



air pollution control district
SANTA BARBARA COUNTY



Santa Barbara County Air Pollution Control District

CEQA Handbook

A Guide for the Preparation of Air Quality Sections in
Environmental Documents

Updated October, 2025

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1 INTRODUCTION

This document provides guidance for assessing and mitigating air quality and greenhouse gas (GHG) impacts of proposed development projects. It is updated as new information and methodologies become available.

The Santa Barbara County Air Pollution Control District (District) is a local government agency whose mission is to protect the people and the environment of Santa Barbara County from the effects of air pollution. The District performs a number of functions which include: preparing and updating ozone plans (previously called clean air plans); implementing state and federal air pollution control laws; adopting, administering, and enforcing air pollution control rules and regulations; overseeing a network of air quality monitoring stations; administering incentive and grant programs; and public engagement/education. In addition, the District acts as a Lead Agency, Responsible Agency, or Concerned Agency with jurisdiction by law over the air resources of Santa Barbara County under the California Environmental Quality Act (CEQA). In this capacity, the District considers the air quality and GHG impacts of proposed land use projects.

The District is a Responsible Agency under CEQA for projects that include equipment or operations requiring a District permit. As a Responsible Agency, the District considers the environmental document prepared by the Lead Agency when reaching a conclusion on whether and how to issue District permits. Therefore, to streamline the process and avoid the need for additional CEQA documentation, it is recommended that the Lead Agency consult with the District on preparation of an adequate environmental analysis of air quality and GHG impacts of all proposed projects that involve stationary source permitted sources.

The District Board of Directors is a thirteen-member body that consists of the five Santa Barbara County Board of Supervisors and one representative from each of the eight incorporated cities. On October 19, 1995, the District Board adopted the District's *Environmental Review Guidelines for the Implementation of CEQA*.¹ The *Guidelines* were most recently revised in 2015 and include criteria for evaluating the significance of adverse air quality and GHG impacts from projects subject to CEQA. The *Guidelines* include thresholds of significance that are applied during the CEQA review of projects for which the District is Lead Agency and recommended for CEQA review of all other projects throughout the region, for which the District is a Responsible or Concerned Agency (absent locally-adopted thresholds).

For assistance in applying the guidance from this document please contact District Planning Division staff at (805) 979-8050 or by email at: CEQAGroup@sbcapcd.org. **For the most recent version of this document please visit the District website at www.ourair.org/environmental-review-resources-and-notices/.**

¹ see www.ourair.org/environmental-review-resources-and-notices/ for download

2 GLOSSARY OF TERMS AND ACRONYMS

AB 32 – Assembly Bill 32, the California Global Warming Solutions Act of 2006.

Air Pollution Control District (District) - A local/regional agency with jurisdiction over stationary sources of air pollution. The District's jurisdictional area is the same as the geographical boundaries of Santa Barbara County, including areas within incorporated city urban reserve lines (or boundaries).

Air Quality Impact Assessment (AQIA) – A modeling analysis to determine if a project has the potential to cause or contribute to a violation of an air quality standard.

Airborne Toxics Control Measure (ATCM) – A regulation developed by the California Air Resources Board to limit emissions of toxic air contaminants such as diesel particulate, perchloroethylene, asbestos, etc.

Authority to Construct (ATC) Permit – A permit issued by the District prior to commencement of project construction.

Average Daily Trips (ADT) – The average number of vehicle trips to and from a location on a typical day.

CAAQS – California Ambient Air Quality Standard(s) established by CARB to protect public health.

California Air Resources Board (CARB) – The state agency that regulates consumer products and mobile sources of air pollution in the State of California. CARB is also tasked with implementing climate change legislation in the state.

California Emission Estimator Model (CalEEMod) – A statewide land use emissions computer model that quantifies potential criteria pollutant and greenhouse gas emissions associated with both construction and operations from a variety of land use projects.

Cap-and-Trade – A market-based regulation designed to reduce greenhouse gases from multiple sources by providing economic incentives for achieving emission reductions.

Carbon Monoxide (CO) – An air pollutant formed by combustion processes of carbon-containing fuels (such as gasoline or wood). Emissions of CO lead to human health impacts.

CEQA Guidelines – Title 14, California Code of Regulations, Chapter 3, Guidelines for Implementation of the California Environmental Quality Act, Sections 15000 et. seq.

CEQA Statute – California Environmental Quality Act, California Public Resources Code, Division 13, Environmental Quality, Sections 21000 et. seq. is the state regulation that requires public agencies to assess and mitigate potential environmental impacts of projects they approve.

EMission FACTors Model (EMFAC) – An emissions model developed and used by the California Air Resources Board to assess emissions from on-road vehicles including cars, trucks, and buses in California.

Environmental Impact Report (EIR) – A document prepared pursuant to CEQA for projects with significant impacts.

Fugitive Emissions – Unintentional releases of gases and vapors into the atmosphere from non-point sources, such as leaks from pipes, valves, or equipment.

Greenhouse Gases (GHGs) – Pollutants that are known to increase the greenhouse effect in the earth’s atmosphere, thereby adding to global climate change impacts. Numerous pollutants have been identified as GHGs, including carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). The State of California defines GHGs in the Health & Safety Code, §38505(g).

Hazardous Air Pollutants – Air pollutants listed under the Clean Air Act that are known or suspected to cause cancer or other serious health effects.

Health Risk Assessment (HRA) – An assessment of the acute (immediate) and chronic (cumulative) effects that a project will have on human health.

Initial Study (IS) – Initial evaluation of a project, prepared pursuant to CEQA, to determine whether significant environmental impacts exist. Depending on the outcome of the IS, the Lead Agency may proceed with a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report.

Institute of Transportation Engineers (ITE) – An organization of transportation professionals who develop trip rates for different land use types.

Lead Agency – The agency that has discretionary authority over a permit action or decision that is subject to CEQA.

Mandatory Reporting Regulation (MRR) – Title 17, California Code of Regulations (CCR), sections 95100-95157. Reporting of greenhouse gases by major sources is required by AB 32. The MRR is applicable to industrial facilities, fuel suppliers, and electricity importers.

NAAQS – National Ambient Air Quality Standard(s) are limits set by the [U.S. Environmental Protection Agency](#) to protect public health and welfare from harmful air pollutants.

Negative Declaration (ND) or Mitigated Negative Declaration (MND) – A declaration prepared in compliance with CEQA that states that a project will not have a significant impact on the environment (ND) or that a project will not have significant impacts if documented mitigation measures are adopted and enforced (MND).

New Source Review (NSR) – the Santa Barbara County Air Pollution Control District’s permitting program that evaluates air pollution and proposed emission controls for new stationary sources of air pollution.

Notice of Preparation (NOP) of an Environmental Impact Report – An official public notice, issued by the CEQA Lead Agency, that an Environmental Impact Report will be prepared pursuant to CEQA.

Odor Abatement Plan (OAP) – A management plan to abate offensive smells from odor-emitting sources.

Oxides of Nitrogen (NO_x) – An air pollutant (includes nitrogen oxide, or NO, and nitrogen dioxide, or NO₂). NO_x is typically a product of combustion. Emissions of NO_x lead to human health impacts and to the formation of ozone.

Ozone (O₃) – A pollutant of regional concern, formed in the lower atmosphere by a combination of ozone precursors (ROC, NO_x) in the presence of heat and sunlight.

Ozone Plan - The District’s plans to meet and/or maintain state and federal air quality standards, as applicable (note that this document was previously known as the Clean Air Plan).

Particulate Matter (PM_{2.5}, PM₁₀, diesel PM) – Fine particulate matter that remains suspended in the atmosphere and can be inhaled into human lungs. PM₁₀ is particulate matter that measures 10 microns or less in diameter and PM_{2.5} is 2.5 microns or less. Diesel PM is particulate matter that is emitted from diesel-fueled combustion devices.

Permit to Operate (PTO) – A permit issued by the District prior to operation of a project. The PTO allows for the on-going operation of the facility in accordance with all permit conditions and local, state, and federal air quality requirements.

Reactive Organic Compounds (ROC) – Pollutants that react in the atmosphere to form ozone. Refer to District Rule 201 for a regulatory definition of this term.

Santa Barbara County Association of Governments (SBCAG) – Regional planning agency that plans and manages a variety of transportation project and programs.

SB 32 – Senate Bill 32 sets a legal requirement for the state's greenhouse gas emissions to be reduced to 40% below 1990 levels by 2030.

Sensitive Receptor - Children, elderly, pregnant women, or individuals with existing heart or lung conditions, and others who are at a heightened risk of negative health outcomes due to exposure to air pollution. The locations where these sensitive receptors congregate are considered sensitive receptor locations (e.g. residences, childcare facilities, schools, elderly care facilities, hospitals etc.).

Soil Vapor Extraction (SVE) – a treatment process for in situ (onsite) remediation of volatile contaminants in soils.

Stationary Source – Any building, structure, facility, or installation which emits or may emit an air pollutant directly or as fugitive emissions.

Toxic Air Contaminant (TAC) – An air pollutant that is considered to have toxic attributes, be them acute (immediate), chronic (cumulative), or both. Refer to California Health & Safety Code Section 39655 for a regulatory definition of this term. TACs are also known as air toxics.

Transportation Control Measures (TCM) – Programs or activities that states and localities can implement to encourage the traveling public to reduce emissions from on-road vehicles. The District's Ozone Plan lists TCMs for Santa Barbara County.

Transportation Refrigeration Unit (TRU) - Refrigeration systems (usually diesel-powered) that refrigerate products that are transported in various containers, commonly in truck trailers.

3 CONTENTS OF CEQA DOCUMENTS

In general, for projects without potentially significant impacts, or mitigatable impacts, the analysis in an Initial Study/Negative Declaration (or Mitigated Negative Declaration) should include a brief description of the air quality setting, project-specific and cumulative impacts and applicable significance thresholds, consistency with the most recent Ozone Plan, and any applicable mitigation measures. All calculations and assumptions used in assessing air quality impacts should be included.

As required by CEQA, for projects with potentially significant impacts, the air quality analysis in environmental impact reports (EIRs) should, at a minimum, include the following elements:

- existing environmental setting of the area affected by the project, in terms of climate and current air quality; see Section 4 of this document
- a discussion of all direct and indirect, long-term and short-term, air quality and GHG impacts of the proposed project and the classification of the significance of long-term impacts using established criteria; see Section 5 of this document
- consistency and conformity of the project with local and regional plans, including the most recent Ozone Plan and other plans; see Section 5.7
- significant cumulative air quality impacts of the project; see Section 5.10
- mitigation measures to avoid or reduce potentially significant air quality impacts, including effectiveness of mitigation measures and discussion of residual impacts; see Section 6
- evaluation of all feasible alternatives to the project which would reduce air quality impacts, including the air quality impacts of the "No Project" alternative and the environmentally superior alternative
- listing all required air quality mitigation measures in the Mitigation Monitoring and/or Reporting Plan, including details on the implementation of each identified mitigation measure to ensure that they are enforceable and carried out as specified
- appendices containing all calculations and assumptions used in assessing air quality impacts

For more specific guidance on CEQA requirements, see the following resources:

- AEP's annual CEQA Statute & Guidelines Book available at www.califaep.org
- California Natural Resources Agency: <http://resources.ca.gov>
- California Governor's Office of Land Use and Climate Innovation (formerly Office of Planning and Research): <https://lci.ca.gov/ceqa/>

4 ENVIRONMENTAL SETTING

It is necessary to know the environmental setting of a proposed project as a baseline against which to measure the project's impact. The environmental setting should be described both from a local and a regional perspective. CEQA Guidelines Section 15125 (a) states, "*The description of the environmental setting shall be no longer than is necessary to an understanding of the significant effects of the proposed project and its alternatives.*" The following aspects of the environmental setting may be included in the environmental document:

- climatological, meteorological and topographical features that may influence the project's effects on local and regional air quality
- applicable federal, state and District rules and regulations, including emission standards and ambient air quality standards
- current air pollution problems within the county, and the effects of pollutants such as ozone precursors (NO_x and ROC), PM₁₀ and PM_{2.5}, and PM₁₀ precursors (NO_x and SO_x)
- current status of GHG emissions inventory, impacts, and regulation

The environmental setting section should include a description of surrounding land uses and whether the project and the surrounding land uses are compatible or have the potential to cause localized air quality and health risk impacts.

It may be appropriate to incorporate by reference relevant portions of previously certified environmental documents or the most recent air quality plan in describing the local or regional environmental setting. If this is done, a summary or description of the incorporated material and its relationship to the document should be included.

4.1 Regulatory Framework

4.1.1 Federal

The Federal Clean Air Act, as amended in 1990, establishes National Ambient Air Quality Standards (NAAQS), federal permit requirements for major sources, and regulations for hazardous air pollutants. There are many federal laws that pertain to emissions standards for criteria air pollutants and hazardous air pollutants. Many of the federal programs and emissions standards are incorporated in the District's rules and regulations and are implemented and enforced as part of the District's stationary source permitting and compliance programs.

4.1.2 State

The California Air Resources Board (CARB) establishes California Ambient Air Quality Standards (CAAQS) as authorized by the California Health & Safety Code, §39606. The standards are established for protection of public health, safety and welfare, and consider protection for even the most sensitive individuals in our communities.

CARB regulates mobile sources of air pollution, including motor vehicles and heavy-duty diesel trucks. CARB also regulates air pollutants from consumer products such as household cleaners and beauty products and establishes motor vehicle fuel specifications for gasoline and diesel fuel to minimize air quality impacts. In order to reduce emissions from toxic air contaminants, CARB has implemented airborne toxic control measures (ATCMs) that apply to a variety of industries. As part of its Diesel Risk Reduction Plan, CARB has implemented a number of ATCMs that apply specifically to diesel engines and diesel vehicles to minimize the carcinogenic health risk that results from emissions of diesel particulate matter.

