects lasting more than one quarter, exceedance of the 6.3 ton/quarter threshold requires Standard Mitigation Measures, BACT, implementation of a Construction Activity Management Plan (CAMP), and off-site mitigation.

Diesel Particulate Matter (DPM) Emissions

- **Daily:** For construction projects expected to be completed in less than one quarter, exceedance of the 7 lb/day threshold requires Standard Mitigation Measures;
- **Quarterly - Tier 1:** For construction projects lasting more than one quarter, exceedance of the 0.13 tons/quarter threshold requires Standard Mitigation Measures, BACT for construction equipment; and,
- **Quarterly - Tier 2:** For construction projects lasting more than one quarter, exceedance of the 0.32 ton/quarter threshold requires Standard Mitigation Measures, BACT, implementation of a CAMP, and off-site mitigation.

Fugitive Particulate Matter (PM₁₀), Dust Emissions

- **Quarterly:** Exceedance of the 2.5 ton/quarter threshold requires Fugitive PM₁₀ Mitigation Measures and may require the implementation of a CAMP.

Greenhouse Gas Emissions

- GHGs from construction projects must be quantified and amortized over the life of the project. The amortized construction emissions must be added to the annual average operational emissions and then compared to the operational thresholds in Section 3.5.1—Significance Thresholds for Project-Level Operational Emissions. To amortize the emissions over the life of the project, calculate the total greenhouse gas emissions for the construction activities, divide it by the project life (i.e., 50 years for residential projects and 25 years for commercial projects) then add that number to the annual operational phase GHG emissions.

2.1.1 *Special Conditions for Construction Activity*

In addition to the construction air quality thresholds defined above, there are a number of special conditions, local regulations or state / federal rules that apply to construction activities. These conditions must be addressed in proposed construction activity.

Sensitive Receptors

The proximity of sensitive individuals (receptors) to a construction site constitutes a special condition and may require a more comprehensive evaluation of toxic diesel PM impacts and if deemed necessary by the SLO County APCD, more aggressive implementation of mitigation measures than described below in the diesel idling section. Areas where sensitive receptors are most likely to spend time include schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling unit(s). Sensitive receptor locations for a project need to be identified during the CEQA review process and mitigation to minimize toxic diesel PM impacts need to be defined. The types of construction projects that typically require a more comprehensive evaluation include large-scale, long-term projects that occur within 1,000 feet of a sensitive receptor location(s).

Diesel Idling Restrictions for Construction Phases

The APCD recognizes the public health risk reductions that can be realized by idle limitations for both on and off-road equipment. The following idle restricting measures are required for the construction phase of projects:

- a. **Idling Restrictions Near Sensitive Receptors for Both On and off-Road Equipment**
 1. Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
 2. Diesel idling within 1,000 feet of sensitive receptors is not permitted;
 3. Use of alternative fueled equipment is recommended whenever possible; and,
 4. Signs that specify the no idling requirements must be posted and enforced at the construction site.

- b. **Idling Restrictions for On-road Vehicles**

Section 2485 of Title 13, the California Code of Regulations limits diesel-fueled commercial motor vehicles that operate in the State of California with gross vehicular weight ratings of greater than 10,000 pounds and licensed for operation on highways. It applies to California and non-California based vehicles. In general, the regulation specifies that drivers of said vehicles:

 1. Shall not idle the vehicle's primary diesel engine for greater than 5 minutes at any location, except as noted in Subsection (d) of the regulation; and,
 2. Shall not operate a diesel-fueled auxiliary power system (APS) to power a heater, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than 5.0 minutes at any location when within 100 feet of a restricted area, except as noted in Subsection (d) of the regulation.

Signs must be posted in the designated queuing areas and job sites to remind drivers of the 5 minute idling limit. The specific requirements and exceptions in the regulation can be reviewed at the following web site: www.arb.ca.gov/msprog/truck-idling/2485.pdf.

- c. **Idling Restrictions for off-Road Equipment**

Off-road diesel equipment shall comply with the 5 minute idling restriction identified in Section 2449(d)(3) of the California Air Resources Board's In-Use off-Road Diesel regulation: www.arb.ca.gov/regact/2007/ordies107/froal.pdf.

Signs shall be posted in the designated queuing areas and job sites to remind off-road equipment operators of the 5 minute idling limit.

Naturally Occurring Asbestos

Naturally Occurring Asbestos (NOA) has been identified as a toxic air contaminant by the California Air Resources Board (ARB). Under the ARB Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations, prior to any grading activities a geologic evaluation should be conducted to determine if NOA is present within the area that will be disturbed. If NOA is not present, an exemption request must be filed with the District. If NOA is found at the site, the applicant must comply with all requirements outlined in the Asbestos ATCM. This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the APCD. Technical Appendix 4.4 of this Handbook includes a map of zones throughout SLO County where NOA has been found and geological evaluation is required prior to any grading. More information on NOA can be found at <http://www.slocleanair.org/business/asbestos.asp>.

Asbestos Material in Demolition

Demolition activities can have potential negative air quality impacts, including issues surrounding proper handling, demolition, and disposal of asbestos containing material (ACM). Asbestos containing materials could be encountered during demolition or remodeling of existing buildings. Asbestos can also be found in utility pipes/pipelines (transite pipes or insulation on pipes). If utility pipelines are scheduled for removal or relocation or a building(s) is proposed to be removed or renovated, various regulatory requirements may apply, including the requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (40CFR61, Subpart M - asbestos NESHAP). These requirements include but are not limited to: 1) notification to the APCD, 2) an asbestos survey conducted by a Certified Asbestos Inspector, and, 3) applicable removal and disposal requirements of identified ACM. More information on Asbestos can be found at <http://www.slocleanair.org/business/asbestos.php>.

Developmental Burning

APCD regulations prohibit developmental burning of vegetative material within SLO County.

Permits

Portable equipment and engines 50 horsepower (hp) or greater, used during construction activities will require California statewide portable equipment registration (issued by the ARB) or an Air District permit. The following list is provided as a guide to equipment and operations that may have permitting requirements, but should not be viewed as exclusive:

- Power screens, conveyors, diesel engines, and/or crushers;
- Portable generators and equipment with engines that are 50 hp or greater;
- Internal combustion engines;
- Unconfined abrasive blasting operations;
- Concrete batch plants;
- Rock and pavement crushing;
- Tub grinders; and,
- Trommel screens.

2.2 METHODS FOR CALCULATING CONSTRUCTION EMISSIONS

In calculating emissions for construction operations (NO_x, ROG, DPM, GHG and fugitive PM), specific information about each activity and phase of the construction project is needed. Several methods are described below, each of which requires increasingly detailed information to produce more accurate results.

All assumptions, estimates, and calculation methods must be provided for SLO County APCD review. Calculation of combustion and fugitive dust emissions from construction activities should include peak daily, quarterly, annual, and total construction phase emissions of NO_x, ROG, diesel PM, GHG and fugitive PM. Both the duration of the construction activities and schedule of phases are required in the evaluation. When using CalEEMod or a spreadsheet to model construction emissions, the **electronic**

project file (not a pdf) needs to be submitted to the SLO County APCD for review along with a summary table showing all emissions. The electronic file(s) need to be submitted to the APCD for review and shall include specific and summary emission reports, a detailed explanation of any deviations from CalEEMod defaults, and a detailed description of assumptions used for the emission calculations.

It may be necessary to calculate the project's construction impacts without knowing the exact fleet of construction equipment involved in the project. Table 2-2 contains screening construction emission rates based on the volume of soil moved and the area disturbed. This table should only be used when no other project information is available.

Table 2-2: Screening Emission Rates for Construction Operations

Pollutant	Grams/Cubic Yard of Material Moved	Lbs/Cubic Yard of Material Moved
Diesel PM	2.2	0.0049
Reactive Organic Gases (ROG)	9.2	0.0203
Oxides of Nitrogen (NO _x)	42.4	0.0935
Fugitive Dust (PM ₁₀)	0.75 tons/acre/month of construction activity (assuming 22 days of operation per month)	

ROG, NO_x, DPM Source: Bay Area Air Quality Management District CEQA Guidelines, December 1999, Table 7
PM₁₀ Source: EPA-AP-42 (January 1995) and Index of Methodologies by Major Category Section 7.7 Building Construction Dust, California Air Resources Board, August 1997

The next level of specificity in defining project construction emissions involves the use of CalEEMod computer model. This model contains emission factors for a variety of construction equipment. It will automatically generate default values for the parameters listed below.

- Construction fleet;
- Construction phase duration (user must specify the start and end dates for each phase);
- Daily disturbed acreage;
- Fugitive dust emission rate;
- Asphalt paving (if applicable);
- Construction workers' trips;
- Equipment fleet mix for various phases of construction;
- Construction vendors' trips; and,
- Architectural coating emissions.

CalEEMod will not automatically calculate off-site hauling trips and associated emissions. If soil or demolition materials will need to be hauled off-site or materials will be imported, cubic yards of material and the number of truck trips will need to be entered into the model. The trip length associated with hauling also needs to be entered into the model along with a detailed explanation of the trip length. Specific truck emission factors for the hauling fleet should be included in the simulation. If the specific fleet is unknown at time of modeling, then a defensible worst case set of hauling fleet emission factors shall be used. This hauling component is an important step and is often overlooked resulting in under estimation of emissions.

If more detailed information regarding the construction phase of the project is known, the construction phases and default values can be modified in this step to more accurately reflect the anticipated emissions from the project.

A component of CalEEMod, the construction calculator, allows project specific equipment data to be used to calculate emissions. The use of the construction calculator is recommended for those projects that are in the final phase of planning when the actual fleet mix and construction schedule is defined to validate

previous emission estimates and finalize mitigation measures. The following variables can be defined for each piece of construction equipment:

- Equipment type;
- Quality of equipment used;
- Horsepower rating;
- Load factor;
- Usage (hours/day);
- Engine model year;
- Engine deterioration (years and hours since last rebuild); and,
- Exhaust after-treatment devices such as VDEC (verified diesel emission control devices).

More detailed information about CalEEMod can be found at www.caleemod.com

2.3 ROG, NO_x, PM AND GHG COMBUSTION MITIGATION MEASURES

Construction mitigation measures are designed to reduce emissions (ROG, NO_x, DPM, PM₁₀ and GHG) from heavy-duty construction equipment and may include emulsified fuels, catalyst and filtration technologies, engine replacement, new alternative fueled trucks, and implementation of Construction Activity Management Plans (CAMP). The mitigation measures for construction activity fall into three separate sections:

- Standard Mitigation Measures
- Best Available Control Technologies (BACT) and Construction Activity Management Plans
 - Construction Activity Management Plans (CAMP)
 - Retrofit Devices and Alternative Fuels
 - Repowers
- Fugitive Dust Mitigation Measures

Measure Applicability

Measures should be applied as necessary to reduce construction impacts below the significance thresholds listed in Table 2-1. Construction equipment mitigation measures and construction activity management practices have been shown to significantly reduce emissions while maintaining overall equipment performance and project scheduling needs. Project proponents shall determine daily and quarterly construction phase impacts and define mitigation that will be implemented if impacts are expected to exceed the SLO County APCD's construction phase thresholds of significance.

The following list of standard and specific mitigation measures shall be incorporated into project conditions depending on the level of impacts. Ozone precursors (ROG + NO_x) are to be combined and compared to the SLO County APCD's construction phase significance thresholds. Applying the BACT for construction equipment or implementing a Construction Activity Management Plan is required when the Quarterly Tier 2 construction significance thresholds of 6.3 tons per quarter ROG + NO_x or 0.32 tons per quarter diesel PM are exceeded.

2.3.1 Standard Mitigation Measures for Construction Equipment

The standard mitigation measures for reducing nitrogen oxides (NO_x), reactive organic gases (ROG), and diesel particulate matter (DPM) emissions from construction equipment are listed below:

- 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 NO_x 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; and,
- Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.

2.3.2 Best Available Control Technology (BACT) for Construction Equipment

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 BACT measures can include:

- Further reducing emissions by expanding use of Tier 3 and Tier 4 off-road and 2010 on-road compliant engines;
- Repowering equipment with the cleanest engines available; and
- Installing California Verified Diesel Emission Control Strategies. These strategies are listed at: <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>

2.3.3 Construction Activity Management Plan (CAMP) and Off-Site Mitigation

If the estimated construction emissions from the actual fleet are expected to exceed either of the APCD Quarterly Tier 2 thresholds of significance after the standard and BACT measures are factored into the estimation, then an APCD approved CAMP (see Technical Appendix 4.5 for CAMP Guidelines) and off-site mitigation need to be implemented in order to reduce potential air quality impacts to a level of insignificance.

CAMP

The CAMP should be submitted to the APCD for review and approval prior to the start of construction and should include, but not be limited to, the following elements:

- A Dust Control Management Plan that encompasses all, but is not limited to, dust control measures that were listed above in the "dust control measures" section;
- Tabulation of on and off-road construction equipment (age, horse-power and miles and/or hours of operation);
- Schedule construction truck trips during non-peak hours to reduce peak hour emissions;
- Limit the length of the construction work-day period, if necessary; and,
- Phase construction activities, if appropriate.

Off-Site Mitigation

It is important for the developer, lead agency, and SLO County APCD to work closely together whenever off-site mitigation is triggered. Off-site emission reductions can result from either stationary or mobile sources, but should relate to the on-site impacts from the project in order to provide proper "nexus" for the air quality mitigation. For example, NO_x emissions from a large grading project could be reduced by re-powering heavy-duty diesel construction equipment, thereby reducing the amount of NO_x generated from that equipment. An off-site mitigation strategy should be developed and agreed upon by all parties at least three months prior to the issuance of grading permits.

The current off-site mitigation rate is \$16,000 per ton¹ of ozone precursor emission (NO_x + ROG) over the APCD threshold calculated over the length of the expected exceedance. The applicant may use these funds to implement APCD approved emission reduction projects near the project site or may pay that funding level plus an administration fee (2012 rate is 15%) to the APCD to administer emission reduction projects in close proximity to the project. The applicant shall provide this funding at least two (2) months prior to the start of construction to help facilitate emission offsets that are as real-time as possible.

Examples off-site mitigation strategies include, but are not limited to, the following:

- Fund a program to buy and scrap older heavy-duty diesel vehicles or equipment;
- Replace/repower transit buses;
- Replace/repower heavy-duty diesel school vehicles (i.e. bus, passenger or maintenance vehicles);
- Retrofit or repower heavy-duty construction equipment, or on-road vehicles;
- Repower or contribute to funding clean diesel locomotive main or auxiliary engines;
- Purchase VDECs for local school buses, transit buses or construction fleets;
- Install or contribute to funding alternative fueling infrastructure (i.e. fueling stations for CNG, LPG, conductive and inductive electric vehicle charging, etc.);
- Fund expansion of existing transit services; and,
- Replace/repower marine diesel engines.

2.4 FUGITIVE DUST MITIGATION MEASURES

Fugitive dust is particulate matter that is less than ten micros in size (PM₁₀) and is not emitted from defined point sources such as industrial smokestacks. Sources include open fields, graded or excavated areas, roadways, storage piles, etc.

