

**Attachment A**  
**(Proposed changes to Section C.2.a. identified with strikeout/underline text)**

**Chapter 5 – Air Quality Thresholds**  
**County of Santa Barbara Environmental Thresholds and Guidelines Manual**

*Approved: Santa Barbara County Board of Supervisors, April 19, 1994*

## **5. AIR QUALITY THRESHOLDS**

### **A. Introduction**

Air quality thresholds of significance are intended to help local agencies determine whether a discretionary project will individually or cumulatively have a significant effect on air quality. Santa Barbara County does not meet the state clean air standards for ozone and the state standard for fine particulate matter. Unmitigated air pollution emissions from the operation of some development projects could impair the region's progress in meeting the ozone and fine particulate matter standards.

These thresholds are designed to be used by environmental professionals preparing documents under the California Environmental Quality Act (CEQA) and the land use decision makers who rely on these documents. The goal is to identify projects which may have a significant affect on air quality in Santa Barbara County, so that measures to reduce the impact can be incorporated into the project.

A separate implementation document, Air Quality Analysis for EIRs, explaining how to apply the air quality thresholds of significance is available from the County Planning and Development Department.

### **1. Resource Setting**

The federal government and the state of California have established ambient air quality standards to protect public health. California's standards are more protective of public health than the federal standards. State and federal standards have been established for the following pollutants, known as "criteria pollutants":

- ozone (O<sub>3</sub>)
- carbon monoxide (CO)
- nitrogen dioxide (NO<sub>2</sub>)
- sulfur dioxide (SO<sub>2</sub>)
- suspended particulate matter 10 microns or less in diameter (PM<sub>10</sub>)
- lead

In addition, California standards have been established for:

- sulfates (SO<sub>4</sub>)
- hydrogen sulfide (H<sub>2</sub>S)
- vinyl chloride
- visibility reducing particles.

**Table 1** shows the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for ozone, CO, H<sub>2</sub>S, NO<sub>2</sub>, and PM<sub>10</sub>. The table also shows whether the air in Santa Barbara County meets these standards (attainment) or violates them (nonattainment).

Sulfur dioxide, lead, sulfates, vinyl chloride, and visibility reducing particles are not generally a problem in this region and are not discussed further in this document. However, these and other pollutants are regulated by the APCD under their rules and regulations.

The entire County of Santa Barbara violates the federal and state standards for ozone and the state standard for PM<sub>10</sub> (particulate matter with an aerodynamic diameter of less than 10 microns). Ozone air pollution is formed when reactive organic compounds (ROC) and nitrogen oxides (NO<sub>x</sub>) react in the presence of sunlight. Ozone is a regional pollutant; ozone concentrations throughout the county do not always correspond with the location of sources of the ozone precursors ROC and NO<sub>x</sub>. The major sources of ozone precursor emissions in Santa Barbara County are motor vehicles, the petroleum industry and solvent usage (paints, consumer products and certain industrial processes). Sources of PM<sub>10</sub> include mineral quarries, grading, demolition, agricultural tilling, road dust, and vehicle exhaust. Additional information on ozone, PM<sub>10</sub>, and other pollutants of concern is provided in the 1991 Air Quality Attainment Plan.

## **2. Air Pollution Control District Rules and Regulations**

The Santa Barbara County Air Pollution Control District (APCD) is the agency responsible for regulating stationary sources (businesses and industry) of air pollution in Santa Barbara County. Examples of businesses that emit air pollution include gasoline stations, auto body shops, dry cleaners, oil and gas facilities, and water treatment plants. The APCD regulates these and other businesses by issuing permits and adopting rules, as required by state and federal air pollution control laws.

The air quality thresholds are intended to provide guidance in evaluating the significance of adverse long-term air quality impacts from all sources, including businesses not regulated by the APCD and motor vehicles. These thresholds of significance are unrelated to the permitting requirements of the APCD and cannot be used to determine whether a project will need an APCD permit. For information on whether a project will require an APCD permit, please contact the Permitting Section Supervisor of the APCD. For assistance in applying the thresholds in this manual please contact the Supervisor of the Interagency Review Section of the APCD. Both section supervisors may be reached at (805) 961-8800.