4.1.3 Local

The Santa Barbara County Air Pollution Control District (District) is the air pollution control agency in Santa Barbara County. The District jurisdiction covers the entire county including the incorporated cities of Buellton, Carpinteria, Goleta, Guadalupe, Lompoc, Santa Barbara, Santa Maria, and Solvang. The District also has jurisdiction over Vandenberg Space Force Base pursuant to the waiver of sovereign immunity under Section 116 of the Clean Air Act. Under Section 328 of the Act, EPA adopted 40 CFR Part 55 that delegated authority to the District to regulate and permit stationary sources on the Outer Continental Shelf for which the District has been designated the corresponding onshore area.

The District has regulatory authority over air pollutant emissions from stationary sources. The District's rules and regulations have been adopted and revised over time to meet the specific air quality needs of Santa Barbara County with consideration of the types of industries that operate in the region. Stationary sources need a District permit before constructing, modifying, replacing, or operating any equipment or process which may cause air pollution.

Examples of sources that need/may require District permits include:

- oil and gas facilities
- gas stations
- dry cleaners
- asphalt and cement batch plants
- operators of rock crushing and screening equipment
- auto body shops
- commercial aerospace (excluding launches)
- wineries and breweries
- post-harvest cannabis operations
- contaminant soil cleanup (dig and haul and soil vapor extraction systems)
- operators of large boilers
- operators of internal combustion engines 50 brake horsepower or greater

For a more detailed list of sources that may require a District permit, please see www.ourair.org/apcd-permit-process/.

4.2 Attainment Planning

The State of California has established ambient air quality standards to protect human health. The federal government has also established health-based standards. State and federal standards have been established for the following criteria pollutants:

- ozone (O₃)
- carbon monoxide (CO)
- nitrogen dioxide (NO₂)
- sulfur dioxide (SO₂)
- particulate matter less than 10 microns in diameter (PM₁₀)
- particulate matter less than 2.5 microns in diameter (PM_{2.5})
- lead (Pb)

In addition, California has standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. Ambient air quality in a given location is described by the concentration of various pollutants in the atmosphere, which are expressed in units of concentration, generally parts per million ("ppm") or micrograms per cubic meter ("µg/m³"). The significance of a pollutant concentration is determined by comparing it with an appropriate federal and/or state ambient air quality standard.

4.2.1 Attainment Status

Ambient air quality in Santa Barbara County is generally good, and federal and state attainment designations are periodically updated. For the County's current federal and state attainment designations visit our website at www.ourair.org/air-quality-standards. To query and view air quality data for various pollutants, such as exceedance summaries by year, visit CARB's iADAM air quality statistics database at www.arb.ca.gov/adam/index.html.

4.2.2 Clean Air Planning

The California Clean Air Act requires CARB to evaluate and identify air quality related indicators for the District to use in assessing its progress toward attainment of the state standards. The District prepares air quality attainment plans to provide an overview of air quality and sources of air pollution and to identify pollution control measures needed to meet and maintain clean air standards. This District is required to assess its progress triennially and report to CARB as part of the triennial plan revision. The most recent air quality attainment plan, the Ozone Plan, is available at www.ourair.org/planning-clean-air/. The plans are adopted by the Santa Barbara County Air Pollution Control District Board of Directors and include a local plan to attain the California 8-hour ozone standard.

4.3 Greenhouse Gas Inventory and Regulation

Fossil fuel combustion represents the vast majority of the anthropogenic GHG emissions, with carbon dioxide being the primary GHG. For current information on the total inventory of U.S. GHG emissions and California's GHG emissions, see the following resources:

- United States Environmental Protection Agency (USEPA): www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks
- CARB: www.arb.ca.gov/cc/inventory/inventory.htm.

To address climate change in a comprehensive way, the California legislature adopted Assembly Bill 32 (AB 32) in 2006. AB 32 required CARB to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first considered by CARB in 2008 and scheduled to be updated every five years. Since 2008, there have been two updates to the Scoping Plan. Many of the GHG reduction measures and programs identified in the AB 32 Scoping Plan relate to stationary sources of air pollution, including the Mandatory Reporting Regulation and the Cap-and-Trade Program. In September 2016, the legislature adopted Senate Bill 32 (SB 32) that extends GHG reduction goals beyond AB 32's initial target year of 2020 by directing CARB to ensure that GHGs are reduced 40% below the 1990 level by 2030. The 2022 Scoping Plan, approved by CARB in December 2022, lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by Assembly Bill 1279.

To address global climate change impacts in the CEQA process, lawmakers enacted Senate Bill 97 in 2007 which directed the California Office of Planning and Research (renamed in 2024 to the Office of Land Use and Climate Innovation) to develop amendments to the CEQA Guidelines to address the analysis and mitigation of GHG emissions. These amendments became effective March 18, 2010. Additional amendments, including changes to CEQA Guidelines Section 15064.4, became effective December 28, 2018. On April 30, 2015, the District Board adopted revisions to the District *Environmental Review Guidelines*² that included a threshold of significance for GHGs (see section 5.1.2).

² Available at www.ourair.org/wp-content/uploads/APCDCEQAGuidelinesApr2015.pdf.

5 AIR QUALITY AND GREENHOUSE GAS IMPACTS

The air quality and GHG analysis should assess criteria pollutant, GHG, and toxic air contaminant impacts (if applicable) generated from the construction and operation of the proposed project. This may include (but is not limited to) combustion exhaust and fugitive dust generated from onsite and offsite mobile sources (including off-road equipment), emissions from permitted and unpermitted combustion equipment (e.g., heaters, generators, boilers etc.), fugitive hydrocarbon emissions, and indirect GHG emissions from electricity use, water use, and waste disposal. Air quality impacts should be based on project-specific information and supported by technical studies whenever possible. Emission estimates should be calculated using the latest available modeling software and emission factors for various emission sources.

Once emissions from the proposed project are quantified, project emissions and impacts should be compared to the thresholds of significance being applied to the project to determine whether the project results in significant air quality impacts under CEQA. For the purpose of CEQA impact analysis, the incremental impact of the project should be evaluated and compared to applicable thresholds of significance. The Lead Agency should determine the appropriate air pollutant emissions baseline for the project. The proposed project's emissions should be based on the entire facility's "potential to emit," assuming a worst-case operational scenario for existing equipment and activities as well as for all proposed new equipment and activities. If the proposed project includes multiple operating scenarios, each of these scenarios should be quantified and included in the analysis.

In addition to assessing a proposed project's criteria pollutant, GHG, and toxic air contaminant emissions, the following issue areas should be addressed for all projects: an evaluation of whether the project will contribute to a violation of any California or National Ambient Air Quality Standard (see Section 5.5), a discussion of consistency with the policies and measures in the project jurisdiction's general plan, and the current air quality plans (see Section 5.7), and whether the project would contribute to a public nuisance (see Section 5.8) or a cumulative impact (see Section 5.10).

Classification of all air quality impacts using the most recent version of the District's *Environmental Review Guidelines* or the adopted environmental review standards for the applicable CEQA Lead Agency should be included in the CEQA document.

5.1 Thresholds of Significance

Thresholds of significance are intended to supplement provisions in the State CEQA Guidelines, including Sections 15064, 15065, and 15382, for determining significant effects. Thresholds of significance provide general guidance for determining significant impacts but are not ironclad definitions of significant impacts. Each project must be judged individually for its potential for significant impacts based on specific circumstances and evidence.

The District's air quality significance criteria are applied during the CEQA review of projects for which the District is the Lead Agency. Air quality impacts for land use projects should be evaluated using the thresholds of significance adopted or used by the jurisdiction in which the project is located. In the absence of locally-adopted thresholds, the District's air quality thresholds are recommended for CEQA review of all other projects in the county for which the District is a Responsible Agency or a Concerned Agency.

The District does not currently have quantitative thresholds of significance in place for short-term or construction emissions. See Section 5.2. for more information on the evaluation of short-term or construction emissions.

The District Board has adopted the thresholds of significance that are defined in the section below.

5.1.1 Air Quality

A proposed project will not have a significant impact on air quality, either individually or cumulatively, if operation of the project will:

- emit (from all project sources, both stationary and mobile) less than the daily trigger for offsets set in the District New Source Review Rule³, *for any pollutant (i.e., 240 pounds per day [lb/day]) for ROC or NO_x or SO_x; and 80 lb/day for PM₁₀. There is no daily operational threshold for CO as it is an attainment pollutant⁴*; and
- emit less than 25 lb/day of NO_x or ROC from motor vehicle trips only; and
- not cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone)⁵; and
- not exceed the District health risk public notification thresholds adopted by the District Board (10 excess cancer cases in a million for cancer risk and a Hazard Index of more than one [1.0] for non-cancer risk); and
- be consistent with the latest adopted federal and state air quality attainment plans for Santa Barbara County.

Table 1: Thresholds of Significance for Operational Criteria Pollutant Emissions

Emissions Source	Criteria Pollutant Threshold					
	NO _x	ROC	CO	SO _x	PM ₁₀	PM _{2.5}
Motor Vehicle Trips Only	25 lb/day	25 lb/day	-	-	-	-
Total Operational Emissions	240 lb/day	240 lb/day	-	240 lb/day	80 lb/day	-

Table 2: Thresholds of Significance for Toxic Air Contaminants⁶

Risk Type	Toxic Air Contaminant Threshold
Cancer Risk	≥10 excess cancer cases in a million
Non-Cancer Risk (Chronic and Acute)	> 1.0 Hazard Index

5.1.2 Greenhouse Gases

The following thresholds are applicable to stationary source projects and were not designed to be applicable to land use development projects/plans (e.g., residential and commercial development). 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 adverse environmental impact. (Please note that the District is rarely the CEQA Lead Agency on a stationary source project, since such projects typically

³ The District New Source Review Rule (NSR) as it existed at the time the District Environmental Review Guidelines were adopted in October, 1995.

⁴ Due to the relatively low background ambient CO levels in Santa Barbara County, localized CO impacts associated with congested intersections are not expected to exceed the CO health-related air quality standards. Therefore, CO “Hotspot” analyses are no longer required.

⁵ See Section 5.5 *Ambient Air Quality Standards and Air Quality Impact Analysis* for additional guidance on determining the significance of this impact criteria.

⁶ For more detail on significant health risk thresholds, see Section 4.7 of the District’s *Modeling Guidelines for Health Risk Assessments* (APCD-15i) available at www.ourair.org/air-toxics-for-business.

require a land use permit from the county or a city planning department. For example, the County of Santa Barbara has its own adopted GHG threshold that is applied when issuing land use permits.)

A proposed **stationary source** project will not have a significant GHG impact, if operation of the project will:

- Emit less than the screening significance level of 10,000 metric tons per year (MT/yr) carbon dioxide equivalent (CO₂e), or
- Show compliance with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions (sources subject to the AB 32 Cap-and-Trade requirements pursuant to Title 17, Article 5 [California Cap on Greenhouse Gas Emissions and Market-based Compliance Mechanisms] would meet the criteria), or
- Show consistency with the AB 32 Scoping Plan GHG emission reduction goals by reducing project emissions 15.3% below Business As Usual (BAU)*.

Table 3: Thresholds of Significance for Greenhouse Gas Emissions from Stationary Source Projects

Greenhouse Gas Threshold
10,000 MT CO ₂ e/year OR Compliance with a Qualified Greenhouse Gas Reduction Plan OR Consistency with the AB 32 Scoping Plan (15% below BAU) ⁷

5.2 Short-term and Construction Emissions

Earth-moving operations and use of heavy construction equipment can generate fugitive dust and engine exhaust emissions that could impact local air quality and climate change.

5.2.1 Guidance for Disclosure and Significance Determination

The District does not currently have quantitative CEQA thresholds of significance in place for short-term or construction emissions. Although quantitative thresholds of significance are not currently in place for short-term emissions, CEQA requires that short-term impacts, such as exhaust emissions from construction equipment and fugitive dust generation during grading, be discussed in the environmental document, and that a determination of the significance of those impacts be made. Therefore, the District recommends that construction-related NO_x, ROC, SO_x, PM₁₀, PM_{2.5}, and GHG emissions from diesel and gasoline powered equipment, earth moving, paving, and other activities, be quantified and disclosed in the CEQA document.

CEQA Lead Agencies may use 25 tons per year for any criteria pollutant, except carbon monoxide, as a guideline for determining the significance of construction impacts. This guideline is derived from District Rule 202.D.16 that specifies the threshold at which a permitted stationary source would have to provide offsets for construction emissions. Specifically, Rule 202.D.16 states that if the combined emissions from all construction equipment used to construct a stationary source which requires an Authority to Construct permit have the potential to exceed 25 tons of any pollutant, except carbon monoxide, in a 12-month period, the owner of the stationary source shall provide offsets under the provisions of Rule 804 and shall

⁷ Due to numerous court decisions since this threshold's adoption, as well as the fact that this criteria does not address emission reduction goals beyond 2020, this threshold criteria is no longer supportable. The District advises agencies to consult with their legal counsel and conduct a case-by-case determination of significance for projects that result in emissions greater than 10,000 MTCO₂e/yr and do not comply with an approved GHG reduction plan/mitigation program (such as Cap-and-Trade).

demonstrate that no ambient air quality standard will be violated. Importantly, it should be noted that the Rule 202.D.16 offset threshold is not an adopted CEQA threshold by the District. If this 25 ton/yr guideline is utilized by a Lead Agency on a project-specific basis, the Lead Agency should cite the threshold as the Lead Agency's, not the District's, and a discussion of the basis for the threshold should be provided.

In regards to potential health risk impacts to sensitive receptors associated with toxic air contaminants from construction-phase activities and equipment, see Section 5.6.1 *Health Risk Assessments* for more information and guidance.