All fugitive dust sources shall be managed to ensure that dust emissions are adequately controlled to below the 20% opacity limit identified in the APCD Rule 401 *Visible Emissions* and to ensure that dust is not emitted offsite. Projects shall implement one of the following fugitive dust mitigation sets to both minimize fugitive dust emissions and associated complaints that could result in a violation of the APCD Rule 402 *Nuisance*. The correct fugitive dust mitigation set for a given project depends on the project scale or proximity to sensitive receptors. The project proponent may propose other measures of equal or better effectiveness as replacements by contacting the APCD Planning Division.

Fugitive Dust Mitigation Measures: Short List

Projects with grading areas that are less than 4-acres and that are not within 1,000 feet of any sensitive receptor shall implement the following mitigation measures to minimize nuisance impacts and to significantly reduce fugitive dust emissions:

- a. Reduce the amount of the disturbed area where possible;
- b. Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible;
- c. All dirt stock-pile areas should be sprayed daily as needed;
- d. All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible, and building pads should be laid as soon as possible after grading unless seeding or soil binders are used;
- e. All of these fugitive dust mitigation measures shall be shown on grading and building plans; and

¹ The value used to calculate off-site mitigation is based on the ARB approved Carl Moyer Grant Program and is updated on a periodic basis. The Carl Moyer cost effectiveness value as of 2009 is \$16,000 per ton.

- f. The contractor or builder shall designate a person or persons to monitor the fugitive 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.

Fugitive Dust Mitigation Measures: Expanded List

Projects with grading areas that are greater than 4-acres or are within 1,000 feet of any sensitive receptor shall implement the following mitigation measures to minimize nuisance impacts and to significantly reduce fugitive dust emissions:

- a. Reduce the amount of the disturbed area where possible;
- b. Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible;
- c. All dirt stock pile areas should be sprayed daily as needed;
- d. Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities;
- e. Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading should be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established;
- f. All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD;
- g. All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used;
- h. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;
- i. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114;
- j. Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site;
- k. Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible;
- l. All of these fugitive dust mitigation measures shall be shown on grading and building plans; and
- m. The contractor or builder shall designate a person or persons to monitor the fugitive 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. The name and telephone number of such persons shall be provided to the APCD Compliance Division prior to the start of any grading, earthwork or demolition.

2.5 MITIGATION MONITORING

The APCD may conduct site visits to ensure that the construction phase air quality mitigation measures identified in the project's CEQA documents/conditions of approval were fully implemented. The lead agency may also review project mitigation for consistency with project conditions. Beyond verifying mitigation implementation, this monitoring can result in compliance requirements if mitigation measures are not sufficiently being implemented.

3 ASSESSING AND MITIGATING OPERATIONAL IMPACTS

Air pollutant emissions from urban development can result from a variety of sources, including motor vehicles, wood burning appliances, natural gas and electric energy use, combustion-powered utility equipment, paints and solvents, equipment or operations used by various commercial and industrial facilities, heavy-duty equipment and vehicles and various other sources. The air quality impacts that result from operational activities of a development project should be fully evaluated and quantified as part of the CEQA review process. The methods for evaluating and mitigating operational impacts from residential, commercial and industrial sources are discussed below.

3.1 OPERATIONAL SIGNIFICANCE CRITERIA

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

- a. Consistency with the most recent Clean Air Plan for San Luis Obispo County;
- b. Consistency with a plan for the reduction of greenhouse gas emissions that has been adopted by the jurisdiction in which the project is located and that, at a minimum, complies with State CEQA Guidelines Section 15183.5.
- c. Comparison of predicted ambient criteria pollutant concentrations resulting from the project to state and federal health standards, when applicable;
- d. Comparison of calculated project emissions to SLO County APCD emission thresholds; and,
- e. The evaluation of special conditions which apply to certain projects.

3.2 CONSISTENCY WITH THE SLO COUNTY APCD'S CLEAN AIR PLAN AND SMART GROWTH PRINCIPLES

A consistency analysis with the Clean Air Plan is required for a Program Level environmental review, and may be necessary for a Project Level environmental review, depending on the project being considered. Program-Level environmental reviews include but are not limited to General Plan Updates and Amendments, Specific Plans, Regional Transportation Plans and Area Plans. Project-Level environmental reviews which may require consistency analysis with the Clean Air Plan and Smart/Strategic Growth Principles adopted by lead agencies include: subdivisions, large residential developments and large commercial/industrial developments. The project proponent should evaluate if the proposed project is consistent with the land use and transportation control measures and strategies outlined in the Clean Air Plan. If the project is consistent with these measures, the project is considered consistent with the Clean Air Plan.

3.3 CONSISTENCY WITH A PLAN FOR THE REDUCTION OF GREENHOUSE GAS EMISSIONS

The APCD encourages local governments to adopt a qualified GHG reduction plan that is consistent with AB 32 goals. If a project is consistent with an adopted qualified GHG reduction plan it can be presumed that the project will not have significant GHG emission impacts. This approach is consistent with the State CEQA Guidelines, Section 15183.5 (see text in box below).

§15183.5. Tiering and Streamlining the Analysis of Greenhouse Gas Emissions.

(a) Lead agencies may analyze and mitigate the significant effects of greenhouse gas emissions at a programmatic level, such as in a general plan, a long range development plan, or a separate plan to reduce greenhouse gas emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an EIR containing a programmatic analysis of greenhouse gas emissions as provided in section 15152 (tiering), 15167 (staged EIRs) 15168 (program EIRs), 15175-15179.5 (Master EIRs), 15182 (EIRs Prepared for Specific Plans), and 15183 (EIRs Prepared for General Plans, Community Plans, or Zoning).

(b) Plans for the Reduction of Greenhouse Gas Emissions. Public agencies may choose to analyze and mitigate significant greenhouse gas emissions in a plan for the reduction of greenhouse gas emissions or similar document. A plan to reduce greenhouse gas emissions may be used in a cumulative impacts analysis as set forth below. Pursuant to sections 15064(h)(3) and 15130(d), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances.

(1) Plan Elements. A plan for the reduction of greenhouse gas emissions should:

(A) Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;

(B) Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;

(C) Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area;

(D) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

(E) Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels;

(F) Be adopted in a public process following environmental review

(2) Use with Later Activities. A plan for the reduction of greenhouse gas emissions, once adopted following certification of an EIR or adoption of an environmental document, may be used in the cumulative impacts analysis of later projects. An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project. If there is substantial evidence that the effects of a particular project may be cumulatively considerable notwithstanding the project's compliance with the specified requirements in the plan for the reduction of greenhouse gas emissions, an EIR must be prepared for the project.

Detailed information on preparing qualified GHG reduction plans is provided in the Technical Appendices 4.6 GHG Plan Level Guidance.

3.4 COMPARISON TO STANDARDS

State and federal ambient air quality standards are established to protect public health and welfare from the adverse impacts of air pollution; these standards are listed in Table 3-1. Industrial and large commercial projects are sometimes required to perform air quality dispersion modeling if the SLO County APCD determines that project emissions may have the potential to cause an exceedance of these standards. In such cases, models are used to calculate the potential ground-level pollutant concentrations resulting from the project. The predicted pollutant levels are then compared to the applicable state and federal standards. A project is considered to have a significant impact if its emissions are predicted to cause or contribute to a violation of any ambient air quality standard. In situations where the predicted standard violation resulted from the application of a "screening-level" model or calculation, it may be appropriate to perform a more refined modeling analysis to accurately estimate project impacts. If a refined analysis is not available or appropriate, then the impact must be mitigated to a level of insignificance or a finding of overriding considerations must be made by the permitting agency.

Table 3-1: Ambient Air Quality Standards (State and Federal)

Pollutant		Averaging Time	California Standard ⁽¹⁾	Federal Standard ⁽²⁾
Ozone		1 Hour	0.09 ppm	
		8 Hour	0.070 ppm	0.075 ppm
Carbon Monoxide		8 Hour	9.0 ppm	9 ppm
		1 Hour	20 ppm	35 ppm
Nitrogen Dioxide		Annual Arithmetic Mean	0.030 ppm	0.053 ppm
		1 Hour	0.18 ppm	
Sulfur Dioxide		Annual Arithmetic Mean		0.030 ppm
		24 Hour	0.04 ppm	0.14 ppm
		3 Hour		0.5 ppm (secondary)
		1 Hour	0.25 ppm	
Respirable Particulate Matter	PM ₁₀	Annual Arithmetic Mean	20 µg/m ³	
		24 Hour	50 µg/m ³	150 µg/m ³
Fine Particulate Matter	PM _{2.5}	Annual Arithmetic Mean	12 µg/m ³	15.0 µg/m ³
		24 Hour		35 µg/m ³
Hydrogen Sulfide		1 Hour	0.03 ppm	
Vinyl Chloride		24 Hour	0.01 ppm	
Sulfates		24 Hour	25 µg/m ³	
Lead		30 day average: 25 µg/m ³		Rolling 3-month average: 0.15 µg/m ³
				Calendar quarter: 1.5 µg/m ³
Visibility Reducing Particles		8 Hour	Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.	

1. California standards for ozone, carbon monoxide (except Lake Tahoe), nitrogen dioxide, sulfur dioxide (1-hour and 24-hour), PM_{2.5}, PM₁₀ and visibility reducing particles are values that are not to be exceeded. All other state standards are not to be equaled or exceeded.

2. Federal standards are not to be exceeded more than once in any calendar year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24 hour standard is attained when the 98 percent of the daily concentration, average over three years, are equal to or less than the standard.

3.5 COMPARISON TO SLO COUNTY APCD OPERATIONAL EMISSION THRESHOLDS

Emissions which exceed the designated threshold levels are considered potentially significant and should be mitigated.

A Program Level environmental review, such as for a General Plan, Specific Plan or Area Plan however, does not require a quantitative air emissions analysis at the project scale. A qualitative analysis of the air quality impacts should be conducted instead, and should be generated for each of the proposed alternatives to be considered. The qualitative analysis of each alternative should be 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 APCD's Clean Air Plan. Refer to Section 3.2 for more information.

Section 3.7 of this document provides guidance on the type of mitigation recommended for varying levels of impact and presents a sample list of appropriate mitigation measures for different types of projects.

3.5.1 Significance Thresholds for Project-Level Operational Emissions

The threshold criteria established by the SLO County APCD to determine the significance and appropriate mitigation level for **long-term operational** emissions from a project are presented in Table 3-2.

Table 3-2: Thresholds of Significance for Operational Emissions Impacts

Pollutant	Threshold ⁽¹⁾	
	Daily	Annual
Ozone Precursors (ROG + NO _x) ⁽²⁾	25 lbs/day	25 tons/year
Diesel Particulate Matter (DPM) ⁽²⁾	1.25 lbs/day	
Fugitive Particulate Matter (PM ₁₀), Dust	25 lbs/day	25 tons/year
CO	550 lbs/day	
Greenhouse Gases (CO ₂ , CH ₄ , N ₂ O, HFC, CFC, F6S)	Consistency with a Qualified Greenhouse Gas Reduction Plan OR 1,150 MT CO ₂ e/year OR 4.9 CO ₂ e/SP/year (residents + employees)	

1. Daily and annual emission thresholds are based on the California Health & Safety Code Division 26, Part 3, Chapter 10, Section 40918 and the CARB Carl Moyer Guidelines for DPM.

2. CalEEmod – use winter operational emission data to compare to operational thresholds.

Most of the **long-term operational mitigation strategies** suggested in Section 3.7 focus on methods to reduce vehicle trips and travel distance, including site design standards which encourage pedestrian and bicycle-friendly, transit-oriented development. In addition, the recommendations include design strategies for residential and commercial buildings that address energy conservation and other concepts to reduce total project emissions. These recommendations are not all inclusive and are provided as examples among many possibilities.

3.5.2 Ozone Precursor (ROG + NO_x) Emissions

- If the project's ozone precursor emissions are below the APCD's **25 lbs/day** (combined ROG + NO_x emissions) no ozone mitigation measures are necessary. The Lead Agency will prepare the appropriate, required environmental document(s).
- Projects which emit **25 lb/day** or more of ozone precursors (ROG + NO_x combined) have the potential to cause significant air quality impacts, and should be submitted to the SLO County APCD for review. On-site mitigation measures, following the guidelines in Section 3.7 (*Operational Emission Mitigation*), are recommended to reduce air quality impacts to a level of insignificance.

If all feasible mitigation measures are incorporated into the project and emissions can be reduced to less than 25 lbs/day, then the Lead Agency will prepare the appropriate, required environmental document(s).

If all feasible mitigation measures are incorporated into the project and emissions are still greater than 25 lbs/day, then an ENVIRONMENTAL IMPACT REPORT should be prepared. Additional mitigation measures, including off-site mitigation, may be required depending on the level and scope of air quality impacts identified in the EIR.

- Projects which emit **25 tons/year** or more of ozone precursor (ROG + NO_x combined), require the preparation of an ENVIRONMENTAL IMPACT REPORT. Depending upon the level and scope of air quality impacts identified in the EIR, mitigation measures, including off-site mitigation, may be required to reduce the overall air quality impacts of the project to a level of insignificance.

3.5.3 Diesel Particulate Matter (DPM) Emissions

Diesel particulate matter (DPM) is seldom emitted from individual projects in quantities which lead to local or regional air quality attainment violations. DPM is, however, a toxic air contaminant and carcinogen, and exposure DPM may lead to increased cancer risk and respiratory problems. Certain industrial and commercial projects may emit substantial quantities of DPM through the use of stationary and mobile on-site diesel-powered equipment as well diesel trucks and other vehicles that serve the project.

Projects that emit more than **1.25 lbs/day** of DPM need to implement on-site Best Available Control Technology measures. If sensitive receptors are within 1,000 feet of the project site, a Health Risk Assessment (HRA) may also be required. Sections 3.5.1 and 3.6.4 of this Handbook provide more background on HRAs in conjunction with CEQA review. Guidance on the preparation of a HRA may be found in the CAPCOA report *HEALTH RISK ASSESSMENT FOR PROPOSED LAND USE PROJECTS* which can be downloaded from the CAPCOA website at www.capcoa.org.

3.5.4 Fugitive Particulate Matter (Dust) Emissions

Projects which emit more than **25 lbs/day** or **25 tons/year** of fugitive particulate matter need to implement permanent dust control measures to mitigate the emissions below these thresholds or provide suitable off-site mitigation approved by the APCD. Operational fugitive dust emissions from a proposed project are calculated using the CALEEMOD model discussed in Section 3.6.1. Typical sources of operational emissions included the following:

- Paved roadways: Vehicular traffic on paved roads that are used to access large residential, commercial, or industrial projects can generate significant dust emissions.

- Off and/or on-site unpaved roads or surfaces: Even at low traffic volume, vehicular traffic on unpaved roads or surfaces that are used to accesses residential, commercial, or industrial operations or that accesses special events, etc. can generate significant dust emissions
- Industrial and/or commercial operations: Certain industrial operations can generate significant dust emissions associated with vehicular access, commercial or industrial activities.

Any of the above referenced land uses or activities can result in dust emissions that exceed the APCD significance thresholds, cause violations of an air quality standard, or create a nuisance impact in violation of APCD Rule 402 *Nuisance*. In all cases where such impacts are predicted, appropriate fugitive dust mitigation measures shall be implemented.