**Table 1**

**Federal and State Ambient Air Quality Standards  
and Attainment Status of Selected Pollutants in Santa Barbara County**

Pollutant & Averaging Time	Standard		Attainment Status	
	Federal	State	Federal	State
Ozone 1 hour	0.12 ppm	0.09 ppm	Nonattainment <sup>a</sup>	Nonattainment <sup>a</sup>
NO <sub>2</sub> Annual Average 1 hour	0.053 ppm -	- 0.25 ppm	Attainment	Attainment
CO 1 hour 8 hours	35 ppm 9 ppm	20 ppm 9 ppm	Attainment <sup>b</sup> Attainment	Attainment <sup>b</sup> Attainment
H <sub>2</sub> S 1 hour	-	0.03 ppm	-	Attainment <sup>c</sup>
PM <sub>10</sub> 24 hours AGM <sup>d</sup> AAM <sup>e</sup>	150 ug/m <sup>3</sup> - 50 ug/m <sup>3</sup>	50 ug/m <sup>3</sup> 30 ug/m <sup>3</sup>	Attainment - Attainment	Nonattainment Nonattainment

Notes

- a. Nonattainment for entire County. Based on monitoring data as of 1993, the County has achieved the Federal ozone standard and the APCD will be applying to the USEPA for redesignation to an "attainment area".
- b. "Hot spots" at congested intersections may violate standards during the peak hour.
- c. Recently designated as attainment.
- d. Annual Geometric Mean.
- e. Annual Arithmetic Mean.

### 3. The California Environmental Quality Act (CEQA)

The air quality impact analysis in an environmental document required under CEQA should include the elements described in the APCD's Scope and Content of Air Quality Sections in Environmental Documents. This document is available upon request from the Interagency Review section of the APCD. Briefly, the air quality impact analysis in an Environmental Impact Report (**EIR**) should include:

- **existing environmental setting** of the area affected by the project, in terms of climate and current air quality;
- a discussion of all direct and indirect, long term and short term, **air quality impacts of the proposed project and the classification of the significance of long-term impacts using established criteria**;
- significant **cumulative air quality impacts** of the project;
- **consistency** of the project with local and regional plans, including the Air Quality Attainment Plan;
- **mitigation measures** to reduce or avoid potentially significant air quality impacts, including effectiveness of mitigation measures and discussion of **residual impacts**;
- 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;
- **potential growth inducing effects** of the project on air quality;
- required air quality mitigation measures in the **Mitigation Monitoring and Reporting Plan (MMRP)**.
- appendices containing all calculations and assumptions used in assessing long-term air quality impacts.

The air quality sections of Negative Declarations (**NDs**) should include a brief description of the air quality setting as it relates to project impacts, mitigation measures and inclusion of all air quality mitigation measures in the MMRP.

#### B. Determining Significance of Air Quality Impacts

The two major criteria for determining if a project will have a potentially significant adverse air quality impact are listed below. These criteria are based on Appendix G of the State CEQA Guidelines. If the project meets either of the two listed criteria, the impacts must be discussed and analyzed in detail and appropriate mitigation measures must be identified. **Section 3** provides the quantitative emission thresholds and screening tables to determine the significance of long-term (operational) impacts of the project. **Sections 4 and 5** discuss cumulative impacts and consistency with the AQAP. **Section 6** provides guidance on how other air quality considerations should be described.

A significant adverse air quality impact may occur when a project, individually or cumulatively, triggers any one of the following:

- interferes with progress toward the attainment of the ozone standard by releasing emissions which equal or exceed the established long-term quantitative thresholds for NO<sub>x</sub> and ROC;
- equals or exceeds the state or federal ambient air quality standards for any criteria pollutant (as determined by modeling);

Cumulative air quality impacts and consistency with the policies and measures in the Air Quality Supplement of the Comprehensive Plan, other general plans, and the Air Quality Attainment Plan (AQAP) should be determined for all projects (i.e., whether the project exceeds the AQAP emission projections or growth assumptions).