5.2.2 Mitigation for Construction Emissions

Appropriate mitigation measures to reduce or avoid emissions to the maximum extent feasible should be applied. Santa Barbara County violates the state standard for PM₁₀, therefore standard dust control measures should be implemented for any discretionary project involving earth-moving activities regardless of the significance of the fugitive dust impacts (see Section 6.1.1). Some projects have the potential for construction-related dust to cause a nuisance. District Rule 303, *Nuisance*, prohibits the emissions of air contaminants, including dust, that cause nuisance or annoyance to a considerable number of people or that present a threat to public health, or damage to property. Construction activities that violate Rule 303 are subject to District enforcement action. Standard dust control measures are generally effective at preventing dust pollution violations and problems, however more aggressive measures may be warranted based on project-specific impacts and conditions.

The State of California considers particulate matter emitted by diesel engines carcinogenic. Therefore, in order to minimize public exposure to air pollution, projects should implement the District's recommended diesel exhaust control measures to the maximum extent feasible (see Section 6.1.2). The Lead Agency should condition standard measures, and any additional measures deemed necessary to adequately control fugitive dust and protect sensitive receptors from exposure to air pollution, as part of the Lead Agency's permit approval for the construction, grading, or earth-moving activities.

5.3 Long-term/Operational Emissions

Long-term project emissions generated by a proposed project may include emissions from mobile sources, area sources, and stationary sources. For most projects, emissions primarily stem from motor vehicles and from stationary sources that may require permits from the District. Examples of stationary emission sources include gas stations, auto-body shops, diesel generators, boilers and large water heaters, dry cleaners, oil and gas production and processing facilities, and water treatment facilities. For a more detailed list of equipment and processes that may require District permits, please see: www.ourair.org/apcd-permit-process/. Other sources such as residential heating and cooling equipment, wood-burning stoves and fireplaces, consumer products, or other individual appliances do not require permits from the District and are known as "area sources." Emissions from "area sources" may be substantial for some housing developments or for commercial projects.

Project GHG emissions include direct and indirect source emissions. Direct emissions occur as a result of onsite combustion sources such as engines, boilers, heaters, and onsite mobile equipment, and offsite sources directly related to the project such as emissions from worker commute trips and haul truck trips. Indirect emissions occur as a result of a project's actions but are produced from sources not owned or controlled by the project such as offsite emissions from electricity generation, water conveyance, and waste disposal. The District recommends that climate change impacts be mitigated to the extent reasonably possible, whether or not they are determined to be significant (see Section 6.2.7 for suggested GHG mitigation measures).

Operational emissions from the following sources may require quantification:

- Motor vehicle travel, onsite and offsite (exhaust emissions, tire wear and brake wear emissions, particulate matter/fugitive dust emissions from paved and/or unpaved roads)
- Operation of stationary sources (e.g. combustion devices such as diesel engines and process boilers, solvent usage associated with manufacturing and industrial processes)
- Operation of off-road equipment (e.g. forklifts, cranes, dozers etc.)
- Operation of portable equipment (e.g. drilling rigs and engines registered with the state Portable Equipment Registration Program, or PERP)
- Onsite combustion of natural gas, propane, and wood for heating
- Architectural coatings and consumer products
- Landscape maintenance equipment
- Refrigerants
- Indirect GHG emissions from electricity usage and other activities (such as solid waste disposal, water conveyance, and wastewater conveyance and treatment)

Emission estimates should be clearly presented in the following metrics for comparison to applicable CEQA thresholds of significance:

- Reasonable worst-case daily emissions in pounds per day (lb/day) and maximum annual emissions in tons per year (ton/yr) of criteria pollutant emissions (NO_x, ROC, CO, SO_x, PM₁₀, PM_{2.5})
- Annual metric tons per year (MT/yr) of GHG emissions (CO₂e)

The project's total operational emissions (i.e. sum of mobile, area, and stationary sources) should be compared to the threshold of significance for total operational emissions. Mobile source exhaust emissions should be compared to the threshold of significance for motor vehicle trips only. Please note that emissions from onsite off-road equipment, such as cranes, pumps, rigs and dozers etc., would be included as total operational emissions and compared to the CEQA threshold for total operational emissions, rather than for motor vehicle emissions.

5.3.1 Mobile Screening Criteria for Project Impacts

General screening criteria to determine the type and scope of projects that may require project-level analysis of emissions is provided in Appendix A of this document. The screening table included in this appendix lists common types of land uses and estimates the size of a specific project type that is expected to be less than the threshold of significance for ozone precursor (ROC and NO_x) emissions from motor vehicles. In many cases, if the project's mobile emissions are expected to be less than significant, it is likely that total operational criteria pollutant emissions from the project will also fall below the threshold of significance for total operational emissions. However, if a project type is not included in the screening table, if a project includes multiple land use types, if a project is proposing specialized combustion equipment or equipment that is permitted by the District, or if a project is larger than those listed in the screening table, a project-specific analysis using the CalEEMod program should be performed. Additionally, this table is not designed to screen out the listed project types from requiring analysis of GHG emissions. The Lead Agency should consider how GHG emissions will be analyzed, and the significance of project emissions will be determined, based on its own guidelines and thresholds as the District does not have an adopted GHG threshold for land use development projects.

5.4 Calculating Emissions with CalEEMod

To calculate emissions associated with land use projects, the District recommends the use of the latest version of the California Emissions Estimator Model or CalEEMod for project-level review. CalEEMod is a

statewide land use emissions computer model (available at www.caleemod.com) that contains current emission factors and local default values for Santa Barbara County. CalEEMod has the ability to estimate unmitigated and mitigated emissions from the construction phase; mobile sources, area sources, and stationary sources associated with the land use development (such as emergency standby generators, pumps, and process boilers); as well as indirect GHG emissions from processes, such as energy production, solid waste handling, water conveyance, and wastewater conveyance and treatment. The model also includes mitigation measure options (developed and adopted by the California Air Pollution Control Officers Association [CAPCOA]) that reduce emissions of criteria pollutants and GHGs, and calculates the emissions benefits achieved from such measures.

Please see Appendix B and Appendix C for District guidance on using CalEEMod to estimate project-related emissions. Default values provided by the model may be used where detailed project information is not available; however, an effort should be made to obtain as much project-specific information as possible to more accurately reflect the anticipated emissions from the project. New CalEEMod users should review the CalEEMod User's Guide, User's Guide Appendices, and Video Tutorials (available online at the CalEEMod website).

If emissions calculations are supplemented with an alternative approach (such as via Excel spreadsheet), all assumptions and calculation methodologies should be disclosed, and the electronic file should be available for review by District staff.

5.5 Ambient Air Quality Standards and Air Quality Impact Analysis

One of the criteria for evaluating whether a proposed project will have a significant impact on air quality is if the project will cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone). Most land use development projects do not generate quantities of air emissions that could cause or contribute to an air quality standard violation. Industrial, large commercial projects, or other projects with the potential to emit substantial quantities of air pollutants are sometimes required to perform air quality dispersion modeling.

If the project's permitted, stationary source emissions have a potential to emit equal to or greater than any threshold shown in Table 4 below, or if the District determines that a project has the potential to cause or contribute to a violation of an air quality standard, the project must analyze if emissions will violate any air quality standard or contribute substantially to an existing or projected air quality violation by conducting an Air Quality Impact Assessment (AQIA) pursuant to District Rule 805 and the District's *Modeling Guidelines for Air Quality Impact Assessments*, available at www.ourair.org/wp-content/uploads/aqia.pdf. All pollutants with an ambient air quality standard should be evaluated, and, for the purposes of CEQA analysis, the modeling should include stationary, mobile, and fugitive dust emission sources. Please refer to the District's webpage www.ourair.org/air-quality-impact-assessment for more information on AQIAs.

Table 4: Air Quality Impact Analysis Thresholds

Pollutant	Pounds/day	Tons/year
Particulate Matter	120	--
PM ₁₀	80	--
PM _{2.5}	55	--
Carbon Monoxide	500	--
Nitrogen Oxides (as Nitrogen Dioxide)	120	--
Sulfur Oxides (as Sulfur Dioxide)	120	--
Reactive Organic Compounds (ROCs)	120	--
Lead	3.28	--
Asbestos	0.04	--
Beryllium	0.0022	--
Mercury	0.55	--
Vinyl Chloride	5.48	--
Fluorides	16.4	--
Sulfuric Acid Mist	38.4	--
Total Reduced Sulfur (including H ₂ S)	54.8	--
Reduced sulfur compounds	54.8	--
Municipal waste combustor organics	--	0.0000035
Municipal waste combustor metals	--	15
Municipal waste combustor acid gases	--	40
All other attainment or nonattainment pollutants or precursors	120	--

5.6 Toxic Air Emissions

Toxic air contaminants (TACs) are air pollutants that may cause acute (immediate) or chronic (cumulative) adverse health effects, such as cancer or reproductive harm. Many sources have reduced their toxic emissions, either voluntarily or as a result of the implementation of the Air Toxics “Hot Spots” Information and Assessment Act of 1987 (AB 2588), air toxics control measures (ATCM’s) developed and implemented by the California Air Resources Board, and amendments and emission control rules passed by the District. For more information see www.ourair.org/air-toxics-overview/.

Some projects are more likely than others to emit toxic pollutants, such as projects involving commercial or industrial activities such as oil and gas processing, gasoline dispensing, dry cleaning, electronic and parts manufacturing, medical equipment sterilization, rail yards, diesel generators etc. Since impacts from TACs are often localized near their sources, locating a sensitive use some distance away from the contaminant’s source may be adequate to avoid the impact. CARB’s *Air Quality and Land Use Handbook: A Community Health Perspective*⁸ provides common sources of TACs and recommends minimum siting distances from the sources of toxics and sensitive receptors. If a project may emit TACs, or if TACs may already be present at the project site, the impacts and potential risk should be discussed in the environmental document.

5.6.1 Health Risk Assessments

If a proposed project emits TACs and there are sensitive receptors nearby, preparation of a health risk assessment (HRA) to estimate health risk using air dispersion modeling may be required or recommended.

⁸ See <https://ww2.arb.ca.gov/our-work/programs/resource-center/strategy-development/land-use-resources>.

There are two types of air dispersion models that can be used to analyze risk: “screening” or “refined”. A screening HRA is a quicker, simpler model that provides a conservative assessment of potential risk using a number of assumptions regarding the project parameters. Screening HRAs are commonly required for District permitting of diesel-powered emergency generators with a brake-horsepower rating of 50 or greater, soil vapor extraction of contaminated soil, and gas stations⁹.

Refined HRA’s require more time to conduct, as more detailed information is required, and more processing time is needed to obtain the results. For this reason, the District typically first uses a screening model to obtain conservative health risk estimates. If any of the screening health risk results are above the threshold of concern, then the District typically requires a refined HRA to calculate more precise and representative health risk estimates using site-specific inputs to the model. In other cases, refined HRA’s are warranted as the first step if, for example, the project involves multiple sources of TAC emissions. If the proposed project requires a refined HRA, it should be performed in accordance with the District *Modeling Guidelines for Health Risk Assessments*, District Form-15i, available at www.ourair.org/air-toxics-for-business/. The District’s *Modeling Protocol Tables for HRA Report* must be completed and submitted along with the HRA Report. HRAs must be performed using the Hotspots Analysis and Reporting Program, Version 2 (HARP 2). The cancer risks and chronic and acute non-cancer risks should be presented at the point of maximum impact (PMI), the maximally exposed individual resident (MEIR), and the maximally exposed individual worker (MEIW). Additionally, input and output files from HARP 2 should be provided to show the parameters used to model the estimated health impacts from the project.

HRAs performed as part of the CEQA review for the project should include emissions from all sources of air pollution. This includes routine and predictable emissions from stationary source equipment and operations subject to the District’s New Source Review (NSR) permitting program, as well as emissions from ongoing permit-exempt mobile and stationary equipment, such as motor vehicles, offroad equipment, PERP engines, etc. All operational mobile emissions within a 1,000-foot line extending outside the property boundary must be modeled.

The District has adopted health risk thresholds for both cancer and non-cancer risk. The significance threshold for long-term public health risk is set at **10 excess cancer cases in a million for cancer risk**. For non-cancer risk, the significance level is set at a **Hazard Index of more than one (1.0)**. A Hazard Index of more than one means that predicted levels of a toxic pollutant are greater than the exposure level (the exposure level being a level that is generally considered acceptable). Cancer risk and non-cancer risk (acute and chronic risk) should be assessed and compared to the threshold of significance. These significance thresholds are also the health risk public notification thresholds adopted by the District Board.

Because the District will not permit a project that poses a significant health risk, the District strongly recommends that Lead Agencies demonstrate that the project does not cause a significant risk to the surrounding community and nearby sensitive receptors during the land use approval/CEQA process. This avoids potential delays and/or project redesign requirements during the District permitting process. If a HRA shows that a significant impact will occur, the Lead Agency should impose mitigations to reduce the predicted health risk to a level that is less than significant.

The CEQA Lead Agency should consider if a HRA should be performed to assess health risk from equipment and activities related to the **construction** phase of the project (e.g. offroad heavy-duty diesel equipment, site grading, on-road vehicles, portable diesel generators, welding, paving, etc.). The District recommends

⁹ The District accepts screening HRAs using the CARB’s Gas Station Risk Assessment Screening Tools available at <https://ww2.arb.ca.gov/resources/documents/gasoline-service-station-industrywide-risk-assessment-guidance>.

that construction phase impacts are assessed via a quantitative HRA if the project meets all of the following criteria:

- Project duration is greater than 6 months; and
- Project is within close proximity to sensitive receptors (e.g. residential uses, schools, childcare facilities, senior living facilities, etc.); and
- Project has not committed to both of the following project design features:
 - Off-road equipment engines meet or exceed CARB's Tier 4 Final engine emissions standards for off-road equipment exceeding 50 horsepower. All construction equipment is certified as compliant with the Tier 4 Final engine emissions standards as provided in CCR, Title 13, section 2423(b)(1)(B).
 - The use of diesel and gasoline-powered generators during construction are prohibited. All onsite generators during project construction are required to be powered by battery, natural gas, propane, etc.