3.5.5 Carbon Monoxide (CO) Emissions

Carbon monoxide is a colorless, odorless, tasteless gas emitted during combustion of carbon-based fuels. While few land use projects result in high emissions of CO, this pollutant is of particular concern when emitted into partially or completely enclosed spaces such as parking structures and garages. Projects which emit more than 550 lbs/day of carbon monoxide (CO) and occur in a confined or semi-confined space (e.g., parking garage or enclosed indoor stadium) must be modeled to determine their significance. In confined or semi-confined spaces where vehicle activity occurs, CO modeling is required. If modeling shows the potential to violate the State CO air quality standard, mitigation or project redesign is required to reduce CO concentrations to a level below the health-based standard.

3.5.6 Greenhouse Gas Emissions

GHGs (CO₂, CH₄, N₂O, HFC, CFC, F6S) from all projects subject to CEQA must be quantified and mitigated to the extent feasible. The thresholds of significance for a project's amortized construction plus operational-related GHG emissions are:

- For land use development projects, the threshold is compliance with a qualified GHG Reduction Strategy (see Section 3.3); OR annual emissions less than 1,150 metric tons per year (MT/yr) of CO₂e; OR 4.9 MT CO₂e/service population (SP)/yr (residents + employees²). Land use development projects include residential, commercial and public land uses and facilities. Lead agencies may use any of the three options above to determine the significance of a project's GHG emission impact to a level of certainty.
- For stationary-source projects, the threshold is 10,000 metric tons per year (MT/yr) of CO₂e. Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require an APCD permit to operate.

The APCD's GHG threshold is defined in terms of carbon dioxide equivalent (CO₂e), a metric that accounts for the emissions from various greenhouse gases based on their global warming potential. If annual emissions of GHGs exceed these threshold levels, the proposed project would result in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact to global climate change. More detailed information on the greenhouse gas thresholds can be found in the APCD's *Greenhouse Gas Thresholds and Supporting Evidence* document (March 28, 2012) that is available at www.slocleanair.org.

3.6 SPECIAL CONDITIONS

Projects may require additional assessments as described in the following section.

² For projects where the employment is unknown, please refer to Appendix 4.7 "Employees per 1000sf" to estimate the number of employees associated with any project.

3.6.1 Toxic Air Contaminants

Health Risk Assessments

If a project has the potential to emit toxic or hazardous air pollutants, or is located in close proximity to sensitive receptors, impacts may be considered significant due to increased cancer risk for the affected population, even at a very low level of emissions. Such projects may be required to prepare a risk assessment to determine the potential level of risk associated with their operations. The SLO County APCD should be consulted on any project with the potential to emit toxic or hazardous air pollutants. Pursuant to the requirements of California Health and Safety Code Section 42301.6 (AB 3205) and Public Resources Code Section 21151.8, subd. (a)(2), any new school, or proposed industrial or commercial project site located within 1000 feet of a school must be referred to the SLO County APCD for review. Further details on requirements for projects in this category are presented in Section 4.1.

In April of 2005, the California ARB issued the AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE (Land Use Handbook). The ARB has determined that emissions from sources such as roadways and distribution centers and, to a lesser extent gas stations, certain dry cleaners, marine ports and airports as well as refineries can lead to unacceptably high health risk from diesel particulate matter and other toxic air contaminants (TACs). Groups such as children and the elderly, as well as long-term residential occupants, are particularly at risk from toxic exposure.

In July 2009, the California Air Pollution Control officers Associations (CAPCOA) adopted a guidance document HEALTH RISK ASSESSMENTS FOR PROPOSED LAND USE PROJECTS to provide uniform direction on how to assess the health risk impacts from and to proposed land use projects. The CAPCOA guidance document focuses on how to identify and quantify the potential acute, chronic, and cancer impacts of sources under CEQA review. It also outlines the recommended procedures to identify when a project should undergo further risk evaluation, how to conduct the health risk assessment (HRA), how to engage the public, what to do with the results from the HRA, and what mitigation measures may be appropriate for various land use projects.

As defined in the CAPCOA guidance document there are basically two types of land use projects that have the potential to cause long-term public health risk impacts:

- Type A Projects: new proposed land use projects that generate toxic air contaminants (such as gasoline stations, distribution facilities or asphalt batch plants) that impact sensitive receptors. Air districts across California are uniform in their recommendation to use the significance thresholds that have been established under each district's "Hot Spots" and permitting programs. The APCD has defined the excess cancer risk significance threshold at **10 in a million** for Type A projects in SLO County; and,
- Type B Projects: new land use projects that will place sensitive receptors (e.g., residential units) in close proximity to existing toxics sources (e.g., freeway). The APCD has established a CEQA health risk threshold of **89 in-a-million** for the analysis of projects proposed in close proximity to toxic sources. This value represents the population weighted average health risk caused by ambient background concentrations of toxic air contaminants in San Luis Obispo County. The APCD recommends Health Risk screening and, if necessary, Health Risk Assessment (HRA) for any residential or sensitive receptor development proposed in proximity to toxic sources.

If a project is located near a sensitive receptor (e.g., school, hospital, dwelling unit(s), etc.), it may be considered significant even if other criteria do not apply. The health effects of a project's emissions may be more pronounced if they impact a considerable number of children, elderly, or people with compromised respiratory or cardiac conditions.

Diesel PM

In October of 2000, the ARB issued and adopted the Diesel Risk Reduction Plan to reduce particulate matter emissions from diesel-fueled engines and vehicles. This plan identified that 70% of the airborne toxic risk in California is from diesel particulate matter.

The plan called for a 90% reduction in this Toxic Air Contaminant by 2020 through:

- a. Adoption of new regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles;
- b. Requiring feasible and cost-effective diesel PM reducing retrofit requirements for the existing fleets and stationary engines; and,
- c. Reducing the sulfur content in diesel-fuel sold in California to 15 parts per million.

At a minimum, fleets must meet the diesel emission reduction requirements that have been adopted in the State's Diesel Risk Reduction Plan. These fleets may also be required to provide additional mitigation depending on the project's emissions and location.

Asbestos / Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) has been identified by the state Air Resources Board as a toxic air contaminant. Serpentine and ultramafic rocks are very common throughout California and may contain naturally occurring asbestos. The SLO County APCD has identified areas throughout the County where NOA may be present (see Technical Appendix 4.4). Under the ARB's Air Toxic Control Measure (ATCM) related to quarrying, and surface mining operations, a geologic evaluation is required to determine if NOA is present prior to any grading activities at a project site located in the candidate area.

If NOA is found at the site the applicant must comply with all requirements outlined in the Asbestos ATCM for Quarrying, and Surface Mining Operations. These requirements may include but are not limited to:

- a. Development of an Asbestos Dust Mitigation Plan which must be approved by the APCD before operations begin, and,
- b. Development and approval of an Asbestos Health and Safety Program (required for some projects).

If NOA is not present, an exemption request must be filed with the Air District. More information on NOA can be found at <http://www.slocleanair.org/business/asbestos.asp>.

3.6.2 Agricultural Operations**Wineries, Tasting Rooms and Special Events**

Reactive organic gas emissions (ethanol) generated during wine fermentation and storage, as well as emissions from equipment used in wine production, can cause significant air quality impacts. Thus, the emissions for new or modified winery operations and activities should be evaluated and appropriate mitigation specified when necessary. New or expanding wineries with storage capacity of 26,000 gallons per year or more may also require a Permit to Operate from the APCD.

Wine production facilities can also generate nuisance odors during various steps of the process. Proven methods for handling wastewater discharge and grape skin waste need to be incorporated into the winery practices to minimize the occurrence of anaerobic processes that mix with ambient air which can result in offsite nuisance odor transport. Odor complaints could result in a violation of the SLO County APCD Rule 402 *Nuisance*.

Agricultural Burns

Agricultural operations must obtain an APCD Agricultural Burn Permit to burn dry agricultural vegetation on Permissive Burn Days. The ARB provides educational handbooks on agricultural burning (English and Spanish) to growers which are available at the following websites:

- www.arb.ca.gov/cap/handbooks/agburningsmall.pdf
- www.arb.ca.gov/cap/handbooks/agburningspanishsmall.pdf.

3.6.3 Fugitive Dust

Fugitive dust can come from many sources, such as unpaved roads, equestrian facilities and confined animal feeding operations. Dust emissions from the operational phase of a project should be managed to ensure they do not impact offsite areas and do not exceed the 20% opacity limit identified in SLO County APCD Rule 401 *Visible Emissions*. A list of approved dust control suppressants is available in Technical Appendix 4.3. The approved suppressants must be reapplied at a frequency that ensures dust emissions will not exceed the limits stated above. Any chemical or organic material used for stabilizing solids shall not violate the California State Water Quality Control Board standards for use as a soil stabilizer. Any dust suppressant must not be prohibited for use by the US Environmental Protection Agency, the California Air Resources Board, or other applicable law, rule, or regulation.

Equestrian Facilities

Another potential source of fugitive dust can come from equestrian facilities, which may be a nuisance to local residents. To minimize nuisance impacts and to reduce fugitive dust emissions from equestrian facilities the following mitigation measures should be incorporated into the project:

- 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. Increased watering frequency whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water shall be used whenever possible;
- Permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities;
- 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 Air District;
- All access roads and parking areas associated with the facility shall be paved to reduce fugitive dust; and,
- A person or persons shall be designated to monitor for dust and implement additional control measures as necessary to prevent transport of dust offsite. The monitor's duties shall include holidays and weekend. The name and telephone number of such persons shall be provided to the Air District prior to operation of the arena.

Dirt Roads and Unpaved Areas

When a project is accessed by unpaved roads and or has unpaved driveways or parking areas, a PM₁₀ emission estimate needs to be conducted using the CALEEMOD model. When the model's emission estimate demonstrates an exceedance of the 25 lbs of PM₁₀/day or 25 tons of PM₁₀/year APCD thresholds, the following mitigation is required:

For the unpaved road leading to the project location, implement one of the following:

- a. For the life of the project, pave and maintain the driveway; or,
- b. For the life of the project, maintain the private unpaved driveway with a dust suppressant (See Technical Appendix 4.3 for a list of APCD-approved suppressants) such that fugitive dust emissions do not impact off-site areas and do not exceed the APCD 20% opacity limit.

To improve the dust suppressant's long-term efficacy, the applicant shall also implement and maintain design standards to ensure vehicles that use the on-site unpaved road are physically limited (e.g., speed bumps) to a posted speed limit of 15 mph or less.

If the project involves a city or county owned and maintained road, the applicant shall work with the Public Works Department to ensure road standards are followed. The applicant may propose other measures of equal effectiveness as replacements by contacting the APCD Planning Division.

Special Event Mitigation

When a special event is accessed by unpaved roads and or has unpaved driveways or parking areas, a PM₁₀ emission estimate must to be conducted using the CALEEMOD model. If the model shows an exceedance of the 25 lbs/day of PM₁₀ significance threshold, the following mitigation is required on the day(s) of the special event:

- a. Designated parking locations shall be:
 1. Paved when possible;
 2. Sited in grass or low cut dense vegetative areas; or,
 3. Treated with a dust suppressant such that fugitive dust emissions do not impact offsite areas and do not exceed the APCD 20% opacity limit (see Technical Appendix 4.3).
- b. Any unpaved roads/driveways that will be used for the special event shall be maintained with an APCD-approved dust suppressant such that fugitive dust emissions do not impact offsite areas and do not exceed the APCD 20% opacity limit.

The applicant may propose alternative measures of equal effectiveness by contacting the APCD Planning Division.

3.6.4 Air Quality Nuisance Impacts

If a project has the potential to cause an odor or other nuisance problem which could impact a considerable number of people, then it may be considered significant. A project may emit a pollutant in concentrations that would not otherwise be significant except as a nuisance. Odor impacts on residential areas and other sensitive receptors warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, work sites and commercial areas.

When making a determination of odor significance, determine whether the project would result in an odor source located next to potential receptors within the distances indicated in Table 3-3. The Lead Agency should evaluate facilities not included in Table 3-3 or projects separated by greater distances than indicated in Table 3-3 if warranted by local conditions or special circumstances. The list is provided as a guide and, as such, is not all-inclusive.

If a project is proposed within the screening level distances in Table 3-3, the APCD Enforcement Division should be contacted for information regarding potential odor problems. For projects that involve new receptors located near an existing odor source(s), an information request should be submitted to the SLO County APCD to review the inventory of odor complaints for the nearest odor emitting facility(ies) during the previous three years. For projects involving new receptors to be located near an existing odor source where there is currently no nearby development, and for new odor sources locating near existing receptors, the information request and analysis should be based on a review of odor complaints for similar facilities.

Table 3-3: Project Screening Distances for Nuisance Sources

PROJECT SCREENING DISTANCES	
Type of Operation	Project Screening Distance
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Coffee Roaster	1 mile
Composting Facility	1 mile
Fiberglass Manufacturing	1 mile
Food Processing Facility	1 mile
Oil Field	1 mile
Painting/Coating Operations (e.g. auto body shops)	1 mile
Petroleum Refinery	2 miles
Rendering Plant	1 mile
Sanitary Landfill	1 mile
Transfer Station	1 mile
Wastewater Treatment Plant	1 mile

Note: This list is provided as a guide and is not all-inclusive.

For a project that will be located near an existing odor source the project should be identified as having a significant odor impact, if it will be as close or closer to the any location that has experienced: 1) more than one confirmed complaint per year averaged over a three year period, or 2) three unconfirmed complaints per year averaged over a three year period.

If a proposed project is determined to result in potential odor problems, mitigation measures should be identified. For some projects, add-on controls or process changes, such as carbon absorption, incineration or an engineering modification to stacks/vents, can reduce odorous emissions. In many cases, however, the most effective mitigation strategy is the provision of a sufficient distance, or buffer zone, between the source and the receptor(s).

The SLO County APCD should be consulted whenever any of these additional special conditions may be applicable for a proposed project.

3.7 METHODS FOR CALCULATING PROJECT OPERATIONAL EMISSIONS

Operational phase air pollutant emissions from urban development can result from a variety of sources, including motor vehicles, wood burning appliances, natural gas and electric energy use, combustion-powered utility equipment, paints and solvents, equipment or operations used by various commercial and industrial facilities, construction and demolition equipment and operations, and various other sources. The amount and type of emissions produced, and their potential to cause significant impacts, depends on the type and level of development proposed. The following sections describe the recommended methods generally used to calculate emissions from motor vehicles, congested intersections and roadways, non-vehicular sources at residential and commercial facilities, and industrial point and area sources. Calculation and mitigation of construction emissions are described separately in Chapter 2.

Submittals describing project assessments must include spreadsheets with project calculations and a description of calculations so that the APCD can verify project quantification. **Calculations must be based on San Luis Obispo County default conditions unless the default settings are not representative of the project** (see below). The project report must detail assumptions made and provide sample calculations. Prior to finalizing the calculations, contact the APCD Planning and Outreach Division to review assumptions that do not have solid evidential support.

3.7.1 Determining Motor Vehicle Emissions

Motor vehicles are a primary source of long-term emissions from many residential, commercial, institutional, and industrial land uses. These land uses often do not emit significant amounts of air

pollutants directly, but cause or attract motor vehicle trips that do produce emissions. Such land uses are referred to as indirect sources.