The following issues should be discussed only if they are applicable to the project.

- Emissions which may affect sensitive receptors (e.g. children, elderly or acutely ill);
- Toxic or hazardous air pollutants in amounts which may increase cancer risk for the affected population; or
- Odor or another air quality nuisance problem impacting a considerable number of people.

### C. Quantitative Emission Thresholds

CEQA requires that the significance of a project's direct and indirect emissions be determined for both short-term (construction) and long-term (operational) impacts. If a project's air quality impacts are found to be significant, then mitigation measures will be required. Numeric emission thresholds of significance have been established for the ozone precursors NO<sub>x</sub> and ROC. Criteria for triggering modeling have been established for carbon monoxide (CO). In order to determine if a project exceeds these quantitative thresholds, the expected emissions of these pollutants from the project must be calculated. Because calculations can be time consuming, the APCD has developed screening tools to identify projects not likely to exceed the thresholds. These sizes of projects are based on simple calculations that show the relationship between the size of a project and potential emissions.

If a project is smaller in size than the project sizes listed, project-specific emission calculations are generally not required. **If the project is equal to or larger than any size listed, is not similar to any of the categories listed, or is subject to an APCD permit, then emission calculations may be required.** Emission calculations in the environmental document must provide the methodology used to estimate the emissions, including input data, assumptions, and all calculations. Emission calculation methods or modeling inputs using URBEMIS, EMFAC, CALINE or other air quality analysis tools must be fully documented so that the calculations or modeling can be duplicated and confirmed by the APCD. In order to be given emission reduction credits for mitigation measures which can be quantified, emission calculations must be approved by the APCD.

#### 1. Short-term/Construction Emissions

Short-term air quality impacts generally occur during project construction. CEQA requires a discussion of short-term impacts of a project in the environmental document. The reasoning for considering short-term impacts insignificant is provided below.

No quantitative threshold has been established for short-term, construction related PM<sub>10</sub> (which is 50% of total dust). However, this impact should be discussed in all environmental documents for projects involving ground disturbance. Dust control measures are required under the County of Santa Barbara's Grading Ordinance for most projects. Some projects have the potential for construction-related dust to cause a nuisance. Also, Santa Barbara County violates the state standard for PM<sub>10</sub>. Therefore, dust mitigation measures are required for all discretionary construction activities. The standard dust mitigation measures are based on policies in the 1979 AQAP and are listed in a separate implementation document, Air Quality Analysis for EIRs, available from Planning and Development.

The short-term thresholds for NO<sub>x</sub> and ROG emissions from construction equipment were not established. Emissions of NO<sub>x</sub> from construction equipment in the County are estimated at 1000 tons per year of NO<sub>x</sub>. When compared to the total NO<sub>x</sub> emission inventory for the County of approximately 17,000 tons per year, construction emissions comprise approximately six percent of the 1990 county-wide emission inventory for NO<sub>x</sub> (Santa Barbara County 1993 Rate-of-Progress Plan). In general, this amount is considered insignificant.

## **2. Long-term/Operational Emission Thresholds**

Long-term air quality impacts occur during project operation and include emissions from any equipment or process used in the project (e.g., residential water heaters, engines, boilers, operations using paints or solvents) and motor vehicle emissions associated with the project. These emissions must be summed in order to determine the significance of the project's long-term impact on air quality.