5.7 Consistency with the Ozone Plan

A discussion of consistency with federal and state air quality plans is required under CEQA for all projects. The District's air quality attainment plan is its Ozone Plan (previously known as the Clean Air Plan). The most recent Ozone Plan is available on the District's website at www.ourair.org/planning-clean-air. Consistency with the land use and population forecasts in local and regional air quality plans is necessary to ensure that a project, and the associated changes in land use, will not interfere with progress towards the attainment and/or maintenance of State and Federal ambient air quality standards. Proposed projects subject to the most recent Ozone Plan consistency determinations include a wide range of activities such as commercial, industrial, residential, and transportation projects.

Consistency with the Ozone Plan for the projects subject to these guidelines means that direct and indirect emissions associated with the project are accounted for in the Ozone Plan's emissions growth assumptions, that the project is consistent with District rules and regulations, and that the project is consistent with the policies and control measures that are developed and implemented in accordance with the Ozone Plan, including the Transportation Control Measures (TCMs).

The following discussion offers a suggested approach to determining whether an individual project is consistent with the Ozone Plan. However, determinations related to Ozone Plan consistency should consider the specific attributes and circumstances of the proposed project, and any project-specific measures that are implemented to address air quality impacts.

5.7.1 Residential Projects

Residential projects that meet the following criteria are considered consistent with the Ozone Plan:

- Support the primary goals of the Ozone Plan related to reducing regional air pollutants,
- Do not disrupt, delay or hinder the implementation of any Ozone Plan control measure, and
- Are generally consistent with land use and transportation control measures (TCMs) and strategies outlined in the Ozone Plan.

TCMs included in the Ozone Plan aim to reduce ozone precursors, and as a co-benefit, often result in GHG reductions as well. Measures emphasize reduction in vehicle miles traveled, facilitation of a multi-modal transportation network, transit-oriented development, infill growth, land use development that promotes a better balance of jobs and housing within our region, and investment in alternative fuel technologies and infrastructure.

5.7.2 Commercial or Industrial Stationary Source Projects

Commercial or industrial stationary source projects are generally considered to be consistent with the Ozone Plan if they are compliant with District rules and regulations. However, a large commercial or industrial stationary source project that is not subject to the District's rules and regulations and is not subject to the District's New Source Review program may be considered inconsistent with the Ozone Plan if it is a new, unexpected source of air pollutants that is not required to mitigate its emissions below significance thresholds.

5.7.3 Other Considerations

Earthmoving Activities

All projects involving earthmoving activities must implement standard dust control measures in Section 6.1.1 of this document to be consistent with the policies adopted in the 1979 Air Quality Attainment Plan (AQAP).

General Plan Updates and Amendments, Specific Plans, and Program Level Plans

Any general plan updates and amendments, specific plans, or other program level plan should evaluate if the proposed project is consistent with the land use and TCMs and strategies outlined in the Ozone Plan. The extent to which the plan implements and/or supports adopted TCMs should be considered. Plans that support Ozone Plan goals and strategies, and do not cause a disruption or delay to or otherwise hinder implementation of adopted control measures, are considered consistent with the Ozone Plan. For example, TCM T-14 incorporates SBCAG's Connected 2050 Regional Transportation Plan/Sustainable Community Strategy (RTP-SCS) that identifies a preferred land use and transportation scenario that emphasizes a transit-oriented development and infill approach to land use and housing and addresses the jobs-housing balance by emphasizing job growth in the North County and housing growth in the South County.

Projects in Unincorporated County

Consistency with the *Air Quality Supplement of the County's Land Use Element* must also be analyzed for projects in the unincorporated areas of the County. Projects in incorporated areas must be consistent with the air quality policies in applicable plans. The air quality policies, in general, encourage mixed-use development and alternative transportation modes. Specifically, project alternatives for proposed housing projects should consider land development design policies aimed at reducing air pollutant emissions.

5.8 Air Quality Nuisance Issues

The potential for project emissions, such as dust or odors, to adversely affect a substantial number of people should be evaluated as part of the environmental analysis. If a potentially significant impact is identified, mitigation should be proposed to reduce the impact as required by CEQA. The California Health and Safety Code and District regulations (including Rule 303, *Nuisance*) prohibit emissions of air contaminants that cause nuisance or annoyance to a considerable number of people, or that present a threat to public health, or damage to property. If complaints are received, the District will investigate to determine compliance with Rule 303.

5.8.1 Odors

Certain projects have the potential to cause significant odor impacts because of the nature of their operation and their location. Examples include fast food and barbeque restaurants, bakeries, coffee roasting facilities, and cannabis operations¹⁰. Such odors could adversely impact land uses, such as residential areas, schools, or other sensitive receptors, that are located downwind from the proposed

¹⁰ For more information on cannabis operations, see www.ourair.org/cannabis/.

project. The District is required to respond to all odor complaints to determine compliance with Rule 303. It is essential that odor issues be discussed early in the land use application process so that mitigation measures may be identified. Preparation of an Odor Abatement Plan (OAP) may be required or recommended as part of the land use permit process, particularly if the project has the potential to result in potentially significant odor impacts. OAP's should include the following elements:

- a) Name and telephone number of contact person(s) at the facility responsible for logging in and responding to odor complaints
- b) Policy and procedure describing the actions to be taken when an odor complaint is received, including the training provided to the facility's staff on how to respond
- c) Description of potential odor sources at the facility
- d) Description of potential methods for reducing odors, including minimizing idling of delivery and service trucks and buses, process changes, facility modifications and/or feasible add-on air pollution control equipment etc.
- e) Contingency measures to curtail emissions in the event of an odor complaint

5.8.2 Smoke and Wood-burning Devices

The District has not adopted rules or regulations that ban or limit the burning of wood or other solid fuels in a fireplace, wood stove, or other wood-burning device. However, wood-burning appliances and fireplaces in homes and restaurants may be the cause of complaints and have the potential to lead to a public nuisance violation. If complaints are received, the District is required to investigate and to determine compliance with Rule 303, *Nuisance*. To avoid the potential of a public nuisance violation, we recommend new construction projects install electric appliances instead of wood-burning appliances. Whenever possible, the District recommends converting existing wood-burning fireplaces or stoves to an electric source such as an electric fireplace insert or heat pump. In outdoor areas, such as patios and backyards, we recommend that the use of wood-burning devices is limited and that natural gas, propane, or electric fire pits/heaters be used where feasible.

5.8.3 Fugitive Dust

Some projects have the potential to generate fugitive dust emissions during the operational phase of the project. When a project is accessed by unpaved roads/driveways or has unpaved parking areas, PM₁₀ emissions should be calculated for the project using CalEEMod or via a standalone spreadsheet calculation using the methodology prescribed by the Environmental Protection Agency's AP-42 Section 13.2.2. *Unpaved Roads* available at www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors. Regardless of whether the project's emissions exceed the threshold of significance for PM₁₀, the project should be managed to ensure that dust does not impact offsite areas and create a public nuisance. In some cases, routine practices may be insufficient to mitigate the impact and application of dust suppressants or paving of the roadway may be necessary.

5.9 Special Considerations

5.9.1 Industrial Projects

Industrial projects, including oil and gas projects and minerals extraction/processing projects, often have specialized equipment and processes associated with their operations. Therefore, CalEEMod does not have the ability to calculate all emissions associated with these project types, especially emissions from large combustion devices and fugitive hydrocarbon emissions. For sources of emissions not estimated by CalEEMod, applicants should prepare off-model calculations and provide assumptions, emission factors, and source documentation. To the extent possible, the District recommends that the methodology used

to estimate stationary source emissions be consistent with calculations that will need to be performed to fulfill requirements of the District permitting process. Appendix E to this document provides detailed guidance for emission estimation, including recommended methodologies and emission factors. Please contact the District with any questions about estimating emissions from industrial projects.

In addition, industrial projects may require specialized air dispersion modeling to ensure their operations do not result in a significant health risk to the community and that the project does not cause or contribute to an Ambient Air Quality Standard (AAQS) violation. Please see Section 5.5 *Ambient Air Quality Standards and Air Quality Impact Analysis* and Section 5.6.1 *Health Risk Assessments* for more information.

5.9.2 Wineries and Breweries

Air pollutant emissions associated with a proposed winery or brewery will involve emissions from motor vehicles as well as ROC emissions (primarily ethanol) and GHGs from processes such as fermentation, bulk storage, and aging of wine in oak barrels. All wineries, breweries, distilleries and similar facilities (existing and proposed) must apply for a written permit exemption or an Authority to Construct permit from the District. Details on the permitting requirements for wineries are available at www.ourair.org/wineries. For guidance on estimating air pollutant emissions associated with wineries and breweries, including how to model the project in CalEEMod, see Appendix F.

5.9.3 Drive-through Facilities

The District does not generally encourage land use development that relies primarily on automobiles. If new drive-through facilities are proposed, the District supports design features that promote alternative transportation modes that favor pedestrian, bicyclist, and transit rider use.

Historically, the air quality concern associated with drive-through facilities was the potential occurrence of CO hotspots where a large number of vehicles idle. Due to the relatively low background ambient CO levels in Santa Barbara County, localized CO impacts associated with drive-through project traffic alone are not expected to exceed the CO health-related air quality standards. Therefore, CO “Hotspot” analyses are not required anymore.

Santa Barbara County’s Land Use Development Code and similar ordinances for some cities in Santa Barbara County prohibit approval of new drive-through facilities if the air quality impacts of the project are greater with the drive-through than without. The District does not recommend the use of the CalEEMod program to compare the emissions from a drive-through project to emissions from that same project without drive-through service. The CalEEMod program does not include default assumptions for the data inputs required for the type of technical analysis of drive-through emissions necessary to evaluate compliance with the County’s ordinance. An off-model analysis would be required to address Santa Barbara County Land Use and Development Code Section 35.42.130.B and similar ordinances.

The calculation of drive-through emissions is highly sensitive to the assumptions used and in most cases is speculative. In general, emissions of ozone precursors (ROC and NO_x) may be slightly lower for a project with a drive-through facility. Conversely, emissions of GHG pollutants may be higher for a project with a drive-through facility, based on the assumption that a greater amount of fuel is being burned while vehicles wait in a queue. However, the emissions scenario changes if vehicle operators turn off their vehicles while waiting in the queue. Additionally, the state’s changing vehicle fleet, and increase in zero emission vehicle use, will change the emission profile over time. Unless reliable information is available regarding the number of vehicles, queuing times, engine operation while vehicles are in queue (including number of vehicle starts), and non-drive-through service time, an accurate comparison of drive-through vs. non-drive-through emissions cannot be made. Therefore, any quantitative comparative analysis should be based on assumptions supported by substantial evidence.

Please note that Santa Barbara County Land Use and Development Code Section 35.442.100.B requires a comparison of “air quality impacts”. The Lead Agency should define the scope of the analysis, and whether the analysis includes both criteria pollutants and GHGs.

Finally, it is important to note that the vast majority of air quality emissions generated from drive-through facilities is due to the vehicle miles traveled to and from the land use (i.e. offsite vehicle emissions), not the emissions from onsite vehicle use.

5.9.4 Post-harvest Cannabis Operations

Post-harvest cannabis operations can involve equipment and operations that have the potential to generate substantial criteria pollutants and GHGs. Emissions from combustion sources such as boilers, emergency generators, and Transportation Refrigeration Units (TRUs), as well as emissions due to solvent usage for manufacturing and cleaning should be quantified and included in the project’s air quality analysis. District permits are required for several types of post-harvest cannabis operations and project equipment. See www.ourair.org/cannabis/ for more information on cannabis permitting requirements.

Any chemical used for deodorizing systems should not cause adverse impacts to the community. Low-VOC (volatile organic compound) or no-VOC compounds are recommended, as well as formulas that do not contain chemical substances that may pose a chronic or acute health threat when present in the air, as determined by the state of California. The comprehensive list of these chemicals can be found in CARB’s AB 2588 Emission Inventory Criteria and Guidelines (EICG) Regulation Appendix A List of Substances.¹¹ If odor control systems use chemicals that contain toxic air contaminants with approved risk assessment health values, the Lead Agency should assess the potential for health risk by performing a refined Health Risk Assessment.

Section 41705 of the California Health and Safety Code, District Rule 303, *Nuisance*, which generally prohibits the discharge of air contaminants (including odors) that cause a public nuisance, does not apply to odors emanating from agricultural operations necessary for the growing of crops. The growing and harvesting of cannabis is considered an agricultural operation. Therefore, Rule 303 does not apply to cannabis cultivation.

District Rule 303, *Nuisance* still applies to all other cannabis operations unrelated to the growing and harvesting of the cannabis, including:

- cannabis oil extraction manufacturing
- offsite cannabis processing (drying, trimming, etc.) facilities
- offsite cannabis distribution, storage, and/or packaging facilities
- retail storefronts
- smoking lounges

The District has authority to take enforcement action to abate odors and other air contaminants discharged from the above listed cannabis operations in violation of Rule 303.

While the District lacks authority to take enforcement action to abate odors emanating from agricultural operations necessary for the growing and harvesting of cannabis, we do provide guidance on methodologies to reduce odor impacts in a District *Advisory on Air Quality and Cannabis Operations*. In addition to recommendations for odor abatement, this advisory also discusses cannabis-related

¹¹ Available at <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/hotspots2020/eicgappafro.pdf>

operations that may require a District permit. To download the *Advisory* and get more information on cannabis and air quality, see www.ourair.org/cannabis/.

5.9.5 Asbestos

California has identified asbestos as a toxic air contaminant under its Air Toxic Control Measure (ATCM), and asbestos is also regulated at the federal level under the National Emission Standard for Hazardous Air Pollutants (NESHAP). If a project has the potential to encounter or disturb existing building materials, it may be subject to these regulations and District requirements. The CEQA document must include a discussion of how asbestos will be identified and managed.