Motor vehicle emissions associated with indirect sources should be calculated for projects which exceed or are within 10 % of the screening criteria listed in Table 1-1. Calculations should be performed using the latest version of CALEEMOD; this software incorporates the most recent vehicle emission factors from the EMFAC model (i.e., Emission FACTors) provided by the California Air Resources Board (ARB), and average trip generation factors published by the Institute of Transportation Engineers (ITE). The latest version of this program should always be used and can be downloaded free of charge at www.caleemod.com.

CalEEMod is a planning tool for estimating vehicle miles travel, fuel use and resulting emissions related to land use projects throughout California. The model calculates emissions of ROG, NO_x, CO, and CO₂ and other GHGs as well as dust and exhaust PM₁₀ from vehicle use associated with new or modified development such as shopping centers, housing, commercial services, industrial land uses, etc.

CALEEMOD includes many default values for parameters such as

- Seasonal Average Temperature;
- Humidity;
- Wood and gas stoves in a residential development and their usage;
- Fleet mix;
- Average vehicle speed and age;
- Average urban, rural, commute, shopping, and other trip type distances; and,
- Average trip rates for each land use.

When modeling project emissions, the user must specify that the project is located in SLO County so that the appropriate default values are used for the modeling. Motor vehicle-related defaults should not be changed without justification for doing so; solid documentation of rationale for any changes made need to be provided to APCD as part of the air quality report. Defaults that need to be evaluated and modified based on the project location and specifications include:

- **Trip Length:** For projects that are located in rural areas of the county where commercial services are not readily available, the trip length default values in the Operational – Mobile Vehicle Trips CalEEMod tab need be set at 13 miles for all trip distances; this happens automatically if the “Rural” Land Use Setting.
- **Fleet Mix:** Projects that attract a mix of vehicles which clearly differs from the default vehicle fleet in SLO County should make the appropriate changes to the FleetMix fraction section on the Annual, Summer, and Winter subtabs under the CalEEMod Operational – Mobile Vehicle Emissions Tab. Some examples include large commercial retail with heavy on-road truck use and heavy industry.
- **Dirt and Roads:** Projects which include on- and off-site dirt access roads should modify the default Road Dust component to accurately assess the project’s PM₁₀ emissions. For general traffic, SLO County APCD recommends using the ARB’s unpaved road emission factor of 2 pounds of particulate matter emissions per one mile of unpaved vehicle mile traveled (www.arb.ca.gov/ei/areasrc/fullpdf/FULL7-10.pdf). This value is not appropriate for heavy duty diesel truck travel on unpaved roads.

The following are the APCD recommended values to use in CalEEMod’s Operational – Mobile Road Dust tab to yield PM₁₀ emissions using variable values that emulate the ARB’s above identified unpaved road emission factor:

- Under the “Paved Road Dust” section:

- Change the “% Pave” value to define your project’s paved road component by entering the results of the following calculation:
 - In general, the total distance of paved road driving (miles) is determined with:
 - $[1 - (A/B)] \times 100\%$
 - Where A = The unpaved road distance to access the project
 - Where B is typically = to the county average one way trip distance of 13 miles)
 - Under the “Unpaved Road Dust” section:
 - Use a value of 9.3 for “Material Silt Content (%)”
 - Use a value of 0.1 for “Material Moisture Content (%)”
 - Use a value of 32.4 for “Mean Vehicle Speed (mph)”

If the project has a total distance of unpaved road greater than 13 miles, the actual distance of the unpaved road should be compared to the total one-way trip length to determine the percentages of paved and unpaved road distances. In addition, the Trip Length in the Operational – Mobile Vehicle Trips tab needs to be updated by entering the total length of a one way trip for the project.

CalEEMod reports submitted as part of a CEQA evaluation need to include the following:

- a. A winter, summer, and annual report;
- b. The model files associated with the reports;
- c. The SLO County APCD CEQA operational criteria pollutant thresholds should be compared to the Overall Operational winter total emissions (Note: ROG and NO_x emission values are combined and compared to the 25 lb/day threshold);
- d. The SLO County APCD CEQA operational GHG numerical threshold should be compared to the Overall Operational annual total CO₂e emissions;
- e. When summarizing modeling results in a CEQA document summary table always list the pollutants in the order they are listed in the model for ease of review; and,
- f. Changes to any SLO County defaults need to be identified and a solid defensible explanation for those changes need to be provided to the APCD.

3.7.2 Non-Vehicular Emissions from Residential and Commercial Facilities

Non-vehicular emission sources associated with most residential and commercial development include energy use to power lights, appliances, heating and cooling equipment, evaporative emissions from paints and solvents, fuel combustion by lawnmowers, leaf blowers and other small utility equipment, residential wood burning, household products, and other small sources. Collectively, these are referred to as “area sources” and are important from a cumulative standpoint even though they may appear insignificant when viewed individually. The CALLEEMOD model provides emissions estimations from area sources based on land use types; however it underestimates all emissions associated with electricity use and water consumption.

One CALLEEMOD default area source value which has a significant impact on project emissions and may need to be changed is hearth fuel combustion – it is enabled by default and should be disabled or modified if the project excludes wood-burning devices.

3.7.3 *Industrial Emission Sources*

From an emissions standpoint, industrial facilities and operations are typically categorized as being “point” or “area” sources. Point sources are stationary and generally refer to a site that has one or more emission sources at a facility with an identified location (e.g., power plant, refinery, etc.). Area sources can be:

- Stationary or mobile and typically include categories of stationary facilities whose emissions are small individually, but may be significant as a group (e.g., gas stations, dry cleaners, etc.);
- Sources whose emissions emanate from a broad area (e.g., fugitive dust from storage piles and dirt roads, landfills, etc.); and,
- Mobile equipment used in industrial operations (e.g., drill rigs, loaders, haul-trucks, etc.).

Emissions from new, modified or relocated point sources are directly regulated through the APCD Rule 204 *New Source Review* requirements and facility permitting program. A general list of the type of sources affected by these requirements is provided in Section 4.1. New development that includes these source types should be forwarded to the SLO County APCD for a determination of APCD permitting and control requirements. Through the CEQA analysis, all air quality impacts are evaluated including the stationary point, area and mobile sources. While a specific piece of equipment or process may be covered by an APCD permit it is not excluded from the CEQA evaluation process.

3.7.4 *Health Risk Assessment*

Health risk is a common metric used by air quality and health scientists to describe the potential for an individual or group of people (population) in a given area to suffer serious health effects from long-term or short-term exposure to one or more toxic air contaminants (TACs). In July 2009, the California Air Pollution Control officers Association (CAPCOA) released a guidance document titled *HEALTH RISK ASSESSMENT FOR LAND USE PROJECTS*, which is available for download at www.capcoa.org. Attachment 1 of the CAPCOA document provides specific guidance on how to model emissions of toxic substances from various source types to determine the potential cancer risk as well as acute and chronic non-cancer health risks for nearby receptors.

A screening-level and/or refined health risk assessment (HRA) may be required for projects which may result in the exposure of sensitive receptors (e.g., school, hospital, dwelling unit(s), etc.) to TACs. Projects which involve the siting of **either** the TAC source itself **or** sensitive receptors in close proximity to a TAC should be evaluated for risk exposure. Various tools are available to perform a screening analysis from stationary sources impacting receptors (Type A projects).

For projects being impacted by existing sources (Type B projects), a distance table screening tool is available in the ARB Land Use Handbook which provides recommended buffer distances associated with types of most common toxic air contaminant sources (see Technical Appendix 4.2).

If a screening risk assessment shows that the potential risk exceeds the APCD’s thresholds, then a more refined analysis may be required. The assessment should include the evaluation of both mobile and stationary sources. Risk assessments are normally prepared in a tiered manner, where progressively more input data is collected to refine the results. The refined analysis for the project should provide more accurate information for decision makers.

3.7.5 *Greenhouse Gas Emissions*

To quantify GHG emissions from a proposed development, the APCD recommends using CalEEMod for mobile sources and a partial characterization of area source impacts. In certain cases (e.g., drive-through restaurants), the use of alternative methodologies to quantify GHG impacts will be required. Please consult APCD Planning Division staff for current calculation methods.

3.8 OPERATIONAL EMISSION MITIGATION

Emissions from motor vehicles that travel to and from residential, commercial, and industrial land uses can generally be mitigated by reducing vehicle activity through site design (e.g., transit oriented design, infill, mixed use, etc.), implementing transportation demand management measures, using clean fuels and vehicles, and/or off-site mitigation. In addition, area source operational emissions from energy consumption from land uses can be mitigated by improving energy efficiencies, conservation measures and use of alternative energy sources. The mitigation measures in this section are intended to reduce emissions of ROG, NO_x, Diesel PM (DPM), Dust PM, and GHGs. The following three categories best capture the types of mitigation measures that can reduce air quality impacts from project operations:

- **Site Design Mitigation Measures:** Site design and project layout can be effective methods of mitigating air quality impacts of development. Land use development that incorporates urban infill, higher density, mixed use and walkable, bikeable, and transit oriented designs can significantly reduce vehicle activity and associated air quality impacts. As early as possible in the scoping phase of a project, the SLO County APCD recommends that developers and planners refer to the document *CREATING TRANSPORTATION CHOICES THROUGH DEVELOPMENT DESIGN AND ZONING* and Appendix E of the APCD Clean Air Plan *LAND USE AND CIRCULATION MANAGEMENT STRATEGIES*. APCD Planning Division staff is available to discuss project layout and design factors which can influence indirect source emissions and reduce mobile source emissions.
- **Energy Efficiency Mitigation Measures:** Residential and commercial energy use for lighting, heating and cooling is a significant source of direct and indirect air pollution nationwide. Reducing site and building energy demand will reduce emissions at the power plant source and natural gas combustion in homes and commercial buildings. The energy efficiency of both commercial and residential buildings can be improved by orienting buildings to maximize natural heating and cooling.
- **Transportation Mitigation Measures:** Vehicle emissions are often the largest continuing source of emissions from the operational phase of a development. Reducing the demand for single-occupancy vehicle trips is a simple, cost-effective means of reducing vehicle emissions. In addition, using cleaner fueled vehicles or retrofitting equipment with emission control devices can reduce the overall emissions without impacting operations. In today's marketplace, clean fuel and vehicle technologies exist for both passenger and heavy-duty applications.

3.8.1 Guidelines for Applying ROG, NO_x and PM₁₀ Mitigation Measures

In general, projects which do not exceed the 25 lb/day ROG+NO_x threshold do not require mitigation. For projects which exceed this threshold, the SLO County APCD has developed a list of mitigation strategies for residential, commercial and industrial projects. Alternate mitigation measures may be suggested by the project proponent if the APCD-suggested measures are not feasible. Project mitigation recommendations should follow the guidelines listed below and summarized in Table 3-4:

- a. Projects with the potential to generate 25 - 29 lbs/day of combined ROG + NO_x or PM₁₀ emissions should select and implement at least **8** mitigation measures from the list;
- b. Projects generating 30 - 34 lbs./day of combined ROG + NO_x or PM₁₀ emissions should select and implement at least **14** mitigation measures list;
- c. Projects generating 35 - 50 lbs./day of combined ROG + NO_x or PM₁₀ emissions should implement at least **18** measures from the list;

- d. Projects generating 50 lbs/day or more of combined ROG + NO_x or PM₁₀ emissions should select and implement **all feasible** measures from the list. Further mitigation measures may also be necessary, including off-site measures, depending on the nature and size of the project and the effectiveness of the mitigation measures proposed; and,
- e. Projects generating 25 tons per year or more of combined ROG + NO_x or PM₁₀ emissions will need to implement **all feasible** measures from the list as well as **off-site** mitigation measures, depending on the nature and size of the project and the effectiveness of the onsite mitigation measures proposed.

Table 3-4: Mitigation Threshold Guide

Combined ROG+NO _x or PM ₁₀ Emissions (lbs/day)	Mitigation Measures Recommended	
	Residential, Commercial or Industrial	Off-Site Mitigation
< 25	None	None
25 – 29	8	*
30 – 34	14	*
35 – 50	18	*
≥ 50	All Feasible	*
≥ 25 ton/yr	All Feasible	Yes

* Will be dependent on the effectiveness of the mitigation measures, location of project and high vehicle dependent development. Examples of projects potentially subject to off-site mitigation include: rural subdivisions, drive-through applications, commercial development located far from urban core.

3.8.2 Standard Mitigation Measures

The recommended standard air quality mitigation measures have been separated according to land use (i.e., residential, commercial and industrial), measure type (i.e., site design, energy efficiency and transportation) and pollutant reduced (i.e., ozone, particulate, diesel PM, and GHGs). Any project generating 25 lbs/day or more of ROG + NO_x or PM₁₀ should select the applicable number of mitigation measure as outlined above from Table 3-5 to reduce the air quality impacts from the project below the significance thresholds. This table also provides recommended mitigations for diesel PM and GHG emissions. For projects that exceed the DPM threshold (i.e., 1.25 lbs/day) due to significant diesel vehicle activity (e.g., mining operations, distribution facilities, etc.), project emissions must be recalculated to demonstrate that the project emissions are below the APCD DPM threshold of significance when mitigation measures are included.

Table 3-5: Mitigation Measures

LAND USE Residential (R) Commercial (C) Industrial (I)	Measure Type	MITIGATION MEASURE	POLLUTANT REDUCED Ozone (O) Particulate (P) Diesel Particulate Matter (DPM) Greenhouse Gas (GHG)
R, C, I	Site design, Transportation	Improve job / housing balance opportunities within communities.	O, P, GHG
R, C, I	Site design	Orient buildings toward streets with automobile parking in the rear to promote a pedestrian-friendly environment.	O, P, GHG
R, C, I	Site design	Provide a pedestrian-friendly and interconnected streetscape to make walking more convenient, comfortable and safe (including appropriate signalization and signage).	O, P, GHG
R, C, I	Site design	Provide good access to/from the development for pedestrians, bicyclists, and transit users.	O, P, GHG
R, C, I	Site design	Incorporate outdoor electrical outlets to encourage the use of electric appliances and tools.	O, P, GHG
R, C, I	Site design	Provide shade tree planting in parking lots to reduce evaporative emissions from parked vehicles. Design should provide 50% tree coverage within 10 years of construction using low ROG emitting, low maintenance native drought resistant trees. ³	O P GHG
R, C, I	Site design	Pave and maintain the roads and parking areas	P
R, C, I	Site design	Driveway design standards (e.g., speed bumps, curved driveway) for self-enforcing of reduced speed limits for unpaved driveways.	P
R, C, I	Site design	Use of an APCD-approved suppressant on private unpaved roads leading to the site, unpaved driveways and parking areas; applied at a rate and frequency that ensures compliance with APCD Rule 401, visible emissions and ensures offsite nuisance impacts do not occur.	P
R, C	Site design	Development is within 1/4 mile of transit centers and transit corridors.	O, P, GHG
R, C	Site design	Design and build compact communities in the urban core to prevent sprawl.	O, P, GHG
R, C	Site design	Increase density within the urban core and urban reserve lines.	O, P, GHG
R, C	Site design	For projects adjacent to high-volume roadways or railroad idling zones, design project to include provide effective buffer zone between the source and the receptor.	DPM
R, C	Site design	For projects adjacent to high-volume roadways, plant vegetation ⁴ between receptor and roadway.	DPM, P
R	Site design	No residential wood burning appliances.	O, P, GHG
R, C, I	Site design, Transportation	Incorporate traffic calming modifications to project roads, such as narrower streets, speed platforms, bulb-outs and intersection designs that reduce vehicles speeds and encourage pedestrian and bicycle travel.	O, P, GHG
R, C, I	Site design, Transportation	Increase number of connected bicycle routes/lanes in the vicinity of the project.	O, P, GHG
R, C, I	Site design, Transportation	Provide easements or land dedications and construct bikeways and pedestrian walkways.	O, P, GHG
R, C, I	Site design, Transportation	Link cul-de-sacs and dead-end streets to encourage pedestrian and bicycle travel to adjacent land uses.	O, P, GHG
R, C, I	Site design, Transportation	Project is located within one-half mile of a 'Park and Ride' lot or project installs a 'Park and Ride' lot with bike lockers in a location of need defined by SLOCOG.	O, P, GHG
C, I	Site design, Transportation	Provide onsite housing for employees.	O, P, GHG

³ Trees must be maintained for life of project

⁴ Certain types of vegetation provide maximum effectiveness. Vegetation must be maintained over the life of the project.