### **a. Ozone Precursors (NO<sub>x</sub> and ROC)**

~~The long-term air quality threshold of significance is 25 pounds per day of either nitrogen oxides (NO<sub>x</sub>) or reactive organic compounds (ROC).~~

*A proposed project will not have a significant air quality effect on the environment, if:  
Operation of the project will:*

- emit (from all project sources,<sup>1</sup> mobile and stationary), less than the daily trigger<sup>2</sup> for offsets set in the APCD New Source Review Rule, for any pollutant; and*
- emit less than 25 pounds per day of oxides of nitrogen (NO<sub>x</sub>) or reactive organic compounds (ROC) from motor vehicle trips only; and*
- not cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone); and*
- not exceed the APCD health risk public notification thresholds adopted by the APCD Board; and*

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<sup>1</sup> Portable equipment registered under the California Air Resources Board Statewide Portable Equipment Registration Program (PERP) shall not be included a proposed project's emission total. Emissions from these sources are included in the County's Clean Air Plan inventory under the ARB PERP program, and are exempt from APCD permits.

<sup>2</sup> Where projects exceed the offset trigger, the significant effect shall be considered mitigable to insignificance where APCD rules require offsets and net emissions after offsets are less than the trigger for offsets.

- be consistent with the adopted federal and state Air Quality Plans.

Long-term project emissions primarily stem from motor vehicles associated with the land use project and stationary sources which may require permits from the APCD. Examples of stationary emission sources include: gas stations, auto body shops, dry cleaners, oil and gas production and processing facilities, and water treatment facilities. Some stationary sources such as residential heating and cooling equipment, wood burning stoves and fireplaces, or other individual appliances do not require permits from the APCD. Emissions from wood burning stoves may be significant for housing developments of 250 homes or more. Emissions from appliances may be significant for developments of about 1000 homes or for commercial projects. These emissions should be included in the operational phase emission evaluation. The APCD should be contacted for assistance with estimating direct emissions from stationary sources.

**Stationary source emissions must be added to transportation source emissions prior to applying the project-specific threshold of significance.**

~~**Project screening for long-term impacts:** Table 2 is a screening table showing size estimates of the types of land use projects that may exceed 25 lbs per day of NO<sub>x</sub> and ROC. The screening table, Table 2, is based on trip generation rates from the Institute of Traffic Engineers (ITE). If the levels in the screening table are exceeded, then specific details about the project location, surrounding uses, linked and pass-by trips, etc., will need to be evaluated. Currently, there is no universally accepted model or procedure to account for diverted trips. Until such time as new methodologies have been developed, staff recommends that diverted trip assignments be made on a case-by-case basis using site-specific data. A general methodology for calculating emissions from vehicles and a description of several sources of information for emission factors are discussed in the Air Quality Analysis for EIRs document available from Planning and Development. The air quality analysis tools are revised periodically so **Table 2 is subject to change when the URBEMIS 3 model is updated.**~~

**Table 2**  
**Screening Table to Determine Potentially**  
**Significant Long-Term Air Quality Impacts**

*Approximate Project Sizes with a Potential to Exceed 25 Pounds/Day VOC or NO<sub>x</sub> Emissions  
(based on URBEMIS 3 modeling; subject to change when model is updated)*