Renovation or Demolition Projects

If the project involves the renovation or demolition of a *regulated facility*, the applicant must submit one of the following forms to the District, available at www.ourair.org/compliance-forms:

- Form ENF-28: Notification for Renovation and Demolition
- Form ENF-28e: Exemption from Notification for Renovation and Demolition

A *regulated facility* includes institutional, commercial, public, industrial, or multi-unit residential structures, installations, or buildings (e.g., condominiums or cooperatives). It does not include single residential buildings with four or fewer units. However, a group of residential buildings under the control of the same owner or operator is a regulated facility, regardless of the number of units. This includes single-family homes with a separate residential outbuilding onsite, such as an Accessory Dwelling Unit (ADU) or guest house.

If a regulated facility is being demolished, the District must be notified even if an asbestos survey confirms no asbestos-containing materials are present. Requirements and definitions may change, so project applicants should refer to the District's asbestos page (www.ourair.org/asbestos) for the most up-to-date information.

Naturally Occurring Asbestos (NOA)

Projects must implement appropriate abatement measures in accordance with the California Air Resources Board's ATCM for Construction, Grading, Quarrying, and Surface Mining Operations¹² if the project site:

- is located within a known ultramafic rock area
- contains naturally occurring asbestos, serpentine, or ultramafic rock (as determined by the owner/operator)
- or such materials are discovered during construction by the owner/operator, a registered geologist, or the Air Pollution Control Officer

Each subject activity has its own set of requirements that generally include some or all the following criteria: advance notification, dust control measures, dust control plan, no visible emissions past boundary, and recordkeeping.

Areas likely to have NOA in Santa Barbara County are located within the Los Padres National Forest and Vandenberg Space Force Base. These areas are identified on maps provided by the California Department of Conservation that are referenced by the ATCM, and are shaded with green in the Santa Barbara County map below.

¹² Available at <https://ww2.arb.ca.gov/our-work/programs/naturally-occurring-asbestos/about>

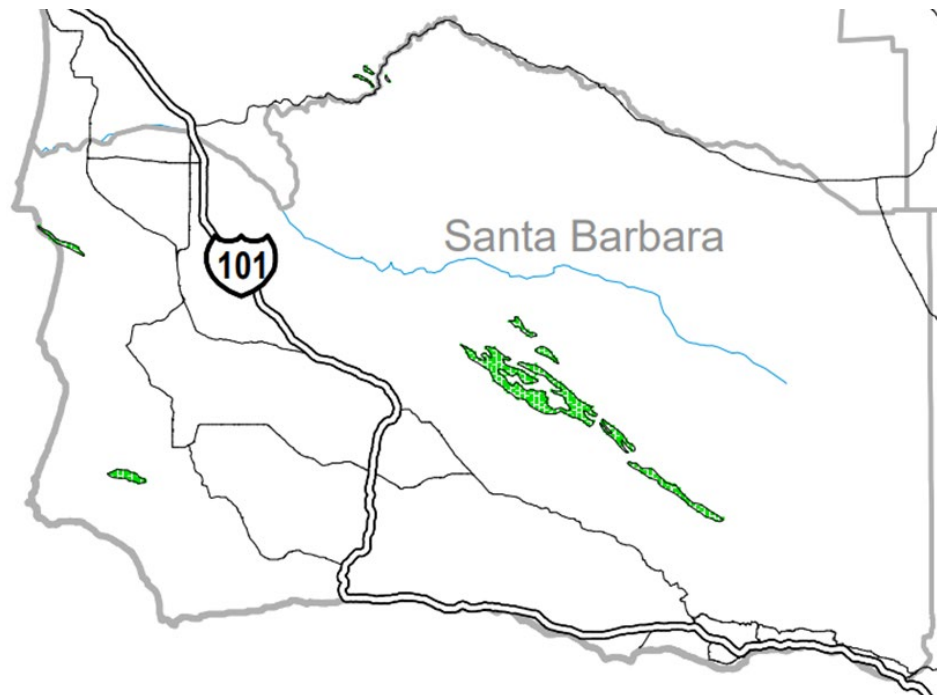


Figure 1: Areas in Santa Barbara County Likely to Contain Naturally Occurring Asbestos.

Source: California Department of Conservation

5.9.6 Contaminated Soil Cleanup

Contaminated soils may be known, or discovered, at a project site. Soils contaminated with gasoline, crude oil, dry cleaning fluids, metals, or other toxic, hazardous or volatile compounds require proper disposal and/or treatment. This could involve the excavation and offsite removal of the soil via haul trucks to an approved disposal site and/or the onsite extraction and treatment of the soil using specialized soil vapor extraction (SVE) equipment and control devices. Emission devices associated with these projects vary from carbon canisters to external combustion units such as catalytic and thermal oxidizers.

Potential impacts related to the cleanup of contaminated soils may include fugitive dust generation, mobile emissions from haul vehicles, and criteria pollutants and hazardous air pollutants from SVE equipment. A screening HRA may be required for SVE activities as part of District permitting and should be included in the CEQA analysis for the project. See Section 5.6.1 *Health Risk Assessments* for more information.

5.9.7 Public Health and High Traffic Roadways

The District recommends against siting sensitive land uses such as residences, schools, day care centers, playgrounds, senior living facilities, and medical facilities within 500 feet of Highway 101. In addition, outdoor sports facilities and active outdoor recreation areas should not be sited within 500 feet of Highway 101. Although various mitigation strategies are currently being researched and implemented, the District continues to recommend policies that require redesigning projects so that sensitive receptors are moved at least 500 feet away from Highway 101 to reduce potential health impacts. Commercial or visitor-serving land uses, with fewer long-term health implications, may be considered for locations closer to the freeway.

This recommendation is based on guidance from the California Air Resources Board's *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB, 2005) and is further supported by numerous studies that have demonstrated a correlation between proximity to high-traffic roads, cancer risk, respiratory illness, and cardiovascular disease. Many studies have shown that living in proximity to freeways

and other high traffic roads leads to respiratory and other non-cancer health effects such as reduced lung function, reduced heart health, increased asthma and bronchitis, and increased medical visits.

Much research has taken place since the publication of the *Air Quality and Land Use Handbook*, and while vehicle emissions rates have declined because of increasingly stringent emissions standards for cars and trucks, recent studies continue to show high near-roadway concentrations and serious health impacts linked to traffic emissions. In addition, non-tailpipe emissions—like particulates from tire and brake wear—are not regulated by CARB and are likely to continue to impact near-roadway public health.

The proximity-based studies do not identify specific pollutants, nor do they utilize dose-response relationships to discern an acceptable level of a pollutant or pollutants that adequately protects public health. Epidemiological studies that link traffic-related air pollutant emissions to adverse health effects differ from site-specific health risk assessments because they do not attempt to quantify the traffic-related air pollutant emissions and calculate exposure values to determine cancer risk. Also, the studies do not distinguish between exposure to particulate matter and gaseous air pollutants. They do, however, provide a strong correlation between exposure to traffic-related air pollution and human airway (bronchial and lung) health in sensitive population groups such as children. Hence, with respect to health risks associated with locating sensitive land uses in proximity to freeways and other high traffic roadways, HRA modeling may not thoroughly characterize all the health risk associated with nearby exposure to traffic-generated pollutants.

If, after consideration of the health concerns and other alternatives, new development of sensitive land uses is still planned within 500 feet of a freeway or a high traffic roadway, the District recommends that the Lead Agency's environmental document disclose the potential health risks to the residents from vehicles that use the freeway, including diesel-fueled vehicles that emit diesel particulate matter, which CARB has determined to be carcinogenic.

The District also recommends that strategies to reduce exposure to near-roadway air pollutants be implemented to the maximum extent feasible. Potential strategies include:

- Urban design that promotes air flow and reduces the concentration of pollution along street corridors
- Constructing a physical barrier between the roadway source and receptors of pollutants (e.g. solid barrier such as sound walls or vegetative planting that reduces the concentration of pollution)
- Installing and maintaining mechanical ventilation systems with fresh air filtration particulate filters that have a minimum efficiency reporting value (MERV) of 16 or better
- For homes and schools without forced air HVAC systems, provision and utilization portable or stand-alone CARB-certified air cleaning devices¹³
- Locating vents and other air intake at the non-roadway facing sides of buildings
- Incorporating dual-pane windows on all windows to make the building exterior as “airtight” as possible to minimize air infiltration

Note that for housing projects utilizing recently adopted statutory CEQA exemption(s) afforded by housing reform legislation, Assembly Bill 130 (2025), Section 21080.66 of the Public Resources Code requires that any housing on the site located within 500 feet of a freeway, shall apply all of the following:

- The building shall have a centralized heating, ventilation, and air-conditioning system.
- The outdoor air intakes for the heating, ventilation, and air-conditioning system shall face away from the freeway.

¹³ CARB certified air cleaning devices list at <https://ww2.arb.ca.gov/list-carb-certified-air-cleaning-devices>

- The building shall provide air filtration media for outside and return air that provides a minimum efficiency reporting value of 16.
- The air filtration media shall be replaced at the manufacturer's designated interval.
- The building shall not have any balconies facing the freeway.

In April 2017, CARB released a Technical Advisory, *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways*¹⁴ that identifies strategies to help decrease air pollution exposure near freeways and high-volume roadways. The District has prepared supplemental guidance that highlights relevant sections of the Technical Advisory and provides additional context for Santa Barbara County. Please review *Guidance for Development near Busy Roadways* at www.ourair.org/land-use-conflicts-and-health-risk/ before implementing any of the strategies listed above.

5.10 Cumulative Impacts

Cumulative air quality impacts are the effect of long-term emissions of the proposed project, plus any existing emissions at the same location, plus reasonably foreseeable similar projects, on the projected regional air quality or localized air pollution problems in the County.

As discussed in the District *Environmental Review Guidelines*, due to the regional nature of air pollution, a project's potential contribution to cumulative impacts is assessed using the project-specific significance criteria. If a project's air pollutant emissions exceed the long-term thresholds, then the project's cumulative impacts will be considered significant. Likewise, projects found to be inconsistent with the District's Ozone Plan, would be considered to have significant cumulative impacts.

¹⁴ Available at <https://ww2.arb.ca.gov/resources/fact-sheets/strategies-reduce-air-pollution-exposure-near-high-volume-roadways>

6 MITIGATION MEASURES AND RESIDUAL IMPACTS

Mitigation measures are required to reduce potentially significant air quality impacts caused by a proposed project. The State CEQA Guidelines state that a project shall not be approved with significant environmental impacts if there are feasible mitigation measures to reduce or eliminate the impact. As required by the CEQA Statute Section 21081.6, Lead or Responsible Agencies must establish a Mitigation Monitoring or Reporting Plan to ensure that mitigation measures imposed as conditions of project approval are implemented as specified. The environmental document must describe all feasible mitigation measures that may be used to reduce or avoid potentially significant air quality impacts. Evaluation of mitigation measures should include effectiveness of mitigation measures (quantified, as feasible) and a discussion of residual impacts.

The determination of an effective mitigation measure depends, in part, on the nature of the emission source. The District can provide guidance on mitigating emissions associated with stationary sources of air pollution or a land use development project. The effectiveness of the measures will vary with project location, project type, and the availability of other programs and services. The District is available to assist the County and the cities in tailoring a feasible program to meet the emission reduction requirements for projects whose emissions exceed the threshold of significance. Note that many of the measures presented in this section also provide reductions in GHG emissions.

This section provides a non-exhaustive list of potential mitigation measures for typical land use projects. Such measures are recommended to reduce adverse air quality impacts and may be required whenever project air quality impacts exceed the significance thresholds. More than one mitigation measure per pollutant might be required to reduce project impacts to below the significance threshold. The District's Planning Division should be contacted for information on the best available measures for various sources. See Appendix B for information on quantifying the emission reductions of mitigation measures in CalEEMod.

6.1 Construction Impact Mitigation

6.1.1 Dust (PM₁₀) Control Measures

Due to the County's nonattainment of state PM₁₀ standard, dust control measures should be required for all projects involving earthmoving activities regardless of the project size or duration. The District maintains a list of PM₁₀ reduction measures for construction impacts titled *Attachment A: Fugitive Dust Control Measures* at www.ourair.org/environmental-review-resources-and-notices/. Projects are expected to manage fugitive dust emissions such that emissions do not exceed the District's visible emissions limit (District Rule 302), create a public nuisance (District Rule 303), and are in compliance with the District's requirements and standards for visible dust (District Rule 345).

6.1.2 Diesel Exhaust Control Measures

Particulate emissions from diesel exhaust are classified as carcinogenic by the state of California. The District maintains a list of regulatory requirements and recommended control strategies that should be implemented to the maximum extent feasible for construction operations. The list titled *Attachment B: Construction Diesel Particulate and NO_x Emission Measures* is available at www.ourair.org/environmental-review-resources-and-notices/.

6.2 Operational Impact Mitigation

The following sector-specific measures could be incorporated into the project:

6.2.1 Diesel Exhaust Control Measures

The District maintains a list of required and recommended measures to reduce diesel emissions (PM and NO_x) from projects that involve use of diesel equipment during the project's operational phase, such as projects with heavy truck travel (warehouses, distribution centers, agricultural facilities, truck centers, etc.), or use of diesel generators, off-road equipment, and Transportation Refrigeration Units (TRUs). The list titled *Attachment C: Operational Diesel Particulate and NO_x Emission Measures* is available at www.ourair.org/environmental-review-resources-and-notices/.

6.2.2 Transportation Control Measures

On a project-specific level, land use and design measures that promote the use of alternative modes of transportation should be considered, as well as measures that promote cleaner fueled vehicles or retrofitting equipment with emission control devices. These mitigation measures focus on reducing vehicle emissions, vehicle miles traveled, and vehicle trips. The implementation of these measures will control emissions of ozone precursors (NO_x and ROC), the primary air pollutants of concern on a regional scale for most land use projects. This list is not all-inclusive; development of additional measures is encouraged.