LAND USE Residential (R) Commercial (C) Industrial (I)	Measure Type	MITIGATION MEASURE	POLLUTANT REDUCED Ozone (O) Particulate (P) Diesel Particulate Matter (DPM) Greenhouse Gas (GHG)
C, I	Site design, Transportation	Implement on-site circulation design elements in parking lots to reduce vehicle queuing and improve the pedestrian environment.	O, P, GHG
C, I	Site design, Transportation	Provide employee lockers and showers. One shower and 5 lockers for every 25 employees are recommended.	O, P, GHG
C, I	Site design, Transportation	Parking space reduction to promote bicycle, walking and transit use.	O, P, GHG
R	Site design	Tract maps resulting in parcels of one-half acre or less shall orient at least 75% of all lot lines to create easy due south orientation of future structures.	GHG
R	Site design	Trusses for south-facing portions of roofs shall be designed to handle dead weight loads of standard solar-heated water and photovoltaic panels. Roof design shall include sufficient south-facing roof surface, based on structures size and use, to accommodate adequate solar panels. For south facing roof pitches, the closest standard roof pitch to the ideal average solar exposure shall be used.	O, GHG
R, C, I	Energy efficiency	Increase the building energy rating by 20% above Title 24 requirements. Measures used to reach the 20% rating cannot be double counted.	O, GHG
R, C, I	Energy efficiency	Plant drought tolerant, native shade trees along southern exposures of buildings to reduce energy used to cool buildings in summer. ⁵	O, GHG
R, C, I	Energy efficiency	Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available locally if possible.	O, DPM, GHG
R, C, I	Energy efficiency	Install high efficiency heating and cooling systems.	O GHG
R, C, I	Energy efficiency	Orient 75 percent or more of homes and/or buildings to be aligned north / south to reduce energy used to cool buildings in summer.	O GHG
R, C, I	Energy efficiency	Design building to include roof overhangs that are sufficient to block the high summer sun, but not the lower winter sun, from penetrating south facing windows (passive solar design).	O, GHG
R, C, I	Energy efficiency	Utilize high efficiency gas or solar water heaters.	O, P, GHG
R, C, I	Energy efficiency	Utilize built-in energy efficient appliances (i.e. Energy Star®).	O, P GHG
R, C, I	Energy efficiency	Utilize double-paned windows.	O, P, GHG
R, C, I	Energy efficiency	Utilize low energy street lights (i.e. sodium).	O, P, GHG
R, C, I	Energy efficiency	Utilize energy efficient interior lighting.	O, P, GHG
R, C, I	Energy efficiency	Utilize low energy traffic signals (i.e. light emitting diode).	O, P, GHG
R, C, I	Energy efficiency	Install door sweeps and weather stripping (if more efficient doors and windows are not available).	O, P, GHG
R, C, I	Energy efficiency	Install energy-reducing programmable thermostats.	O, P, GHG
R, C, I	Energy efficiency	Participate in and implement available energy-efficient rebate programs including air conditioning, gas heating, refrigeration, and lighting programs.	O, P, GHG

⁵ Trees must be maintained for the life of the project

LAND USE Residential (R) Commercial (C) Industrial (I)	Measure Type	MITIGATION MEASURE	POLLUTANT REDUCED Ozone (O) Particulate (P) Diesel Particulate Matter (DPM) Greenhouse Gas (GHG)
R, C, I	Energy efficiency	Use roofing material with a solar reflectance values meeting the EPA/DOE Energy Star [®] rating to reduce summer cooling needs.	O, P, GHG
R, C, I	Energy efficiency	Utilize onsite renewable energy systems (e.g., solar, wind, geothermal, low-impact hydro, biomass and bio-gas).	O, P, GHG
R, C, I	Energy efficiency	Eliminate high water consumption landscape (e.g., plants and lawns) in residential design. Use native plants that do not require watering and are low ROG emitting.	O, GHG
R, C, I	Energy efficiency	Provide and require the use of battery powered or electric landscape maintenance equipment for new development.	O, GHG
C, I	Energy efficiency	Use clean engine technologies (e.g., alternative fuel, electrification) engines that are not subject to regulations.	O, DPM, GHG
R, C, I	Transportation	Provide and maintain a kiosk displaying transportation information in a prominent area accessible to employees and patrons.	O, P, GHG
R, C, I	Transportation	Develop recreational facility (e.g., parks, gym, pool, etc.) within one-quarter of a mile from site.	O, P, GHG
R, C, I	Transportation	If the project is located on an established transit route, provide improved public transit amenities (i.e., covered transit turnouts, direct pedestrian access, covered bench, smart signage, route information displays, lighting etc.).	O, P, GHG
R, C, I	Transportation	Project provides a display case or kiosk displaying transportation information in a prominent area accessible to employees or residents.	O, P, GHG
R, C, I	Transportation	Provide electrical charging station for electric vehicles.	O, P, GHG
R, C, I	Transportation	Provide neighborhood electric vehicles / car share program for the development.	O, P, GHG
R, C, I	Transportation	Provide bicycle-share program for development.	O, P, GHG
R, C, I	Transportation	Provide preferential parking / no parking fee for alternative fueled vehicles or vanpools.	O, P, GHG
R, C, I	Transportation	Provide bicycle lockers for existing 'Park and Ride' lots where absent or insufficient.	O, P, GHG
R C I	Transportation	Provide vanpool, shuttle, mini bus service (alternative fueled preferred).	O, P, DPM, GHG
C, I	Transportation	Provide secure on-site bicycle indoor storage, lockers, or racks.	O, P, GHG
C, I	Transportation	For large developments, provide day care facility on site.	O, P, GHG
C, I	Transportation	Provide on-site bicycle parking both short term (racks) and long term (lockers, or a locked room with standard racks and access limited to bicyclist only) to meet peak season maximum demand. One bike rack space per 10 vehicle/employee space is recommended.	O, P, GHG
C, I	Transportation	On-site eating, refrigeration and food vending facilities	O, P, GHG
C, I	Transportation	Implement a Transportation Choice Program to reduce employee commute trips. The applicant shall work with Rideshare for free consulting services on how to start and maintain a program.	O, P, GHG
C, I	Transportation	Provide incentives (e.g., bus pass, "Lucky Bucks", etc.) to employees to carpool/vanpool, take public transportation, telecommute, walk bike, etc.	O, P, GHG
C, I	Transportation	Implement compressed work schedules (i.e., 9–80s or 4–10s).	O, P, GHG
C, I	Transportation	Implement a telecommuting program.	O, P, GHG
C, I	Transportation	Implement a lunchtime shuttle to reduce single occupant vehicle trips.	O, P, GHG

LAND USE Residential (R) Commercial (C) Industrial (I)	Measure Type	MITIGATION MEASURE	POLLUTANT REDUCED Ozone (O) Particulate (P) Diesel Particulate Matter (DPM) Greenhouse Gas (GHG)
C, I	Transportation	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.	O, P, DPM, GHG
C, I	Transportation	If the development is or contains a grocery store or large retail facility, provide customers home delivery service in clean fueled vehicles	O, P, DPM, GHG
C, I	Transportation	At community event centers (i.e., amphitheaters, theaters, and stadiums) provide valet bicycle parking.	O, P, GHG
C, I	Transportation	Implement a “No Idling” program for heavy-duty diesel vehicles, which includes signage, citations, etc.	DPM, GHG
C, I	Transportation	Develop satellite work sites.	O, GHG
C, I	Transportation	Require the installation of electrical hookups at loading docks and the connection of trucks equipped with electrical hookups to eliminate the need to operate diesel-powered TRUs at the loading docks.	DPM, GHG
C, I	Transportation	If not required by other regulations (ARB’s on-road or off-road diesel), restrict operation to trucks with 2007 model year engines or newer trucks.	O, DPM, GHG
C, I	Transportation	If not required by other regulations (ARB’s on-road or off-road diesel), require or provide incentives to use diesel particulate filters for truck engines.	DPM
R	Transportation	Provide storage space in garage for bicycle and bicycle trailers, or covered racks / lockers to service the residential units.	O, P, GHG
R	Transportation	Provide free-access telework terminals and/or wi-fi access in multi-family projects.	O, P, GHG
C	Transportation	Develop core commercial areas within 1/4 to 1/2 miles of residential housing or industrial areas.	O, P, GHG

3.8.3 Off-Site Mitigation

Operational phase emissions from large development projects that cannot be adequately mitigated with on-site mitigation measures alone will require off-site mitigation in order to reduce air quality impacts to a level of insignificance if emissions cannot be adequately mitigated with on-site mitigation measures alone. Whenever off-site mitigation measures are deemed necessary, it is important that the developer, lead agency and APCD work together to develop and implement the measures to ensure successful outcome. This work should begin at least six months prior to issuance of occupancy permits for the project.

The first step in determining whether off-site mitigation is required is to compare the estimated operational phase emissions to the APCD significance thresholds. If the sum of ROG + NO_x emissions exceeds 25 tons/year, off-site mitigation will be required. Off-site mitigation may also be required for development projects where emissions exceed the 25 lb/day threshold. Examples of projects potentially subject to off-site mitigation include rural subdivisions, drive-through facilities and commercial development located far from the urban core.

If off-site mitigation is required, potential off-site mitigation measures may be proposed and implemented by the project proponent following APCD approval of the appropriateness and effectiveness of the proposed measure(s). Alternatively, the project proponent can pay a mitigation fee based on the amount

of emission reductions needed to bring the project impacts below the applicable significance threshold. The APCD shall use these funds to implement a mitigation program to achieve the required reductions. The following outlines how to calculate the amount of off-site mitigation fees required for a given project:

- a. Calculate the operational phase emissions for the project using CALEEMOD, or an equivalent calculation tool approved by the APCD; include the emission reduction benefits of any onsite mitigation measures included in the project. Any project emissions calculated to be above the APCD significance thresholds are defined as excess emissions and must be reduced below the emission thresholds by off-site mitigation.
- b. Project emissions above the lbs/day threshold must be converted to tons/year and divided by the daily-to-annual equity ratio value of 5.5 to obtain an equivalent tons/year value.
- c. The excess tons/year emissions are then multiplied by the project life (i.e., 50 years for residential projects and 25 years for commercial projects) and the most current cost-effectiveness⁶ value as approved for the Carl Moyer grant program.

Off-site emission reductions can result from either stationary or mobile sources, but should relate to the on-site impacts from the project in order to provide proper "nexus" for the air quality mitigation. For example, NO_x emissions from increased vehicle trips from a large residential development could be reduced by funding the expansion of existing transit services in close proximity to the development project to reduce NO_x emissions. An off-site mitigation strategy should be developed and agreed upon by all parties prior to the start of construction.

The off-site mitigation strategies include but are not limited to the list provided below:

- Develop or improve park-and-ride lots;
- Retrofit existing homes in the project area with APCD-approved natural gas combustion devices;
- Retrofit existing homes in the project area with energy-efficient devices;
- Retrofit existing businesses in the project area with energy-efficient devices;
- Construct satellite worksites;
- Fund a program to buy and scrap older, higher emission passenger and heavy-duty vehicles.
- Replace/repower transit buses;
- Replace/repower heavy-duty diesel school vehicles (i.e. bus, passenger or maintenance vehicles);
- Fund an electric lawn and garden equipment exchange program;
- Retrofit or repower heavy-duty construction equipment, or on-road vehicles;
- Install bicycle racks on transit buses;
- Purchase Verified Diesel Emission Control Strategies (VDECS) for local school buses, transit buses or construction fleets;
- Install or contribute to funding alternative fueling infrastructure (i.e. fueling stations for CNG, LPG, conductive and inductive electric vehicle charging, etc.);
- Fund expansion of existing transit services;
- Fund public transit bus shelters;
- Subsidize vanpool programs;
- Subsidize transportation alternative incentive programs;
- Contribute to funding of new bike lanes;
- Install bicycle storage facilities; and,

⁶ Cost-effectiveness is a measure of the dollars needed to reduce a ton of emissions. The cost-effectiveness used to calculate off-site mitigation is based on the Carl Moyer Grant Program and is updated on a periodic basis. The Carl Moyer cost effectiveness value as of 2009 is \$16,000 per ton. There will be a 10% administration fee charged for grant administration.

- Provide assistance in the implementation of projects that are identified in city or county Bicycle Master Plans.

3.9 EVALUATION OF PROJECT CHANGES

If the scope or project description is modified after final project approval, the project will need to be re-evaluated by the APCD to determine if additional air quality impacts will result from the proposed modifications. If additional impacts are expected, the cumulative impacts from the total project must be evaluated.

3.10 MITIGATION MONITORING

In order to ensure the operational phase air quality mitigation measures and project revisions identified in the EIR or mitigated negative declarations are implemented, the APCD may conduct site visits to ensure that the mitigation measures are fully implemented. The lead agency may also review project mitigation for consistency with project conditions. Beyond verifying mitigation implementation, this monitoring can result in compliance requirements if mitigation measures are not sufficiently being implemented.

4 TECHNICAL APPENDICES

4.1 BUILDING PERMIT REQUIREMENTS FOR FACILITIES POTENTIALLY SUBJECT TO AIR DISTRICT PERMITS

WHAT IS THE SAN LUIS OBISPO COUNTY AIR POLLUTION CONTROL DISTRICT?

The San Luis Obispo County Air Pollution Control District (APCD) regulates stationary sources of air pollution such as factories, industrial sites, and gasoline stations. APCD regulations apply to many manufacturing and industrial procedures as well as such things as evaporative compounds, gasoline, paint, odors, incineration, smoke and open burning.

Government Code section 65850.2 identifies certain air pollution information that cities and counties are required to collect for new building and development projects. Sections 42301.6 to 42301.9 (AB 3205) of the California Health & Safety Code address the release of hazardous air contaminants near schools, and discuss requirements for air district permits for new or modified facilities.

The following overview describes how the law may affect you.

NEW BUILDING PERMIT REQUIREMENTS

Under the law, final certificates of occupancy may not be issued unless certain requirements are met. One of the requirements is that all applicants must comply with APCD permit regulations, or make a showing to the APCD that the permit regulations do not apply to their particular project.

A questionnaire will accompany all building permit application packets distributed by City and County Planning and Building Departments. This questionnaire pertains to facility location and equipment, processes, and materials which may require an APCD permit. This questionnaire should be completed and returned to the Planning and Building Department for initial screening and processing. If an APCD permit is required, and if air emissions occur within 1000 ft. of a school,

focused notification of nearby residents and student's parents may be required.