PRIMARY LAND USE	DAILY TRIP RATES	PROJECT SIZE
<b>RESIDENTIAL</b>		
Single Family Housing	10.0/unit	125 units
Apartment <10 units/acre	6.1/unit	230 units
10-20 units/acre	5.4/unit	260 units
>20 units/acre	3.7/unit	350 units
Condominium (Family)	8.9/unit	150 units
(Adult)	6.4/unit	200 units
Mobile Home	5.4/unit	240 units
Retirement Community	3.3/unit	250 units
<b>COMMERCIAL &amp; INDUSTRIAL</b>		
Discount Store	64.6/1000 sq. ft.	25,000 sq. ft.
Shopping Center	296.0/1000 sq. ft.	7,500 sq. ft.
Regional	71.0/1000 sq. ft.	30,000 sq. ft.
Community	117.0/1000 sq. ft.	18,000 sq. ft.
Neighborhood	553.0/1000 sq. ft.	4,000 sq. ft.
Convenience Market (24 Hour)	21.3/1000 sq. ft.	95,000 sq. ft.
Commercial Strip Business	22.7/1000 sq. ft.	75,000 sq. ft.
Commercial Office	20.7/1000 sq. ft.	76,000 sq. ft.
	90.5/1000 sq. ft.	24,000 sq. ft.
Office Park	7.3/1000 sq. ft.	220,000 sq. ft.
Medical Office Building	4.0/1000 sq. ft.	330,000 sq. ft.
Industrial Park		
Manufacturing		
Restaurant		
Quality	56.3/1000 sq. ft.	36,000 sq. ft.
High Turnover	200.9/1000 sq. ft. <sup>(b)</sup>	10,500 sq. ft.
Fast Food	652.0/1000 sq. ft.	3,500 sq. ft.
Fast Food w/ Drive Thru	632.1/1000 sq. ft. <sup>(b)</sup>	3,500 sq. ft.
Bank Walk In	169.0/1000 sq. ft.	1,200 sq. ft.
Drive In	192.0/1000 sq. ft.	1,100 sq. ft.
Hospital	14.4/bed	125 beds
<b>ASSUMPTIONS USED IN THE URBEMIS PROGRAM:</b>		
Air Basin: South Coast Central		
Year: 1995		
Temperature: 50 degrees Fahrenheit		

- (a) Trip rates are from the URBEMIS 3 program unless otherwise noted. ARB documentation indicates that URBEMIS trip rates are from ITE's Trip Reduction manual (Institute for Transportation Engineers, 1987).
- (b) Trip rate from the ITE Trip Generation manual (5th ed.).



## **b. Carbon Monoxide (CO)**

A project will have a significant air quality impact if it causes, by adding to the existing background CO levels, a carbon monoxide "hot spot" where the California one-hour standard of 20 parts per million carbon monoxide is exceeded. This typically occurs at severely congested intersections.

### **Project Screening for CO Impacts:**

- 1) If a project contributes less than 800 peak hour trips, then CO modeling is not required.
- 2) Projects contributing more than 800 peak hour trips to an existing congested intersection at level of service (LOS) D or below, or will cause an intersection to reach LOS D or below, may be required to model for CO impacts. However, **projects that will incorporate intersection modifications to ease traffic congestion**, are not required to perform modeling to determine potential CO impacts.

CO concentrations at congested intersections can be estimated using air quality impact modeling such as CALINE4 or similar models. The CALINE4 model requires intersection-specific, operational data on vehicles per hour and hourly departure volumes obtained from a project-specific traffic study. The methodology is described in the Air Quality Analysis for EIRs, available from Planning and Development.

## **D. Cumulative Impacts**

Cumulative air quality impacts are the effect of long-term emissions of the proposed project on the projected regional air quality or localized air pollution problems in the County. As discussed in the County's 1993 CEQA Guidelines (Guidelines for the Implementation of the California Environmental Quality Act of 1970, as amended (revised 12/21/93)), the cumulative contribution of project emissions to regional levels should be compared with existing programs and plans, including the AQAP. To evaluate the cumulative impacts of localized pollutants, the contribution of the project's emissions to background levels should be considered. Due to the county's nonattainment status for ozone and the regional nature of the pollutant, if a project's total emissions of the ozone precursors, NO<sub>x</sub> or ROC, exceed the long-term threshold of 25 lbs/day, then the project's cumulative impacts will be considered significant. For projects that do not have significant ozone precursor emissions or localized pollutant impacts, emissions have been taken into account in the AQAP growth projections and therefore, cumulative impacts may be considered to be insignificant.