- Zero emission (or near-zero emission) vehicles as a percentage of total vehicle fleet mix
- Utilization of truck fleet with newest/cleanest possible vehicles
- EV charging infrastructure and charging station installation
- Mixed-use development to reduce the need for vehicle trips
- Transit service enhancements to serve the project, such as express bus service, bike racks on buses, shuttle buses
- Bikeway network improvements related to the project
- Design features to encourage alternate transportation modes:
 - For pedestrians: sidewalks; safe street and parking lot crossings; shade trees; off street breezeways, alleys, and overcrossings; placement of parking lots and building entrances to favor pedestrians rather than cars; shower and locker facilities
 - For transit riders: safe, sheltered transit stops with convenient access to building entrances
 - For bicyclists: theft proof and well-lit bicycle storage facilities with convenient access to building entrance; bikeways between buildings or uses; shower and locker facilities
 - For carpools and vanpools: preferential parking
- Onsite services and financial subsidies/incentives to encourage alternative transportation modes, such as rideshare matching, transit subsidies, vanpool subsidies, shuttle services, parking management, parking "cash-out", guaranteed ride home and education
- Telecommuting services for project-related employees
- Onsite services to reduce the need for offsite travel such as childcare, food services, and neighborhood retail stores
- Schedule operations to reduce trips during highly congested periods (e.g., adjust business hours allow alternative work schedules, and schedule deliveries for off-peak hours)
- Education for residents or employees to explain the benefits of alternative transportation
- Develop a transportation management plan which establishes a numeric target for non-single occupancy vehicle travel and overall vehicle miles traveled

6.2.3 Green Building Practices and Pollution Prevention

Land use projects should employ sustainable development and pollution prevention principles. Pollution prevention principles and "green" building design should be utilized to reduce the use of non-renewable energy resources. Mitigation measures should exceed the standards that are required by law. For the latest on green building code standards, visit <https://calgreeninfo.com/>.

6.2.4 Stationary Source Equipment

The following mitigation measures could apply to stationary source equipment:

- Enhanced leak detection to reduce fugitive emissions
- Incorporate high efficiency process equipment such as steam generators, boilers, and heaters
- Electrification of combustion equipment
- Emission reduction projects at nearby facilities, preferably within the same jurisdiction

6.2.5 Onsite Renewable Energy Generation

Opportunities for onsite renewable or zero-emission power systems, such as solar (photovoltaic) and wind energy, should be considered. These systems could displace the electricity demand that would ordinarily be supplied by the local electricity provider. Onsite renewable systems, combined with energy storage and/or microgrids, can also provide back-up power as an alternative to diesel generators in the event of grid power outages or demand response events.

6.2.6 Offsite Mitigation Project or Program

For projects that cannot be adequately mitigated with onsite mitigation measures alone, offsite mitigation may be necessary. Offsite measures may be proposed and implemented by the project proponent and/or the Lead Agency following approval of the appropriateness and effectiveness of the proposed measure(s) by the Lead Agency (in consultation with the District). 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 District could then use these funds to implement a mitigation project or program to achieve the required reductions. Offsite emission reductions can result from either stationary or mobile sources but should relate to the onsite impacts from the project in order to provide the proper "nexus" for air quality mitigation. Like-for-like emissions should be targeted to the maximum extent feasible. An offsite mitigation strategy should be developed and agreed upon by all parties prior to the start of construction.

Potential offsite emission reduction strategies that reduce ozone-precursor emissions include (but are not limited to):

- Replacement of heavy-duty diesel equipment with cleaner equipment such as on-road vehicles (trucks, school buses, transit buses etc.), off-road equipment, and marine engines
- Dismantling of old highly polluting passenger vehicles
- Reduction of marine vessel speeds through the District's Protecting Blue Whales and Blue Skies voluntary vessel speed reduction program;
- Electrification of gasoline or diesel landscape equipment
- Installation of alternative fueling infrastructure

6.2.7 Greenhouse Gases

GHG emissions can be reduced in a wide variety of ways. Most of the mitigation measures that are included in Section 6.2 of this document will result in decreased GHG emissions and are acceptable mitigation for GHG impacts. CAPCOA has also published a *Handbook for Analyzing Greenhouse Gas*

Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity,¹⁵ an extensive sector-by-sector compendium of project-specific mitigation measures, including quantification methods to calculate GHG reductions. CalEEMod is able to quantify project-specific emission reductions for many of the Handbook's measures (see Appendix B *Calculating Project Emissions with CalEEMod*).

Because GHG impacts are global and cumulative in nature, mitigation to reduce the impact does not necessarily have to occur locally. However, as an air district tasked with protecting the community from the effects of air pollution, it is preferable that mitigation be done locally. District staff recommends the following order of preference when determining appropriate mitigation for GHG impacts:

1. Onsite efficiencies such as reductions in fuel and energy use, waste reduction/re-use, water conservation, reduction in vehicle/truck trips or technologies to reduce emissions
2. Onsite reduction projects such as installation of renewable energy systems or carbon sequestration projects
3. Emission reduction projects in Santa Barbara County
4. Emission reduction projects elsewhere in the state of California
5. Emission reduction projects elsewhere in the U.S

In an effort to support the development and implementation of local GHG mitigation, the District investigated several different strategies to generate GHG reductions that could be implemented in Santa Barbara County. A spreadsheet tool that presents scenarios for each strategy with estimates of potential costs and benefits is available for download at www.ourair.org/local-ghg-mitigation-strategies/.

¹⁵ Available at www.caleemod.com/handbook/index.html

7 GENERAL CONFORMITY REGULATIONS

Section 176(c) of the Federal Clean Air Act prohibits federal entities from taking actions in nonattainment or maintenance areas which do not conform to the State implementation Plan (SIP) for the attainment and maintenance of the national ambient air quality standards (NAAQS). Therefore, the purpose of conformity is to (1) ensure federal activities do not interfere with the budgets in the SIPs; (2) ensure actions do not cause or contribute to new violations, and (3) ensure attainment and maintenance of the NAAQS. **Currently, the District is in attainment of all national ambient air quality standards, therefore general conformity analysis is not required for federal or federally-funded projects.**

8 REFERENCES

- California Air Pollution Control Officer's Association (2022). *CalEEMod California Emissions Estimator Model User Guide*. www.caleemod.com/user-guide
- California Air Pollution Control Officer's Association. *Video Tutorials for CalEEMod Version 2022.1*. www.caleemod.com/tutorials.
- California Air Pollution Control Officer's Association. *Handbook for Analyzing Greenhouse Gas Emissions Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*. www.caleemod.com/handbook/index.html.
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- California Health & Safety Code, §39606. (1975). https://oehha.ca.gov/media/health_saf_code_ss_39606.pdf.
- CEQA Guidelines: Title 14 California Code of Regulations, Chapter 3, Guidelines for Implementation of the California Environmental Quality Act, Sections 15000 et. seq.
- CEQA Statute: California Environmental Quality Act, California Public Resources Code, Division 13, Environmental Quality, Sections 21000 et. seq.
- County of Santa Barbara Planning and Development. (2024). *Environmental Thresholds and Guidelines Manual Published August 2024*. www.countyofsb.org/1432/Environmental-Review
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- Santa Barbara County Air Pollution Control District. *Modeling Guidelines for Health Risk Assessments*. <https://www.ourair.org/wp-content/uploads/apcd-15i.pdf>.
- United States Environmental Protection Agency. *AP42, Fifth Edition Volume 1, Chapter 13: Miscellaneous Sources, 13.2.1 Paved Roads and 13.2.2 Unpaved Roads*. www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors-stationary-sources.
- United States Environmental Protection Agency. *Inventory of U.S. Greenhouse Gas Emissions and Sinks*. www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks.

APPENDIX A: Mobile Source Emissions Screening Table

The Lead Agency may consult the Screening Table below for an indication as to whether the threshold for vehicle-related emissions from project operations might be exceeded. The Screening Table lists common types of land uses and estimates the size of a specific project type that is expected to be less than the threshold of significance for ROC and NO_x emissions from motor vehicles. In many cases, if the project's mobile emissions are expected to be less than significant, it is likely that total operational criteria pollutant emissions from the project will also fall below the threshold of significance for total operational emissions. However, a project-specific analysis using the CalEEMod program should be performed if:

- a project type is not included in the screening table or
- a project includes multiple land use types or
- a project is proposing specialized combustion equipment or equipment that is permitted by the District or
- a project is larger than those listed in the screening table

Additionally, this table is not designed to screen out the listed project types from requiring analysis of GHG emissions. The Lead Agency should consider how GHG emissions will be analyzed, and how the significance of project emissions will be determined, based on its own guidelines and thresholds as the District does not have an adopted GHG threshold for land use development projects.

The values provided in the Screening Table were generated using CalEEMod Version 2022.1.1.29. Assumptions for modeling inputs include: a 2025 operational year and a project in the Traffic Analysis Zone (TAZ) 3361 in the Santa Ynez Valley Region. Identified trip lengths for TAZ 3361 are the longest trip lengths in our region; thus, assumed trip lengths and resultant mobile emission estimates are likely conservative and represent a worst-case scenario for projects in other regions of Santa Barbara County.

IMPORTANT: The values listed in the table below should be used only for project screening and should not be considered absolute thresholds of project significance. Emissions from all project sources, and other air quality issues, such as high odors, toxic air contaminants, GHGs, cumulative impacts, and consistency with the Ozone Plan must be considered when evaluating a project's potential for causing adverse air quality impacts. Depending on the nature of the project and local conditions, a project below the values in the screening table below could still cause an adverse air quality impact.

Mobile Source Emission Screening Table: Projects with Potentially Significant Mobile Emissions

Land Use Type	Project Description	Size of Projects Likely to Generate Approximately 22.5 lb/day* of ROG or NO _x
Residential		
Single Family House	Detached Housing, 3 houses per acre, individual lots	240 houses
Apartments	One or two levels, 16 apartments per acre	425 apartments
Condominiums/Town-houses	16 condos per acre	285 condos
Assisted Living Facility	16 independent living units per acre with centralized amenities	740 dwelling units
Mobile Home Park	7.9 manufactured homes per acre	475 mobile homes
Educational		
Elementary School	K-6 grade	135,000 square feet
High School	Grades 9-12	185,000 square feet
Day Care Center	Pre-school age, classrooms, offices, eating areas, playgrounds	90,000 square feet
Place of Worship	Church, synagogue	95,000 square feet
Library	Facility with shelved books, and/or reading/meeting rooms	30,000 square feet
Recreational		
Quality Restaurant	Full service, no drive-thru, one hour or more turnover rate	30,000 square feet
High-turnover Restaurant	Full service, no drive-thru, less than one hour turnover rate	19,000 square feet
Hotel	Full service, restaurant, meeting rooms	330 rooms
Motel	Restaurant, parking	785 rooms

Land Use Type	Project Description	Size of Projects Likely to Generate Approximately 22.5 lb/day* of ROG or NO _x
Health Club	Fitness training facilities	80,000 square feet
Retail		
Discount Club	Free standing store, parking	66,000 square feet
Electronic Superstore	Electronics, Audio, Video, Software, Computers	47,000 square feet
Home Improvement Superstore	Home improvement merchandise	46,000 square feet
Strip Mall	Small strip shopping center that contains a variety of retail shops	59,000 square feet
Supermarket	Food items, also with banking, bakeries floral and photo centers	14,000 square feet
24-hour Convenience Market	Convenience foods, no gasoline station	2,400 square feet
Commercial		
General Office Building	Multiple tenants	270,000 square feet
Medical Office Building	Medical, dental office	75,000 square feet
Office Park	General office buildings with banks, restaurants and other support services	235,000 square feet
Bank (with Drive-Through)	Drive-in lanes, may also have walk-in banking services	44,000 square feet
Pharmacy/Drugstore (with Drive-Through)	Medications/drugs, personal care products, general merchandise, drive-through windows	22,000 square feet

**Approximately ten percent less than the District's significance threshold of 25 lbs/day for ROG or NO_x.*

APPENDIX B: Calculating Project Emissions with CalEEMod

Evaluation of Significance Using CalEEMod

CalEEMod, the California Emissions Estimator Model, quantifies criteria pollutants and GHG emissions from the construction and operation of land use development projects and is available at www.caleemod.com. CalEEMod should be run using as much project-specific information as possible. Several guidance documents are available on the CalEEMod website including a User's Guide, video tutorials, and Frequently Asked Questions document that should be consulted for new users. See Appendix C for guidance on reviewing CalEEMod reports.

Calculating Construction Emissions

The user should evaluate if the default equipment list, including equipment types, numbers, horsepower ratings, hours of operation, and duration of phases, are appropriate. Depending on the project, not all construction phases may be necessary and the user should delete phases that are not applicable to the project. For example, not all projects require demolition. In addition, the user may need to add multiple phases of similar types for large projects with staged build-out scenarios. Before modifying construction phase inputs in CalEEMod, users should review the video tutorial "*Video 4, Analyzing Construction Emissions*," on the CalEEMod website.

Calculating Operational Emissions

Operational Mobile Exhaust – Trip Rates

The Average Daily Trip (ADT) generation rates included in CalEEMod are currently based on Institute of Transportation Engineers (ITE) *Trip Generation Manual* 10th edition average trip rates for the respective land use categories. The user should override default ADT rates with rates based on a project-specific traffic study or trip generation report whenever possible.

Note that the trip generation rates estimated by the ITE *Trip Generation Manual* include employee trips and delivery trucks, but not trips for special events, seasonal trips, or other project-specific activity. Therefore, adjustments to the default ADT rate must be made when the default rate does not adequately capture the project's trip generation.

Since CEQA evaluation should be based on a reasonable worst-case scenario, the trip rate should be based on a **peak day** of project activity. The peak day trip rate should include all trips that could reasonably occur on a worst-case day. Averaging the total weekly trips over seven days, or the total annual trips over 365 days, does not adequately estimate the reasonable worst case daily emissions from mobile sources. The District has developed a *Peak Day Trip Calculator* available at www.ourair.org/environmental-review-resources-and-notice/ that calculates the daily peak trips and annual average trips for land uses such as wineries that have various special events and trip-generating activities. This calculator also includes directions for how to input these trip rates in CalEEMod.