All planning and building departments have a description of typical facility types, processes, and equipment that require an APCD Permit to Operate. The table at the back of the attached questionnaire provides a list of these facilities. Operations which usually require an APCD Permit include:

- Solvent cleaners (degreasers)
- Coating of metal parts and products
- Printing and coating operations
- Auto body shops
- Paint spray booths
- Storage of organic liquids
- Wood furniture and cabinet coating
- Air pollution control equipment
- Gasoline stations or any gasoline dispensing facility
- Sandblasting
- Equipment which handles asbestos, beryllium, benzene, hexavalent chromium, mercury, or vinyl chloride.
- Other solvent uses

It should be noted that all residential construction is exempt from these requirements.

If you are unsure whether or not your project is subject to permit requirements, the necessary information can be obtained by contacting the APCD and describing the proposed project. APCD staff can then determine if an application must be filed.

REQUIREMENTS FOR EXISTING OR PROPOSED PROJECTS NEAR SCHOOLS

Under the California Health and Safety Code, there are specific requirements which must be met by both the APCD and existing or proposed commercial or industrial facilities near a school.

Upon receipt of the facility operations questionnaire, the APCD will evaluate it for equipment or processes requiring a permit and for proximity to sensitive receptors. This initial screening will occur within fourteen (14) days of

receipt of the questionnaire. The APCD will notify the applicant and the planning agency if further action is necessary under the law and/or the APCD permit process. If no further action is required, then the APCD will sign off on the questionnaire and return it to the Planning Agency. If hazardous materials may be used at the facility, APCD will also forward it to the Environmental Health Department or, for projects located within the City of San Luis Obispo, the San Luis Obispo Fire Department. If additional action is required under the law or the APCD permitting process, a description of required actions will be included in the letter sent to the planning department and the applicant.

CONSTRUCTION OF NEW SCHOOLS

For construction of new schools, **any person or agency preparing an Environmental Impact Report for a proposed school site must consult with the city, county, and the APCD to identify facilities within one-quarter mile of the proposed school site which may emit hazardous air emissions, or have the potential to explode or catch fire.** The city, county, and APCD have 30 days to provide this information to the person or agency seeking it. This requirement is spelled out in the Public Resources Code Sec. 21151.8, Subd.(a) (4).

FORESEEABLE THREAT OF RELEASE OF HAZARDOUS AIR CONTAMINANT

Under certain conditions, the law requires the APCD to take action when there is a reasonable threat of release of a hazardous air contaminant. APCD action is required if:

1. The release is predicted from a facility located within 1000 feet of a school; and
2. The release has the potential to impact persons at the school to the extent that a public health threat or nuisance could result.

When the release of a hazardous air contaminant is forecast, the APCD must notify the agency responsible for administering the hazardous materials policy. In addition, the APCD may respond to this reasonable threat of release by:

1. Issuing an immediate order to prevent the release; or,
2. Mitigating the foreseeable threat of a release, pending a hearing; or,
3. Applying to the APCD Hearing Board for issuance of an Order of Abatement.

Furthermore, if the principal of a school contacts the APCD to request an investigation of odors or possible air pollution sources as the cause of illness among school children, within 24 hours the APCD must respond and notify the city or county official responsible for administering hazardous materials policy and the fire department having jurisdiction over the school.

FOR HELP

This handout provides answers to commonly asked questions about new building permit and occupancy requirements. If you need additional information regarding these requirements, please call (805) 781- 5912.



Air Pollution Control District
San Luis Obispo County

FACILITY OPERATIONS QUESTIONNAIRE

For the Incorporated and Unincorporated Areas of San Luis Obispo County

State law (AB 3205) requires an applicant for a commercial/industrial development project, building permit or occupancy permit to provide information to the Air Pollution Control District (APCD) indicating whether hazardous materials or certain equipment or processes will be used in or at the facility. Such uses may require a permit from the APCD and/or a Hazardous Materials Business Plan. **This law prohibits a City or County from issuing a final certificate of occupancy until the applicant or future building occupant has complied with the provisions of the law.** The law may also impose certain public noticing requirements for a facility that handles hazardous materials and is located within 1,000 feet of the outer boundary of a school (kindergarten through 12th grade). Additional information explaining the requirements of this law is attached to this form.

TO DETERMINE WHETHER YOUR BUSINESS IS SUBJECT TO THESE REQUIREMENTS, PLEASE COMPLETE THIS QUESTIONNAIRE:

Business Name (Doing Business As):		Contact Person:	Phone ()
Mailing Address:		City	State Zip
Nearest Cross Streets:			
1.	WILL THE INTENDED OCCUPANT(S) INSTALL OR USE ANY PIECE OF EQUIPMENT LISTED ON THE ATTACHED LIST? <i>(If YES forward to Air Pollution Control District.)</i>	YES <input type="checkbox"/>	NO <input type="checkbox"/>
2.	WILL THE INTENDED OCCUPANT(S) STORE, HANDLE OR USE ANY HAZARDOUS MATERIALS LISTED ON THE ATTACHED LIST? <i>(If YES forward to Air Pollution Control District.)</i>	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Briefly Describe Nature of the Intended Business Activity:			
Name of Owner or Authorized Agent:		Title:	
I declare under penalty of perjury that, to the best of my knowledge and belief, the responses made herein are true and correct:		Agency Project ID Number: .	
Signature of Owner or Authorized Agent:		Multiple or Unknown Occupants	
Signed: _____ Date: _____		<input type="checkbox"/> Check if Applicable	
FOR PLANNING DEPARTMENT USE ONLY			
Forwarded to APCD for processing:	YES <input type="checkbox"/>	NO <input type="checkbox"/>	Planning Dept. Official _____ Date _____
FOR APCD USE ONLY			
APCD permit required	YES <input type="checkbox"/>	NO <input type="checkbox"/>	FORWARDED TO: YES <input type="checkbox"/>
Potential hazardous materials	<input type="checkbox"/>	<input type="checkbox"/>	ENV. HEALTH <input type="checkbox"/>
Within 1000' of a school	<input type="checkbox"/>	<input type="checkbox"/>	S.L.O. CITY FIRE <input type="checkbox"/>
Public notice required	<input type="checkbox"/>	<input type="checkbox"/>	
PROCESSED AND RETURNED TO PLANNING DEPARTMENT BY:		FINAL CHECK-OFF	
_____ Air Pollution Control District Official		_____ Planning Department Official	
Date		Date	

PERMIT CATEGORIES

Businesses with the following equipment, operations or materials will require clearance from the Air Pollution Control District before obtaining a Certificate of Occupancy. Businesses which store, handle, or use hazardous materials will require clearance from the San Luis Obispo City Fire Department or San Luis Obispo County Environmental Health before obtaining a Certificate of Occupancy.

CHEMICALS

Ethylene Oxide Sterilizers
Acid Chemical Milling
Evaporators, Dryers, and Stills
Processing Organic Materials
Dry Chemical Mixing and storage

COATINGS AND SURFACE

PREPARATION

Abrasive Blasting Equipment
Coating and Painting (not house-painting)
Paint, Stain, and Ink Manufacturing
Printers

COMBUSTION

Piston Internal Combustion Engines
(50 hp or larger)
Incinerators and Crematories
Boilers and Heaters (2 million BTU/hr or larger)

ELECTRONICS

Solder Levelers
Wave Solder Machines
Vapor Degreasers
Fume Hood Scrubbers
Electrolytic Plating
Silicone Chip Manufacturing

FOOD

Smokehouses
Feed and Grain Mills
Coffee Roasters
Bulk Flour and Grain Storage

METALS

Metal Melting Devices
Hot Dip Galvanizing
Cadmium or Chrome Plating
Chromic Acid Anodizing

PETROLEUM FUELS MARKETING

Gasoline and Alcohol Bulk Plants
and Terminals
Gasoline and Alcohol Fuel Dispensing

ROCK AND MINERAL

Hot Asphalt Batch Plants
Sand, Rock, and Aggregate Plants
Concrete Batch, Concrete Mixers,
and Silos
Brick Manufacturing

SOLVENT USE

Vapor and Cold Degreasing
Solvent and Extract Dryers
Dry Cleaning

OTHER

Asphalt Roofing Tanks
Aqueous Waste Neutralization
Landfill Gas Flare or Recovery
Systems
Waste Disposal and Reclamation
Units
Grinding Booths and Rooms
Oil Field Exploration or Production
Plastic/Fiberglass Manufacturing
Soil Aeration/Reclamation
Storage of Organic Liquids
Powder Coating
Fiberglass Chopper Guns
Waste Water Treatment Works

EXAMPLES OF HAZARDOUS MATERIALS

Ammonia
Acids and Bases
Chlorine
Compressed Gases
Corrosives
Cryogenic Fluids
Explosives
Fertilizers
Flammable Liquids and Solids

Gasoline
Hazardous Material Mixtures
Herbicides
Industrial Cleaners
Infectious/Biological Materials
Oxidizing Materials
Paint Thinners
Paints
Pesticides

Petroleum Products
Poisons
Pyrophoric/Hypergolic Materials
Radioactives
Solvents
Waste Oils
Water Reactives
Welding Gases

NOTE: Other equipment not listed here that is capable of emitting air contaminants may require a San Luis Obispo County Air Pollution Control District Permit. If there are any questions, contact the APCD at (805) 781-5912. For information on Hazardous Materials located within the City of San Luis Obispo contact the San Luis Obispo Fire Department at (805) 781-7380. All other areas contact County Environmental Health at (805) 781-5544.

IF YOU INSTALL AND/OR OPERATE EQUIPMENT WITHOUT A REQUIRED PERMIT, YOU MAY BE SUBJECT TO LEGAL ACTION AND PENALTIES OF UP TO \$50,000 PER DAY FOR EACH DAY OF VIOLATION

TIMELINE AND IMPLEMENTATION PROCESS

I. Outside Agency (Planning Department) Responsibilities

- A. Planning Department distributes Development Plan (DP) Application Packet to applicant. This packet includes AB3205 information.
- B. Applicant completes the DP packet, and returns it to the Planning Department.
- C. Planning Department conducts **initial screening** of Hazardous Materials Questionnaire (hereafter referred to as the Questionnaire). This screening consists of reviewing the Questionnaire for answers to the following questions:
 - 1. Will the intended occupant(s) install or use any of the equipment listed on attached list ("San Luis Obispo County APCD Permit Categories").
 - 2. Will the intended occupant store, handle, or use hazardous materials in any quantity?
- D. The Planning Department performs one of the following actions, based on the response to the questions listed in Section I.C. above:
 - 1. If the answers to Questions #1 and #2 are **NO**, then this project is exempt from AB3205 requirements, and from APCD permitting action. The Planning Department can sign off on the Questionnaire, indicating that the project is exempt from further action under AB3205. This questionnaire is then retained as part of the project file maintained by the Planning Department.
 - 2. If the answer to either Question #1 or Question #2 is **YES**, the questionnaire is forwarded to the APCD for further review.

II. APCD Responsibilities

APCD reviews the Questionnaires received from the Planning Department. Within 14 days, one of the following determinations will be made:

- A. If the answer to question 1 on the Facility Operations Questionnaire is **NO** and the APCD agrees, complete the appropriate boxes on the rest of the form and return to the Planning Department.
- B. If the answer to question 1 on the Facility Operations Questionnaire is **NO** but the APCD disagrees, continue to sections C and D below.
- C. APCD Permit Required/Exempt from AB3205 Requirements.

If the answer to Question #1 is **YES**, and the facility is not located within 1000 feet of a school, then the project is exempt from further processing under AB3205, but **IS** subject to APCD permitting requirements. As a result, the APCD will take the following actions:

Within 7 days of receipt of the questionnaire from the Planning Department, the APCD will:

- Review the Questionnaire to determine if the source stores, handles or uses hazardous materials (Question #2 on the form). If the answer to that question is **YES**, then APCD completes the appropriate sections of the questionnaire and forwards it to either the City of San Luis Obispo Fire Department (if project is within the City limits), or Environmental Health (all other areas). A memo to County Planning will be sent summarizing action taken.
- If Hazardous Materials storage, usage or handling is not proposed on-site, APCD Planning Staff will indicate that on the questionnaire. The "APCD Permit Required" box will be checked "YES", and the form returned to the Planning Department.

The APCD Engineering Staff sends a letter to the project applicant indicating that this project **IS** subject to APCD permit. Accompanying this letter will be an ATC (Authority to Construct) application, and other explanatory information.

Upon receipt of an ATC application, the APCD has 30 days to determine if the application is complete. A letter of completeness (or incompleteness) is sent to the applicant prior to the end of the 30-day period. If the application is incomplete, the APCD will request additional information in the aforementioned letter. If the application is complete, then the APCD will issue a completeness letter indicating that they have 180 days to issue an ATC.

After project construction is complete, the applicant must indicate in writing to the APCD that construction is complete. A field inspection will then be conducted by APCD staff to determine compliance with applicable APCD Rules and Regulations. Upon verification of compliance, a Permit-to-Operate (PTO) for the subject facility is issued by the APCD.

D. APCD Permit Required/Subject to AB3205 Requirements

If the answer to Questions #1 is **YES**, and the facility is within 1000 feet of a school, the proposed project will be subject to the APCD permitting process and AB3205 Public Noticing Requirements. The APCD will perform the following actions:

Within 7 days of receipt of the questionnaire from the Planning Department, the APCD will:

- Review the Questionnaire to determine if the source stores, handles or uses hazardous materials (Question #2 on the form). If the answer to that question is **YES**, then APCD completes the appropriate sections of the questionnaire and forwards it to either the City of San Luis Obispo Fire Department (if project is within the City limits), or Environmental Health (all other areas). A memo to County Planning will be sent summarizing action taken.
- If Hazardous Materials storage, usage, or handling is not proposed on-site, APCD Planning Staff will indicate as such on the questionnaire.

The APCD Engineering Staff sends a letter to the project applicant indicating that this project **IS** subject to APCD permit and AB3205 Public Noticing requirements. Accompanying this letter will be an ATC application, a description of public noticing requirements and other explanatory information.

Upon receipt of an ATC application, the APCD has 30 days to determine if the application is complete. A letter of completeness (or incompleteness) is sent to the applicant prior to the end of the 30-day period. If the application is incomplete, the APCD will request additional information in the aforementioned letter.

When the APCD has deemed the ATC application complete, the applicant will then be required to comply with the public noticing requirements of the California Health and Safety Code, Section 42301.6. Compliance with the public noticing requirements must be demonstrated prior to APCD action on the ATC application. These requirements are as follows:

- The Air Pollution Control Officer (APCO) shall, **at the expense of the permit applicant**, distribute (or mail) a public notice to the parents or guardians of children enrolled in ANY school that is located within 1/4 mile of the proposed project site, and to each address within a 1000 ft. radius of the proposed source. An assessor's parcel map will be used to determine the area encompassing addresses within the 1000 ft. radius of the proposed project.
- The public noticing period extends for 30 days, and **MUST** begin at least 30 days prior to the APCD taking final action on the ATC application for the proposed project. This notice may be combined with any other notice on the project or permit, which is required by law. The APCO shall review and consider all public comments received during the 30 days after the notice is distributed, and shall include written responses to the comments in the permit application file prior to taking final action on the application.