## **E. Consistency With The APAQ and Other Planning Documents**

Consistency with local and regional plans, such as the Air Quality Attainment Plan (AQAP), the Congestion Management Plan (CMP) and the Regional Transportation Plan (RTP) is required under CEQA. Under the Federal Clean Air Act, projects which receive federal funding or are subject to federal approval must show conformity with the State Implementation Plan, of which the AQAP is a part. Proposed projects subject to AQAP consistency determinations include a wide range of activities such as commercial, industrial, residential, and transportation projects. By definition, consistency with the AQAP, for the projects subject to these guidelines, means that stationary and vehicle emissions associated with the project are accounted for in the AQAP's emissions growth assumptions. The AQAP generally relies on the land use and population projections provided in the Santa Barbara County Association of Governments' Regional Growth

Forecast. The current criteria for determining consistency of these projects are explained in the implementation document, Air Quality Analysis for EIRs.

Consistency with the Air Quality Supplement of the County's Land Use Element must also be analyzed. The air quality policies in the Comprehensive Plan 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, such as pedestrian-oriented and transit-oriented development (TOD). The TOD concept involves a mixed-use community within a typical 2,000-foot walking distance of a transit stop and core commercial area. The design, configuration and mix of uses emphasize a pedestrian-oriented environment and reinforce the use of alternative modes of transportation. TOD designs can help to reduce the number of auto trips and vehicle miles traveled by creating opportunities to walk and bike, while enhancing the area's quality of life and protecting affordable housing goals. The APCD may be contacted for reference material on these concepts. **The APCD also encourages early consultation prior to the CEQA determination by the lead agency.**

#### **F. Other Air Quality Issues Which May Be Applicable**

The following issues should be discussed if they are applicable to the project.

##### **1. Siting Criteria for Schools**

CEQA Section 21151.8 requires school districts to consider the impacts of siting a new school within one-quarter mile of existing facilities that emit toxic or hazardous air pollutants. The Interagency Review Section of the APCD should be contacted in writing for assistance in identifying the locations of such facilities within the proximity of proposed school sites. The APCD should also be contacted for assistance with health risk assessment methodology, if necessary.

##### **2. Toxic or Hazardous Air Pollutants**

Some classifications of projects are more likely than others to emit toxic pollutants. Table 5 lists **examples** of commercial or industrial activities that may be associated with toxic air pollutants. This list is not all inclusive.

**TABLE 3**

**Examples of Projects Which May Emit Toxic Air Pollutants**

<u>ACTIVITY</u>	<u>CHEMICAL</u>
Gas Stations	Benzene
Dry Cleaning	Tetrachloroethylene (Perchloroethylene) Carbon Tetrachloride
Medical Sterilization	Ethylene Oxide
Rubber/ Plastic Fabrication	Xylene
Electronic and Parts Manufacturing	1,1,1 Trichloroethylene and other chlorinated hydrocarbon solvents
Landfills	Vinyl chloride, Benzene, etc.

If any of these or other projects which emit toxic air pollutants, such as auto body shops, funeral homes etc., are involved, the APCD should be contacted for information. For most of these projects an APCD permit will be required. Health risk management decisions regarding the project will be addressed during the APCD permitting process to ensure that toxic emissions from the project are reduced to the maximum extent feasible.

**3. Nuisance**

Construction projects have a high probability of creating objectionable dust impacts. Also fugitive dust from construction is roughly 50 percent particulate matter that is 10 microns (or less) in diameter (PM<sub>10</sub>). PM<sub>10</sub> is a criteria pollutant with adverse health impacts. Sensitive receptors may be affected because of their location downwind. Dust mitigation measures are required under the County's Grading Ordinance for all projects involving earth moving activities over 50 cubic yards regardless of location.

If a project has the potential to cause an odor or other long-term air quality nuisance problem impacting a considerable number of people, the environmental document (Initial Study, ND or EIR) should describe the history of complaints from pre-existing conditions, the number of people affected and other relevant information so that the impacts can be mitigated where feasible. This information may be available in APCD files for certain areas. New projects that have a high probability of emitting objectionable odors or new developments that may be affected because of their location downwind should be identified early in the Initial Study. This may prevent nuisance problems after the project is built. Odor issues can sometimes be resolved by changing the location of the equipment or the process. **Nuisance impacts need not be quantified at the initial study stage and may be analyzed qualitatively on a case by case basis.**