Other Mobile Emission Defaults

Depending on the nature of the project type, special attention should be given to the operational mobile sources default inputs. Adjustments to the model defaults should be made when project-specific

information is available and would be more reflective of project circumstances than the default data. For example, the following model inputs should be reviewed and adjusted as needed:

- Operations – Mobile Sources – Vehicle Data screen:
 - The default trip purpose percentages for primary, diverted, and pass-by trips. The trip length is adjusted (shortened) for the diverted and pass-by trip purposes. Depending on the nature of the proposed use, the project may be more accurately and conservatively modeled with a higher/lower percentage of primary trips.
 - The default trip percentages for the different trip purpose types (e.g. H-W [home-work] trips, H-S [home-shopping] trips, H-O [home-other] trips etc.).
- Operations – Mobile Sources – Fleet Mix screen: The default fleet mix for the proposed project. The project could attract a mix of vehicles which clearly differs from the default vehicle fleet. For example, the fleet mix associated with an industrial land use project will likely consist of a high portion of heavy-duty trucks.

Operational Road Dust

Projects that involve onsite or offsite vehicular travel on unpaved access roads, driveways, or parking areas have the potential to generate significant particulate matter (PM) emissions, even at low traffic volumes. Project specific information about unpaved road travel should be entered in CalEEMod's "Operations- Mobile Sources - Road Dust" screen. For example, the "% Paved" value should be changed to define the project's paved road component.

Indirect Emissions

It is recommended that CalEEMod be used to estimate indirect emissions (from electricity use, water use, waste, etc.). Usage rates should be based on project-specific information where available or CalEEMod defaults. If there are specific reasons that the CalEEMod program cannot be used to estimate indirect GHG emissions from electricity usage, see Appendix D for the recommended guidance.

Emission Sources not Estimated with CalEEMod

It is important to note that CalEEMod does not estimate emissions from all sources such as fugitive hydrocarbon emissions and emissions from specialty equipment; thus supplemental calculations may be necessary. Common sources of emissions that are not included in CalEEMod include but are not limited to fugitive hydrocarbon emissions from gasoline stations, fermentation emissions from wineries and breweries, and ROC emissions from solvent use and manufacturing processes. Emissions from these sources must be calculated separately and added to other project emissions calculated by CalEEMod.

Modeling Mitigation Measures

CalEEMod can quantify emission reductions for more than 100 different mitigation measures throughout a project's construction and operational phase. A tool is available at www.caleemod.com/search-measures to search applicable mitigation measures by implementation phase, source type, and pollutant of concern. For details of each measure, see CAPCOA's *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*¹⁶. Whenever a mitigation measure is selected in CalEEMod, the Lead Agency should ensure that enforcement mechanisms (e.g. conditions of

¹⁶ Available at www.caleemod.com/handbook/index.html

approval, inclusion in project description, or mitigation and monitoring plan) are in place to require the measure's implementation.

Appendix C: CalEEMod Report Review Guidance

This Appendix provides guidance on how to interpret CalEEMod report results and assumes a working knowledge of CalEEMod. For general assistance with CalEEMod, refer to the User's Guide, video tutorials, and FAQ documents at www.caleemod.com.

Report Selection

After modeling is complete, use the left side bar to select Report and Detailed Report. The Detailed Report includes emissions estimates categorized by sector (i.e. mobile emissions, area emissions etc.) and is the preferred report type for submittal.

Emission Reduction Measures

If emission reduction measures are modeled, the "mitigated" emissions as a result of the implementation of selected measures will appear in the row titled "Mit." below the row titled "Unmit.," which displays unmitigated emissions. In some instances, the emission estimates that incorporate the emission reduction measures appear in a separate table denoted as "Mitigated" below an "Unmitigated" table. Whenever reduction measures are applied to a project, the Lead Agency should ensure that the measures are enforceable via the project description, mitigation measure, condition of approval, or other mechanism. The Lead Agency should determine how to report the unmitigated and/or mitigated project emissions in the CEQA document.

Construction Emissions

Criteria Pollutants

Table 2.1 Construction Emissions Compared Against Thresholds shows the project's daily and annual construction emissions. The columns highlighted in yellow provide the criteria pollutants typically of most interest including ROG, NO_x, SO_x, PM₁₀, and PM_{2.5}. If comparing project emissions to an annual significance threshold (tons per year), the emission values in the "Annual (Max)" section would be used (green highlighted values in the example below).

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NO _x	CO	SO ₂	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	391	391	31.7	37.1	0.06	1.37	19.8	21.1	1.26	10.1	11.4	—	8,312	8,312	0.43	0.47	21.5	8,483
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.77	4.12	29.8	40.0	0.06	1.23	9.33	10.6	1.14	3.68	4.82	—	8,349	8,349	0.48	0.47	0.60	8,500
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	22.1	22.0	10.6	26.5	0.03	0.29	3.24	3.53	0.27	0.80	1.06	—	5,881	5,881	0.32	0.33	6.65	5,994
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.03	4.01	1.94	4.84	< 0.005	0.05	0.59	0.64	0.05	0.15	0.19	—	974	974	0.05	0.06	1.10	992

Greenhouse Gases

Greenhouse gas (GHG) emissions from the construction phase of the project are displayed in *Table 2.2 Construction Emissions by Year, Unmitigated* and *Table 2.3 Construction Emissions by Year, Mitigated*. Construction emissions are reported in units of metric tons (MT) of CO₂e for each year of the construction phase. See the highlighted yellow rows in the example below. The CO₂e emissions from each year of construction (highlighted in green) can be summed to arrive at the project's total construction phase emissions (ex. 387 MT CO₂e + 992 MT CO₂e + 219 MT CO₂e = 1,598 MT CO₂e). If the significance threshold utilized by the Lead Agency is an amortized threshold, this total could then be divided by the estimated life of the project in years.

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO ₂	PM ₁₀ E	PM ₁₀ D	PM ₁₀ T	PM _{2.5} E	PM _{2.5} D	PM _{2.5} T	BCO ₂	NBCO ₂	CO ₂ T	CH ₄	N ₂ O	R	CO ₂ e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.02	3.39	31.7	30.8	0.06	1.37	19.8	21.1	1.26	10.1	11.4	—	6,725	6,725	0.28	0.06	0.55	6,750
2026	4.41	3.91	14.6	37.1	0.04	0.40	4.61	5.01	0.37	1.10	1.47	—	8,312	8,312	0.43	0.47	21.5	8,483
2027	391	391	6.98	10.4	0.01	0.30	0.83	0.85	0.27	0.19	0.30	—	1,602	1,602	0.06	0.04	3.16	1,609
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.77	4.12	29.8	40.0	0.06	1.23	9.33	10.6	1.14	3.68	4.82	—	8,349	8,349	0.48	0.47	0.60	8,500
2026	4.42	3.93	14.9	37.9	0.04	0.40	4.61	5.01	0.37	1.10	1.47	—	8,230	8,230	0.33	0.47	0.56	8,377
2027	4.25	3.77	14.1	36.2	0.04	0.36	4.61	4.97	0.33	1.10	1.43	—	8,117	8,117	0.33	0.47	0.51	8,265
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.40	1.21	7.43	11.0	0.01	0.28	2.16	2.44	0.26	0.80	1.06	—	2,309	2,309	0.11	0.08	1.63	2,338
2026	3.14	2.80	10.6	26.5	0.03	0.29	3.24	3.53	0.27	0.77	1.04	—	5,881	5,881	0.32	0.33	6.65	5,994
2027	22.1	22.0	2.46	5.94	0.01	0.07	0.70	0.77	0.06	0.17	0.23	—	1,298	1,298	0.05	0.07	1.30	1,322
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.25	0.22	1.36	2.00	< 0.005	0.05	0.39	0.45	0.05	0.15	0.19	—	382	382	0.02	0.01	0.27	387
2026	0.57	0.51	1.94	4.84	< 0.005	0.05	0.59	0.64	0.05	0.14	0.19	—	974	974	0.05	0.06	1.10	992
2027	4.03	4.01	0.45	1.08	< 0.005	0.01	0.13	0.14	0.01	0.03	0.04	—	215	215	0.01	0.01	0.22	219

Operational Emissions

Criteria Pollutants

Table 2.4 Operations Emissions Compared Against Thresholds shows the project's daily emission of criteria pollutants in pounds per day (lb/day). The columns highlighted in yellow below — ROG, NO_x, SO₂, PM₁₀, and PM_{2.5} — display the project's criteria pollutant emissions. The "Daily, Summer (Max)" and "Daily, Winter (Max)" sections highlighted in yellow show the maximum daily emissions for each pollutant for a summer day and winter day. Use the higher of the two when comparing against daily CEQA thresholds, indicated by the values highlighted in green in the example.

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	172	163	91.0	734	1.41	1.70	125	127	1.63	31.7	33.3	735	153,904	154,639	74.4	7.81	577	159,403
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	168	159	88.4	734	1.39	1.68	125	126	1.61	31.7	33.3	735	151,738	152,473	75.4	8.28	89.5	156,915
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	117	111	61.6	478	0.90	1.08	78.4	79.5	1.04	19.9	20.9	735	101,155	101,889	71.5	5.33	215	105,480
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	21.4	20.3	11.2	87.3	0.16	0.20	14.3	14.5	0.19	3.63	3.82	122	16,747	16,869	11.8	0.88	35.5	17,463

Mobile Emissions

Some jurisdictions (such as the County of Santa Barbara and the District) have CEQA thresholds that specifically apply to ozone precursors (ROG and NOx) from motor vehicles. *Table 2.5 Operations Emissions by Sector, Unmitigated* shows unmitigated emissions by sector, including mobile emissions (*Table 2.6 Operations Emissions by Sector, Mitigated* reflects mitigated emissions if reduction measures have been applied). The sectors and columns highlighted in yellow show the maximum mobile emissions in pounds per day (lbs/day) for a summer day and winter day. Use the greater of the two when comparing to daily CEQA thresholds, highlighted in green in the example below.

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	143	135	81.6	675	1.38	1.09	125	126	1.02	31.7	32.7	—
Area	26.7	26.4	0.50	53.1	< 0.005	0.03	—	0.03	0.02	—	0.02	0.00
Energy	0.52	0.26	4.50	2.49	0.03	0.36	—	0.36	0.36	—	0.36	—
Water	—	—	—	—	—	—	—	—	—	—	—	96.8
Waste	—	—	—	—	—	—	—	—	—	—	—	638
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—
Stationary	1.74	1.58	4.42	4.03	0.01	0.23	0.00	0.23	0.23	0.00	0.23	0.00
Total	172	163	91.0	734	1.41	1.70	125	127	1.63	31.7	33.3	735
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	144	136	89.5	728	1.36	1.09	125	126	1.02	31.7	32.7	—
Area	21.6	21.6	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00

Greenhouse Gases

The GHG emissions from the project's operational phase are shown in *Table 2.4 Operations Emissions Compared Against Thresholds*. Annual GHG emissions, in metric tons of CO₂e per year (MT CO₂e/year), appear in the "Annual (Max)" section and the "CO₂e" column. In this example, the value highlighted in green shows the unmitigated project emits 17,463 MT CO₂e/year.

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO ₂	PM ₁₀ E	PM ₁₀ D	PM ₁₀ T	PM _{2.5} E	PM _{2.5} D	PM _{2.5} T	BCO ₂	NBCO ₂	CO ₂ T	CH ₄	N ₂ O	R	CO ₂ e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	172	163	91.0	734	1.41	1.70	125	127	1.63	31.7	33.3	735	153,904	154,639	74.4	7.81	577	159,403
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	168	159	98.4	734	1.39	1.68	125	126	1.61	31.7	33.3	735	151,738	152,473	75.4	8.28	89.5	156,915
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	117	111	61.6	478	0.90	1.08	78.4	79.5	1.04	19.9	20.9	735	101,155	101,889	71.5	5.33	215	105,480
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	21.4	20.3	11.2	87.3	0.16	0.20	14.3	14.5	0.19	3.63	3.82	122	16,747	16,869	11.8	0.88	35.5	17,463

Appendix D: Estimating Indirect GHG Emissions from Electricity Usage

If there are specific reasons that CalEEMod cannot be used to estimate project emissions, indirect GHG emissions from electricity usage can be estimated by developing an estimate of worst-case annual electricity usage (in consultation with the applicant and Lead Agency) and determining the appropriate emission factor to estimate GHG emissions for the location of the subject project.

Santa Barbara County projects are generally served by either Central Coast Community Energy (3CE), Pacific Gas & Electric (PG&E) in North County, Southern California Edison (SCE) in South County, Santa Barbara Clean Energy in the City of Santa Barbara, or Lompoc Electric in the City of Lompoc. Emission factors for carbon dioxide (CO₂) have been developed for these specific utilities. Utility-specific factors are available via Appendix G, tab G-3 of the CalEEMod User's Guide which provides annual projected GHG factors for utility providers through 2050. See www.caleemod.com/user-guide.

If there are circumstances in which the utility factor will not represent the project, the District recommends that GHG emission factors from electricity should be based on the most recent factors used in US EPA's most recent Emissions & Generation Resource Integrated Database (eGRID), see www.epa.gov/egrid for the latest factors for the "CAMX - WECC California" region.

Appendix E: Estimating Emissions from Industrial Projects

This appendix builds upon the general guidance provided for estimating air emissions from land use projects by providing specific guidance for the evaluation of industrial source projects, including from oil and gas operations and from minerals extraction and processing operations (sand, rock, gravel, concrete, asphalt).