State law requires the APCD to approve or deny the ATC within 180 days of the date on which the A/C application was deemed complete. The public noticing period and the APCD response to public comments **MUST** occur within this time period. The APCD cannot issue the ATC until public noticing requirements for AB3205 have been satisfied.

After project construction is completed, the applicant must indicate **in writing** to the APCD that construction is complete. A field inspection will then be conducted by APCD staff to determine compliance with applicable APCD Rules and Regulations. Upon verification of compliance, a PTO or the subject facility is issued by the APCD.

4.2 ARB'S RECOMMENDATIONS ON SITING NEW SENSITIVE LAND USES ⁷

Table 4-1: Siting New Sensitive Land Use

Source Category	Advisory Recommendations
Freeways and high-traffic roads	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles per day.
Distribution centers	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Railyards	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	<ul style="list-style-type: none"> Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult the Air District or the ARB on the status of pending analyses of health risks.
Refineries	<ul style="list-style-type: none"> Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome platers	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry cleaners using perchloroethylene	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline dispensing facilities	<ul style="list-style-type: none"> Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

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- These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.
- Recommendations are based primarily on data showing that the air pollution exposures addressed here (i.e., localized) can be reduced as much as 80% with the recommended separation.
- The relative risk for these categories varies greatly. To determine the actual risk near a particular facility, a site-specific analysis would be required. Risk from diesel PM will decrease over time as cleaner technology phases in.
- These recommendations are designed to fill a gap where information about existing facilities may not be readily available and are not designed to substitute for more specific information if it exists. The recommended distances take into account other factors in addition to available health risk data (see individual category descriptions).
- Site-specific project design improvements may help reduce air pollution exposures and should also be considered when siting new sensitive land uses.
- This table does not imply that mixed residential and commercial development in general is incompatible. Rather it focuses on known problems like dry cleaners using Perchloroethylene that can be addressed with reasonable preventative actions.
- A summary of the basis for the distance recommendations can be found in the ARB Handbook.

4.3 APCD-APPROVED DUST SUPPRESSANTS

The following list of dust control suppressants are approved by the SLO County APCD. The approved suppressants must be reapplied at a frequency that ensures that fugitive dust emissions are adequately controlled to below the 20% opacity limit identified in the APCD Rule 401 *Visible Emissions* and to ensure that dust is not emitted offsite. If fugitive dust is not adequately controlled, emissions could result in complaints and a violation of APCD Rule 402 *Nuisance*. The APCD will consider products that are not listed on a case-by-case bases; provide product specifics to APCD by contacting the APCD Planning Division at (805) 781-5912.

Suppressants are often used in combination with other APCD recommended control methods to minimize fugitive dust emissions. Other methods include:

- 1) Paving and then maintaining to applicable standards thus replacing need for suppressants and other control methods;
- 2) Implementing and maintaining design standards to ensure vehicles speeds on unpaved areas are physically limited to a posted speed limit of 15 mph or less; and
- 3) For special events, site parking areas in grass or low cut dense vegetative areas that are adequately irrigated to minimize fugitive dust emissions.

SLO County APCD used a 2002 San Joaquin Valley APCD [1] list of dust suppressants as the starting point for the list presented below. Products that could not be readily found were removed from the list. This SLO County APCD list also streamlines the SJVAPCD list by removing hygroscopic products and all but one of the petroleum based products from the SJVAPCD list. A petroleum based method (chipseal) and three polymer products (Dust Binder, Gorilla-Snot, and Soiltac) were added to the list.

Any chemical or organic material used for stabilizing solids shall not violate the California State Water Quality Control Board standards for use as a soil stabilizer. Any dust suppressant must not be prohibited for use by the US Environmental Protection Agency, the California Air Resources Board, or other applicable law, rule, or regulation.

Table 4-2: Approved Dust Suppressants

Suppressant Category	Suppressant Sub-Category	Product Common Name	Company	Product Web Link
Adhesives	Lignosulfonate	• CalBinder	California-Fresno Oil Co. (209) 486-0220	www.calfresno.com
		• DC-22	Dallas Roadway Products, Inc. SALS Roadway Products (972) 758-7454	www.dallasroadway.com www.salsroadproducts.com
		• Dustac, Dustac-100	Georgia Pacific (866) 447-2436, (800) 283-5547	www.gp.com/chemical
		• Lignin LS-50™	Prince Minerals, Inc. (646) 747-4200	www.princeminerals.com/products/dust_control.php
		• Lignosulfonate	EnviroTech Services (800) 369-3878	www.envirotechservices.com
		• Polybinder	Jim Good Marketing (805) 746-3783	-
	Calcium Lignosulfonate	• Calcium Lignin LS-50™	Prince Minerals, Inc. (646) 747-4200	www.princeminerals.com/products/dust_control.php
		• Dustac® Road Binder	Quatsino Navigation Co. Ltd (916) 442-9089	http://www.bellmarine.com/Dustac.htm
Petroleum Emulsions	-	• PennzSuppress-D [2]	PennzSuppress® Dust Suppressant American Refining Group, Inc. (814) 368-1200	www.arb.ca.gov/eqpr/pennzoil/pennzoil.htm
Polymer	-	• DC-1000	Desert Mountain (505) 598-5730	www.desertmtncorp.com
		• Dust Binder	Monterey AgResources (559) 499-2100	www.montereyagresources.com

Suppressant Category	Suppressant Sub-Category	Product Common Name	Company	Product Web Link
		• Earthbound, Earthbound L	Earth Chem, Inc. (800) 764-5726	www.earthchem.com
		• Liquid Dust Control	Enviroseal Corporation (800) 775-9474	www.enviroseal.com/ldc.htm
		• Marloc	Reclamare Co. (206) 824-2385	-
		• PolyPavement	PolyPavement Company (323) 954-2240	www.polypavement.com
		• Soil Master WR	Environmental Soil Systems, Inc. (800) 368-4115	-
		• Soil Seal	Trans Western Chemicals, Inc. (562) 942-1833	www.soilseal.com
		• Soil Sement [2]	Midwest Industrial Supply, Inc. (800) 321-0699	www.arb.ca.gov/eqpr/midwest.htm
		• Soiloc-D	Hercules Soiloc (800) 815-7668	-
		• Soiltac or Gorilla-Snot	Soilworks, LLC (800) 545-5420	www.Soilworks.com
		• TerraBond PolySeal	Fluid Sciences, LLC (888) 356-7847	www.fluidsciences.com
		• Top Shield	Base Seal International, Inc. (800) 729-6985	www.baseseal.com
Oil-Rock Binding Agent	-	• Chipseal [3]	-	-

[1] Re: www.valleyair.org/busind/comply/PM10/Products%20Available%20for%20Controlling%20PM10%20Emissions.htm

[2] "Pre-certified" by the California Air Resources Board; www.arb.ca.gov/eqpr/eqpr.htm

[3] Though chipseal is typically used as a sealant for paved roads, it can also be an effective dust suppressant on unpaved private roads. Project proponents accept liability of potential vehicle or property damage associated with this dust control method.

4.4 SLO COUNTY NATURALLY OCCURRING ASBESTOS MAP

APCD Naturally Occurring Asbestos Zones

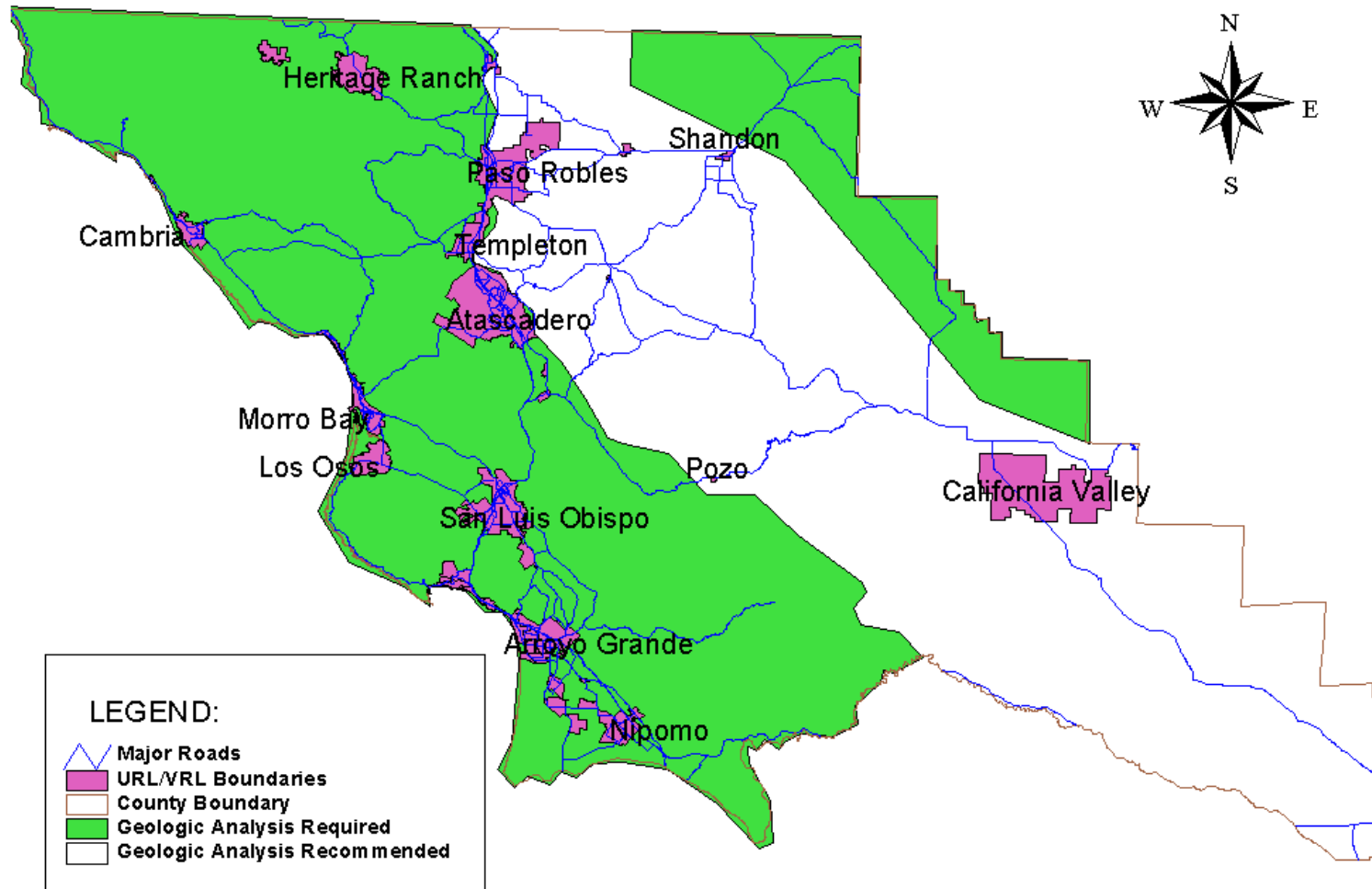


Figure 4-1: Naturally Occurring Asbestos Zones

4.5 CONSTRUCTION ACTIVITY MANAGEMENT PLAN GUIDELINES

A Construction Activity Management Plan (CAMP) may be required by the Air Pollution Control District (APCD) for construction projects that will result in significant particulate matter (PM) and/or nitrogen oxide (NO_x) emission impacts, such as potentially high emissions of fugitive dust or NO_x, or emissions in areas where potential nuisance concerns are present. The purpose of the CAMP is to specifically define the mitigation measures that will be employed as the project moves forward, in order to ensure all requirements are accounted for in the project budget, included in the contractor bid specifications, and are fully implemented throughout project construction.

The following information is provided as a guide for development of the CAMP. Specific implementation of mitigation measures will vary from project to project. **The CAMP is a comprehensive mitigation plan and will need to specifically identify all of the mitigation measures to be implemented for the project.** The following is a list of potential mitigation measures to include in the CAMP. The CAMP must be submitted to the APCD for approval prior to the start of the project.

Prior to commencement of any construction activities (e.g., site preparation, grading or construction activities) the applicant will notify the appropriate planning agency and the APCD, by letter, of the status of the air quality measures outlined in the CAMP. The letter will state the following: 1) the controls that will be implemented; 2) the reasons why any unimplemented measures are considered infeasible and the measures incorporated to substitute for these measures; 3) when scheduled construction activities will be initiated to allow for APCD inspection of the mitigation measures.

- **SENSITIVE RECEPTORS (NO_x and PM)**

The proximity of the project to the nearest residence and to the nearest sensitive receptor (e.g. school, daycare, hospital or senior center) needs to be documented and the mitigation measures outlined in the CAMP need to be tailored accordingly to provide adequate protection to any nearby sensitive receptors. (e.g. of mitigation measures: Locate construction staging areas away from sensitive receptors such that exhaust and other construction emissions do not enter the fresh air intakes to buildings, air conditioners, and windows).

- **MITIGATION MONITORING (NO_x and PM)**

A person or persons must be designated to monitor the CAMP implementation. This person will be responsible for compliance with the CAMP. Their duties shall include holidays and weekend periods when work may not be in progress. Depending on the site location, a certified visible emissions monitor may be required. The name and telephone number of such persons shall be provided to the APCD prior to the start of any construction activities.

- **DUST CONTROL (PM)**

Construction activities can generate fugitive dust, which could be a nuisance to local residents and businesses in close proximity to the proposed construction site. Dust complaints could result in a violation of the APCD's 402 "Nuisance" Rule. The following is a list of measures that may be required throughout the duration of the construction activities:

- a. Reduce the amount of the disturbed area where possible.
- b. Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
- c. All dirt stockpile areas should be sprayed daily as needed, covered, or an APCD approved alternative method will be used.
- d. Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities.

- e. Exposed ground areas that will be reworked at dates greater than one month after initial grading should be sown with a fast-germinating non-invasive grass seed and watered until vegetation is established.
- f. All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD.
- g. All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- h. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- i. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114.
- j. Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.
- k. Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.

All PM₁₀ mitigation measures required should be shown on grading and building plans. In addition, the contractor or builder should designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress. **The name and telephone number of such persons shall be provided to the APCD prior to land use clearance for map recordation and finished grading of the area.**

- **CONSTRUCTION PHASE GREENHOUSE GAS (GHG) EMISSION REDUCTIONS**

The Attorney General requires GHG impact evaluation and the implementation of feasible mitigation at the project level. As such, the project's Mitigated Negative Declaration should evaluate the project's carbon dioxide (CO₂) emissions as well as other GHG sources converted to carbon dioxide equivalents and should identify feasible mitigation that the project shall implement. The project's overall GHG impact evaluation should include:

- a. The short term GHG impacts from the construction phase amortized over the life of the project (50 years for residential or residential support facilities and 25 years for commercial or industrial facilities) to provide a mechanism for the project to mitigate these impacts by adding these amortized impacts to the operational phase impacts; and
- b. The project's operational phase GHG impacts.

For the construction phase (operational phase as well) feasible GHG mitigation measures to be implemented should be identified from the California Air Pollution Control Officer Association's (CAPCOA) January 2008 published document entitled "CEQA and Climate Change" or from other proven energy efficiency measures. The document is available online at:

www.capcoa.org/CEQA/CAPCOA%20White%20Paper.pdf

In some cases where the available measures are marginally effective, off-site GHG mitigation fees are appropriate.

- **CONSTRUCTION EQUIPMENT EMISSION REDUCTIONS (NO_x and PM)**

To mitigate air quality impacts from the emissions of construction equipment engines, the APCD has project proponents apply various emission reduction methods depending on the magnitude of the project. Below are the methods used:

Standard Control Measures for Construction Equipment

The standard mitigation measures for reducing nitrogen oxide (NO_x), reactive organic gases (ROG), and diesel particulate matter (Diesel PM) emissions from construction equipment are listed below:

- (a) Maintain all construction equipment in proper tune according to manufacturer's specifications;
- (b) Fuel all off-road and portable diesel powered equipment with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road);

- (c) 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;
- (d) 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;
- (e) Construction or trucking companies with fleets that do not have engines in their fleet that meet the engine standards identified in the above two measures (e.g. captive or NO_x exempt area fleets) may be eligible by proving alternative compliance;
- (f) 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;
- (g) Diesel idling within 1,000 feet of sensitive receptors is not permitted;
- (h) Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
- (i) Electrify equipment when feasible;
- (j) Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and,
- (k) Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.

Best Available Control Technology (BACT) for Construction Equipment

If the estimated construction phase ozone precursor emissions from the actual fleet for a given Phase are expected to exceed the APCD's threshold of significances after the standard mitigation measures are factored into the estimation, then BACT needs to be implemented to further reduce these impacts.

The BACT measures can include:

- Further reducing emissions by expanding use of Tier 3 and Tier 4 off-road and 2010 on-road compliant engines;
- Repowering equipment with the cleanest engines available; and
- Installing California Verified Diesel Emission Control Strategies. These strategies are listed at: <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>
- Implementing a design measure to minimize emissions from on and off-road equipment associated with the construction phase. This measure should include but not be limited to the following elements:
 - Tabulation of on and off-road construction equipment (type, age, horse-power, engine model year and miles and/or hours of operation);
 - Calculate daily worst case emissions and the quarterly emissions that include the overlapping segments of construction phases
 - Equipment Scheduling (NO_x and PM)
 - Schedule activities to minimize the amount of large construction equipment operating simultaneously during any given time period;
 - Locate staging areas at least 1000 feet away from sensitive receptors;
 - Where feasible:
 - Limit the amount of cut and fill to 2,000 cubic yards per day;
 - Limit the length of the construction work-day period; and,
 - Phase construction activities.

On-Road Truck Management (NO_x and PM)

- Schedule construction truck trips during non-peak hours to reduce peak hour emissions;
- Locate staging areas at least 1000 feet away from sensitive receptors;
- Proposed truck routes should be evaluated to define routing patterns with the least impact to residential communities and sensitive receptors and identify these receptors in the truck route map;
- To the extent feasible, construction truck trips should be scheduled during non-peak hours to reduce peak hour emissions; and
- Trucks and vehicles should be kept with the engine off when not in use, to reduce vehicle emissions. Signs shall be placed in queuing areas to remind drivers to limit idling to no longer than 5 minutes.

Offsite Mitigation for Construction Equipment

If the estimated construction phase ozone precursor emissions from the actual fleet for a given Phase are expected to exceed the APCD's 6 tons/quarter threshold of significance after the standard and BACT measures are factored into the estimation, then off-site mitigation is appropriate. The current mitigation rate is \$16,000 per ton of ozone precursor emission (NO_x + ROG) over the APCD threshold evaluated over the length of the expected exceedance. The applicant may use these funds to implement APCD approved emission reduction projects near the project site or may pay that funding level plus a 15% administration fee to the APCD for the APCD to implement emission reduction projects in close proximity to the project. The applicant shall provide this funding at least two (2) months prior to the start of the project to help facilitate emission offsets that are real-time as possible.

- **CONSTRUCTION WORKER TRIPS (NO_x)**

Implement an APCD approved Trip Reduction Program to reduce construction worker commute trips, which includes carpool matching, vanpooling, transit use, etc. Monitor worker use of alternative transportation throughout the project to ensure compliance.

- **COMPLAINT RESPONSE (NO_x and PM)**

The CAMP should include a section that addresses complaints and complaint handling. At a minimum this section shall include the following:

- The person(s) responsible for addressing and resolving all complaints regarding the construction activity and their contact information is:
 - Name(s)
 - Company and Title(s)
 - Phone numbers and physical address.
- A hotline telephone number shall be established and publicized to help facilitate rapid complaint identification and resolution. In addition, Prop 65 notification with regard to toxic diesel emissions shall to be made.
- An action plan section shall be outlined that includes additional measures or modifications to existing mitigation measures in the event of complaints.
- All complaints shall be reported immediately to the APCD.

- **PERMITTING REQUIREMENTS**

Portable equipment, 50 horsepower (hp) or greater, used during construction activities may require California statewide portable equipment registration (issued by the California Air Resources Board) or an APCD permit. Operational sources may also require APCD permits.

The following list is provided as a guide to equipment and operations that may have permitting requirements, but should not be viewed as exclusive. For a more detailed listing, refer to page A-5 in the APCD's CEQA Handbook.

- Power screens, conveyors, diesel engines, and/or crushers.
- Portable generators 50 hp or greater
- Chemical product processing and or manufacturing
- Electrical generation plants or the use of standby generator
- Food and beverage preparation (primarily coffee roasters)
- Furniture and fixture products
- Metal industries, fabrication
- Small scale manufacturing
- Auto and vehicle repair and painting facilities
- Fuel dealers
- Dry cleaning
- Pipelines
- Public utility facilities
- Boilers
- IC Engines
- Sterilization units(s) using ethylene oxide and incinerator(s)
- Cogeneration facilities

- Unconfined abrasive blasting operations
- Concrete batch plants
- Rock and pavement crushing
- Tub grinders trommel screens

To minimize potential delays, prior to the start of the project, please contact the APCD Engineering Division at (805) 781-5912 for specific information regarding permitting requirements.

- **SPECIAL CONDITIONS**

Naturally Occurring Asbestos

If the project site is located in a candidate area for Naturally Occurring Asbestos (NOA), which has been identified as a toxic air contaminant by the California Air Resources Board (ARB) the following requirements apply. Under the ARB Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations, prior to any construction activities at the site, the project proponent shall ensure that a geologic evaluation is conducted to determine if NOA is present within the area that will be disturbed. If NOA is not present, an exemption request must be filed with the APCD. If NOA is found at the site the applicant must comply with all requirements outlined in the Asbestos ATCM. This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the APCD. Please refer to the APCD web page at <http://www.slocleanair.org/business/asbestos.asp> for more information or contact the APCD Enforcement Division at (805) 781-5912.

Demolition of Asbestos Containing Materials

Demolition activities can have potential negative air quality impacts, including issues surrounding proper handling, demolition, and disposal of asbestos containing material (ACM). Asbestos containing materials could be encountered during demolition or remodeling of existing buildings. Asbestos can also be found in utility pipes/pipelines (transite pipes or insulation on pipes). If utility pipelines are scheduled for removal or relocation; or building(s) are removed or renovated this project may be subject to various regulatory jurisdictions, including the requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (40CFR61, Subpart M - asbestos NESHAP). These requirements include but are not limited to: 1) notification requirements to the APCD, 2) asbestos survey conducted by a Certified Asbestos Inspector, and, 3) applicable removal and disposal requirements of identified ACM. Please contact the APCD Enforcement Division at (805) 781-5912 for further information.

Lead During Demolition

Demolition of structures coated with lead based paint is a concern for the APCD. Improper demolition can result in the release of lead containing particles from the site. Sandblasting or removal of paint by heating with a heat gun can result in significant emissions of lead. Therefore, proper abatement of lead before demolition of these structures must be performed in order to prevent the release of lead from the site. Depending on removal method, an APCD permit may be required. Contact the APCD Engineering Division at (805) 781-5912 for more information. Approval of a lead work plan by the APCD is required and must be submitted ten days prior to the start of the demolition. Contact the APCD Enforcement Division at (805) 781-5912 for more information. For additional information regarding lead removal, please contact Cal-OSHA at (805) 654-4581.

4.6 Qualified GHG Plan Level Guidance

This guidance is intended to assist local governments in developing community scale Climate Action Plans. In drafting this guidance, the San Luis Obispo County Air Pollution Control District (APCD) has drawn from established methodologies and practices, rather than creating new protocols or quantification methods. This guidance should be interpreted as recommended approaches rather than a formal protocol. This guidance will be continually updated as new tools, methodologies and protocols are developed and refined.

Any Climate Action Plan (CAP) that aims to support tiering of future development projects for purposes of CEQA review of GHG impacts must include these standard elements.

- a. A community-wide GHG emissions inventory and "business-as-usual" forecast of year 2020 community-wide GHG emissions;
- b. GHG reduction targets consistent with AB 32;
- c. An analysis of local and state policies and actions that may impact GHG emissions within the jurisdiction;
- d. Quantification of GHG reduction measures demonstrating that, if fully implemented, the GHG reduction targets will be met;
- e. An implementation and monitoring strategy and timeline;
- f. An adequate environmental review of the proposed CAP.

Early consultation with APCD staff is essential; the importance of communicating with District staff early in the climate planning process cannot be overemphasized. District staff is available to meet with local government planners, review methodologies, discuss approaches and any other issues throughout the process of preparing the CAP.

An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project; if those requirements are not otherwise binding and enforceable, they must be incorporated as mitigation measures applicable to the project. If there is substantial evidence that the effects of a particular project may be cumulatively considerable, notwithstanding its compliance with the specified requirements in the plan for the reduction of greenhouse gas emissions, an EIR must be prepared for the project.

Qualitative Requirements for Qualified GHG Reduction Strategies

1) The GHG emissions inventory should be complete and comprehensive

Any GHG emissions source addressed in this guidance should be included in the GHG inventory and forecast for the local CAP. If an emissions source is not included (for example, direct access electricity use or wastewater treatment), it should be clearly explained why that source was omitted. District staff will review this explanation as part of the evaluation of the CAP.

2) Calculations and assumptions should be transparent

It is important to emphasize that all methodologies and assumptions should be documented and explained within the CAP document.

3) GHG reduction strategies should rely primarily on mandatory measures

To date, most CAPs have emphasized voluntary GHG reduction measures over mandatory measures, indicated with language like "should promote," and "will encourage," etc. However, because implementation of voluntary measures cannot be guaranteed, their contribution to meeting the GHG reduction target is more speculative than that of mandatory measures. Problems that may result from over-reliance on voluntary measures include the following:

- It could be very difficult for local jurisdictions to demonstrate that GHG reduction targets are being met through voluntary measures.
- This, in turn, will make it difficult for a local government to determine if a project is complying with the adopted CAP in order to appropriately tier off of the CAP CEQA document.
- If the local government cannot document that its CAP is on track to achieve the GHG reduction

target, then the CAP may cease to comply with the "qualified" criteria. In this case subsequent projects would not be eligible to benefit from the tiering provisions of CEQA.

If voluntary measures are included in the CAP, distinctions should be drawn between those that are more or less likely to result in full implementation. For example, incentive-based programs (like AB 811 programs) are usually more likely to achieve results than outreach-based programs. Some CAPs have taken a cautious approach and have not quantified GHG reductions from the latter type of measure, due to their highly speculative nature. The APCD recommends only mandatory measures and strong voluntary measures (such as incentive-based programs) be quantified as contributing toward the GHG reduction target.

4) *Build in a margin of safety*

Once the CAP enters the implementation phase it is possible that unforeseen issues or obstacles may arise that prevent full implementation of all CAP measures, or the emission reductions achieved for some measures may be less than anticipated. These risks may be heightened by unforeseen economic or political developments that adversely affect implementation of the measures. Therefore, APCD recommends the CAP build in a margin of safety to ensure it can continue to serve as a defensible "Qualified GHG Reduction Strategy." This can be accomplished by:

- Including more GHG mitigation measures than needed to meet the GHG reduction target, thus creating a "buffer" against lower than anticipated results;
- Emphasizing mandatory over voluntary measures;
- Including contingency measures (with quantified emission reduction estimates) that can be activated to fill any gap needed to maintain the expected rate of progress toward achieving the emissions reduction target.

5) *Measures should address existing as well as new development*

The AB 32 target of reducing GHG emissions to 1990 levels by 2020 represents an initial step toward achieving the longer term goal of Executive Order S-3-05, which calls for reducing GHG emissions to 80% below 1990 levels by 2050; this equates to less than 2 metric tons of GHGs per capita. Reducing GHG emissions from new development alone cannot provide sufficient GHG reductions to achieve this long-term target. Therefore, climate action plans should address energy use and emissions from existing development as well. In its review of climate action plans, the APCD recommends aggressive and innovative strategies to achieve emission reductions from existing as well as new development.

6) *Implementation and monitoring should be clearly defined*

The parameters for determining if the CAP is being fully implemented, and if development projects are consistent with the CAP, must be clearly laid out. If a local government plans to tier future projects off the environmental review performed on a CAP, the monitoring program should include the following elements:

- *Annual tracking/reporting on implementation of all CAP measures, including measures that address existing development.* The phasing-in of mitigation measures should be addressed (i.e. — have all the measures that were to have been adopted or expanded in the past year actually been adopted/expanded?).
- *Annual reporting of how new development projects have been implementing CAP measures.* Tracking individual project attributes and implementation of mitigation measures should be done on a project-by-project basis. This can be facilitated through the use of a compliance checklist for new development projects to demonstrate consistency with the plan (listing all mandatory and voluntary measures that apply to new development) and whether the project is implementing the measures; the District will request a copy of this checklist (or similar documentation) when reviewing projects for CEQA.
- *Annual review of the State's implementation of measures included in the CAP.* Are state-level policies achieving the reductions anticipated?
- *Periodic update of the GHG inventory.* The APCD recommends updating the community-wide GHG inventory at least once every 5 years. However, updating the inventory on a more

frequent basis may improve the ability to monitor progress toward achieving the GHG reduction target in the CAP.

- *Analysis of whether the CAP is still a "qualified" plan for CEQA purposes.* The analysis should be based on level of implementation and effectiveness of measures.

4.7 Employees per 1000 sf, Based on Land Use

Table 4-3: Employees Based on Land Use

LAND USE	Employees per 1000sf
Automobile Care Center	2.47
Bank (w/drive-through)	1.59
City Park	0.23
Convenience Market w/gas pumps	2.50
Day-Care Center	1.01
Elementary School	0.55
Fast Food Restaurant w/drive-thru	6.22
Fast Food Restaurant w/o drive-thru	1.74
Gasoline/Service Station	2.22
General Light Industry	1.54
General Office Building	2.52
Golf Course	2.96
Government Office Building	3.63
Hardware/Paint Store	1.56
Health Club	2.47
High Turnover (Sit Down Restaurant)	1.97
Hospital	1.07
Hotel	0.64
Library	0.39
Medical Office Building	3.33
Motel	0.95
Place of Worship	0.80
Quality Restaurant	1.19
Refrigerated Warehouse-No Rail	0.66
Regional Shopping Center	1.39
Strip Mall	2.39
Unrefrigerated Warehouse-No Rail	0.84
Employees Per 1000sf developed from the historical trend analysis based on historical permit data from SLOCOG for the years 2001 to 2010	