Sources of Emissions

Potential onsite and offsite sources of criteria pollutant and GHG emissions associated with an industrial project during the construction and operational phases may include, but are not limited to:

- Portable and stationary combustion equipment (steam generators, boilers, heaters, engines)
- Flares/Thermal oxidizers
- Well drilling equipment (including redrilling, replacement, and workovers activities)
- Fugitive emissions from gas and oil service components, tanks, loading racks, oil and gas wells, well drilling muds, pipeline pigging, etc.
- Aggregate systems (screens, crushers, stackers, conveyors, hoppers, feeders, silos, bins, batchers, mixers, etc.)
- Rotary dryers (burners and blowers)
- Baghouses
- Material movement/material drops
- Storage piles (stockpiles) and disturbed surfaces
- Offroad equipment exhaust and fugitive dust
- Onroad mobile equipment exhaust and fugitive dust
- Solvent usage
- Indirect greenhouse gas emissions from electricity use, water use, and solid waste disposal

Calculation Guidance

The following discussion provides guidance and advisories for the calculation of emissions from various sources but does not provide comprehensive methodologies for all potential sources of emissions. For additional information, please contact the District directly.

Stationary Source Equipment

The District's Engineering Division should be contacted as early as possible in the land use review process for guidance on estimating permitted equipment emissions. To the extent possible, the District recommends that the methodology used to estimate stationary-source emissions be consistent with calculations that will need to be performed to fulfill requirements of the permitting process. See www.ourair.org/engineering-programs/ for more information and guidance specific to various project types and emission sources.

Mobile Sources

Vehicle Exhaust

On-road vehicle exhaust emissions should be generated using the latest version of CARB's EMFAC program. The EMFAC web platform (<https://arb.ca.gov/emfac/>) provides *Emissions Inventory*, *Project Analysis*, *Scenario Analysis*, and *Fleet Database* tools. Project-level assessments should be prepared using the Project-Level (PL) web tool as feasible. The Project Analysis tool provides emission rates for meteorological conditions (temperature and relative humidity) entered by the user. If the user chooses to run the PL web tool, the District offers the following meteorological data for various regions in the county:

Location	Average Annual Temperature (F)	Average Annual Relative Humidity (%)
Santa Maria	56.56	71.14
Lompoc	58.18	71.14
Goleta-SB-Carpinteria	61.41	71.15

The applicant should make the appropriate parameter selections that represent a conservative, reasonable worst-case project scenario and disclose the parameters used. If the project proposes to restrict the vehicle fleet to a particular model year(s) or to alternatively fueled vehicles, such commitments should be included as an enforceable condition by the Lead Agency, through the project description, mitigation measure or other means.

Representative vehicle categories should be chosen for the project's proposed fleet, including vehicle use associated with worker trips, haul trips, delivery/vendor trips, etc. For example, a representative EMFAC vehicle category for an oil tank truck would likely be from a heavy-duty truck category, such as T7 Tractor Class 8.

Trip Distances

Emission calculations should be based on a two-way trip (round trip), which accounts for the vehicle's travel from its origin to its destination and back. The applicant should provide a reasonable worst-case assumption for the trip mileage. The entire trip distance, including any out-of-county travel, should be considered in the CEQA analysis. The origin and destination of vehicle trips should be specified for confirmation of accurate trip length. For example, the origin of any light crude oil (LCO) import and the destination of produced crude should be specified. If exact suppliers are unknown at this time, or multiple suppliers may be used, a reasonable worst-case distance should be assumed.

Fugitive Dust

Daily and annual fugitive dust emissions (PM₁₀ and PM_{2.5}) from travel on onsite and offsite, paved and unpaved roads during project construction and/or operation should be calculated using EPA's AP-42: Compilation of Air Emissions Factors from Stationary Sources (Section 13.2.1 *Paved Roads* and Section 13.2.2 *Unpaved Roads* available at www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors-stationary-sources). In most instances, offsite travel on local roadways and highways occurs on paved surfaces and onsite travel may be comprised of travel on paved and unpaved surfaces.

Any mitigation applied to reduce fugitive dust emissions, such as watering, speed reduction, soil stabilizers, track-out devices, etc., should be supported by substantial evidence. References for the control efficiency and/or assumptions for the effectiveness of mitigation should be provided.

Note that if the analysis uses CalEEMod to calculate fugitive dust, CalEEMod is populated with statewide defaults for various data inputs necessary to calculate dust emissions. These defaults should be replaced with project-specific information when available. In the absence of site-specific measurement for assumptions such as soil moisture and silt content, the District recommends reviewing AP-42 default tables and inputting the appropriate defaults based on industry type.

PERP Equipment

In many instances, equipment registered under the California Air Resources Board's statewide Portable Equipment Registration Program (PERP) (i.e., drilling rig engines, mud pump engines, generators) is operated on a temporary/short-term basis. In other instances, such equipment, although used intermittently, is utilized on an ongoing basis throughout the life of the project. The Lead Agency has the discretion to classify emissions from PERP equipment as short term/construction phase activity or operational phase activity based on the operational characteristics of the equipment and the policies of the Lead Agency.

While some jurisdictions, such as the County of Santa Barbara, exclude criteria pollutant emissions from PERP equipment from comparison to long-term/operational criteria pollutant thresholds, these emissions should be quantified and disclosed for information purposes in the CEQA document.

For the purposes of health risk modeling, emissions from PERP equipment that will be used over the life of the project (such as drilling rig engines) should be included in an HRA that evaluates the impact of operational phase activities due to the ongoing nature of emissions/exposure.

Fugitive ROC and Methane

Fugitive ROC emissions from components, tanks, loading racks, pipeline pigging, and other onsite emission sources (e.g. sumps, pits, well cellars, and wastewater tanks) can be calculated using source-specific District Excel spreadsheets available at www.ourair.org/oil-and-gas.

Fugitive methane emissions should be estimated by using project-specific methane content obtained from an oil/gas analysis whenever possible. The following steps can be used to calculate total fugitive methane emissions in metrics of carbon dioxide equivalent (CO₂e):

Step 1: Determine ROC values.

Identify the total amount of controlled ROC tons/yr from the appropriate spreadsheet (see paragraph above). Proceed with Steps 2-5.

Step 2: Determine THC.

For gas service components, the default assumption made by the District for the "ROC/THC Ratio" is 0.31, meaning that 31% of the total hydrocarbons (THC) is ROCs. For oil service components, the default assumption made by the District for the "ROC/THC Ratio" is 0.56. As an example for gas service, the calculation to determine THC is as follows: $X \text{ tons/yr ROC} \div 0.31 = X \text{ tons/yr THC}$.

Step 3: Calculate methane component of THC.

If an oil/gas analysis is not available, the District conservatively recommends assuming that the remaining fraction of THC is methane (69% for gas service and 44% for oil service). For example, the calculation to determine methane emissions from gas service is as follows:

$X \text{ tons/yr THC} * 0.69 = X \text{ tons/yr methane}$.

Step 4: Convert to CO₂e.

Multiply total tons/yr methane by it's current global warming potential (GWP) to account for the fact that CH₄ has a different radiative forcing than CO₂ (currently, 29.8 for "Methane – fossil" from the IPCC Sixth Assessment Report (AQ6)). Calculation: X tons/yr CH₄ * 29.8 = X tons/yr CO₂e.

Step 5: Convert short tons to metric tons.

Convert short tons to metric tons by multiplying short tons by 0.907185 (or dividing by 1.10231).

Drilling Muds

Oil and gas drilling activities have the potential to off-gas produced gases from the drilling muds. Emission estimates for these fugitive emissions should be provided. To assess the potential reactive organic compounds (ROC) and methane (CH₄) emissions, the following information is required:

1. The estimated number of days that formation gas would be present in the drilling muds (for example, 20 of the 100 days of drilling). There must be a solid basis of fact for determining this value, otherwise assume each drilling day when the mud system is in use.
2. The maximum daily drilling mud use in bbls/day.
3. The gas to drilling mud ratio (scf/bbl). Default is 5% of facility gas to oil ratio.
4. The total hydrocarbon content (THC) density of the produced gas (lb-THC/scf). This information can be obtained from a produced gas analysis.
5. The produced gas ROC to THC weight percentage ratio. By default, the District assumes that 20% is ROC and 80% is methane (CH₄) (both percentages on a weight basis).
6. The extraction efficiency of mud-gas separators. The District assumes a default of 98%.

Calculate the uncontrolled emission factor using the equation below and then estimate daily and annual emissions of ROC and CH₄ based on the maximum wells drilled per day and per year.

*Emission Factor = Formation Fluid Contact Drilling Days Per Well * Daily Drilling Mud Use * Gas to Drilling Mud Ratio * THC Density of Gas * Gas ROC to THC Weight % Ratio * (1 – Extraction Efficiency)*

$$\frac{lb}{well} = \frac{days}{well} * \frac{bbl}{day} * \frac{scf}{bbl} * \frac{lb - THC}{scf} * \frac{ROC Weight \%}{THC Weight \%} * (1 - Efficiency \%)$$

Well Workover Venting

Fugitive ROC and methane emissions can be released during well workover activities. The magnitude of emissions can vary depending on specific well workover technique. The project description should provide an explanation of type and expected frequency of well workovers, and any proposed controls, such as connection to vapor recovery. The District can provide an Excel spreadsheet for calculation of emissions upon request; contact the District's Engineering Division at enr@sbcapcd.org.

Indirect GHGs from Electricity Usage

Emissions from all electrically powered equipment should be quantified, such as well pumps, wastewater injection pumps, loading pumps, etc. See Appendix D for quantification guidance.

Appendix F: Estimating Air Pollutant Emissions from Wineries and Breweries

Wineries and breweries have several unique elements to consider when estimating project emissions including appropriate trip rates, emissions from fermentation, and use of generators or boilers.

Modeling Winery and Brewery Projects in CalEEMod

CalEEMod does not have a “winery” or “brewery” land use that can be selected for modeling. Therefore, it is necessary to select a proxy land use that could represent the non-vehicle emissions, such as the area sources, energy use, water use, and solid waste disposal generated by a typical winery or brewery. An appropriate proxy land use may include land uses such as the “general light industry” or “unrefrigerated warehouse-no rail”. The CalEEMod user could select a proxy land use and use the default information provided by the model when project-specific information is unavailable. Default vehicle emissions from the proxy land use are unlikely to represent the project’s trip generation, therefore project-specific daily and annual trip rates should be entered into CalEEMod (see “Modeling Mobile Emissions” below).

Modeling Mobile Emissions: Developing Project-Specific Trip Rates

Since CalEEMod does not contain a “winery” or “brewery” land use, the default trip rates for a proxy land use are unlikely to be representative of the project’s trip generation. Most winery and brewery operations are required to prepare a traffic study that contains a project-specific trip generation profile for the proposed operation. However, the Average Daily Trips (ADT) presented in the traffic study may or may not be sufficient for the air quality analysis.

Daily Criteria Pollutant Emissions from Mobile Sources

Since emission estimates are compared to daily operational thresholds, the estimated number of vehicle trips for a **peak day** should be used when calculating criteria pollutant emissions. **The reasonable worst-case day trip generation scenario should include all trips that could reasonably occur on the same day from allowable uses** (e.g., tasting room visitor trips, employee trips, delivery trips, special event trips, seasonal (harvest) trips, etc. If the project-specific traffic study has included vehicle trips from all allowable uses on a given day, the ADT rate from the study can be input into CalEEMod. However, if the traffic study omits trip information from some uses, such as special events, the Lead Agency or preparer of the air quality analysis will need to modify the trip generation rates. The District has developed a *Peak Day Trip Calculator* available at www.ourair.org/environmental-review-resources-and-notice/ for calculation of the peak day trips and annual average trips for land uses such as wineries that have special events. This Calculator also includes directions for how to input these trip rates in CalEEMod.

Annual Greenhouse Gas Emissions from Mobile Sources

Since peak day trip generation will not occur 365 days of the year, the District recommends that a separate “annual average” trip rate be calculated and entered in CalEEMod to avoid an overestimation of annual GHG emissions. An annual average trip rate is not included in a traffic study; therefore, this rate will need to be calculated by the Lead Agency, or preparer of the air quality analysis. The *Peak Day Trip Calculator* can be used to generate a project’s annual average trips to be entered in CalEEMod.

Modeling Fermentation Emissions

For both wineries and breweries, the fermentation process emits ROC, a criteria pollutant, and greenhouse gases. These fermentation emissions are not calculated in CalEEMod so they must be calculated separately and added to the project's emissions from other source categories. Breweries should include all criteria pollutant and greenhouse gas emissions due to processes such as fermentation, kegging, bottling, and canning, as well as any combustion equipment.

Winery Fermentation Emissions Calculator

The District has a *Winery Fermentation Emission Calculator* available at www.ourair.org/environmental-review-resources-and-notice/ to estimate ROC and GHG emissions from the fermentation process. Daily ROC emissions (lb/day) and annual GHG emissions (MT CO₂e/yr) should be included in total project emissions for comparison to applicable significance thresholds. The user will be required to enter in project information on the "Calculator" tab. When calculating potential emissions, the reasonable worst-case emissions scenario should address the maximum red wine production and aging capacities, since red wine production has higher emissions. The analysis should be based on the default assumptions and emission factors, unless project-specific information is available from the applicant. Justification for any changes to emission factors should be provided.

The spreadsheet can be used first as a screening tool by assuming only red wine production and that all wine is aged in oak barrels (with no changes to the default settings). If the project does not pass this screening (i.e., the total emissions exceed the CEQA significance threshold) then additional information should be provided by the applicant for District review. This includes:

- a) Plant/facility process diagram showing the process equipment layout
- b) Equipment design data for each device (size, capacity, ratings)
- c) Supporting documentation and/or calculations that support the data input values, including the total number of oak barrels
- d) If applicable, explain what happens to red wine that is not aged in oak

Emissions from Generators and Boilers

Generators and boilers emit criteria pollutants and greenhouse gas that should be included in the project's total emissions. This equipment should be modeled in CalEEMod via the "Stationary Sources" input screens. Equipment-specific size/capacity (such as horsepower or BTUs) should be entered, as well as worst-case hours of operation per day and per year. Typically, the assumed hours of operation should align with the maximum permitted hours of operation by the District if a District permit is required for the equipment. Diesel generators greater than 50 horsepower and boilers larger than 2.0 MMBTU/hr require District permits. Also note that diesel generators may require the preparation of a Health Risk Assessment (refer to Section 5.6.1 *Health Risk Assessments* for more information).