

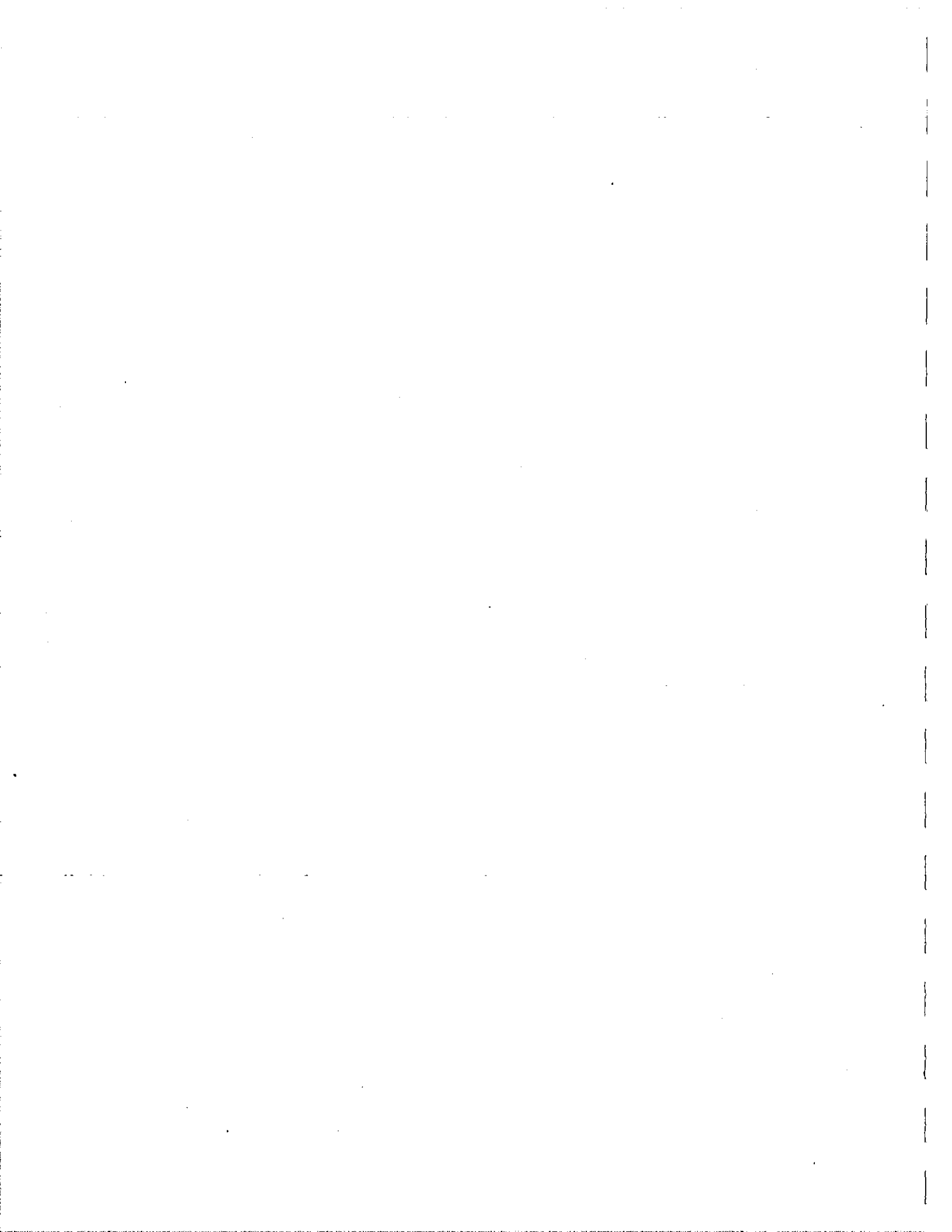
Initial Study and Determination of Significance

chapter 6

Determining the Air Quality Significance of a Project

Chapter 6 provides guidance on:

- Completing the Initial Study
- Determining whether the project will have a significant impact
- Significance thresholds for air quality
- Selecting the appropriate level of environmental documentation
- Use of previous EIRs



DETERMINING THE AIR QUALITY SIGNIFICANCE OF A PROJECT

CHAPTER 6

Section 15002(g) of the state CEQA Guidelines defines a significant effect on the environment as "a substantial adverse change in the physical condition which exists in the area affected by the proposed project." Further, the project is considered to be of statewide, regional, or area-wide significance if it, for example, interferes with attaining the federal or state air quality standards (CEQA Guidelines Section 15206(b)(2)). To determine the significance of a project, CEQA requires the preparation of an Initial Study by the project proponent or lead agency. The Initial Study will evaluate the impact of the proposed project upon the environment, including air quality. From an air quality perspective, the impact of the project is determined by examining the types and levels of emissions generated by the project and its impact on factors that affect air quality. As such, projects should be evaluated in terms of air pollution thresholds established by the District. The thresholds of significance differ for the SCAB and the Coachella Valley. The scope of the evaluation and the extent of the required CEQA review will depend upon the estimated extent of the impact as determined by the lead agency in the Initial Study.

6.1 Preparing the Initial Study

To assist local planners and project proponents in answering the questions in the Initial Study, and thereby determining the air quality significance of a project, the key air quality issues to consider in each Initial Study category are summarized in Table 6-1.

Beyond the obvious primary impact of specific emissions arising from the operation and construction of a project, there is the potential for secondary effects. Secondary effects include such things as: impacts on the earth, water, population, transportation/circulation, energy/utilities, human health, and public services, that affect air quality indirectly. Among these secondary effects are, for example, high CO emissions from degradation in roadway level of service and NOx from power plants producing energy. All of those emissions contribute to air pollution, and need to be included in the project's emissions calculations. CEQA requires that in evaluating the significance of the environmental effect of a project, the lead agency shall consider both primary or direct and secondary or indirect consequences (CEQA Guidelines Section 15064 (d)). The impact of a project needs to be evaluated in terms of emission thresholds and other indicators of potential air quality impacts.

6.2 SCAB Air Pollution Thresholds for Operations

As seen above, new and modified projects will affect regional air quality both directly and indirectly. To determine the extent of a proposed project's environmental impact and the significance of such impact the project should be compared to established levels of significance. The District has established two types of air pollution thresholds to assist lead agencies in determining whether or not the operation phase of a project is significant. These can be found in the following sections under: 1) emission thresholds; and 2) additional indicators. If the lead agency finds that the operational phase of a project has the potential to exceed either of the air pollution thresholds, the project should be considered significant.

o Emission Significance Thresholds (Primary Effects)

The District has established these thresholds, in part, based on Section 182 (e) of the federal Clean Air Act which identifies ten tons a year of volatile organic gases as the significance level for stationary sources of emissions in extreme non-attainment areas for ozone. The South Coast Air Basin is the only extreme non-attainment area in the United States. This emission threshold has been converted to a pounds per day threshold for the operational phase of a project. The District staff also evaluated the thresholds established by other air quality management agencies in California and has taken into account the effect the thresholds would have on local governments' work load.

While Section 15064 (b) of CEQA Guidelines states that an ironclad definition of a significant effect is not possible because the significance of an activity may vary with the setting, the District believes that the setting as referred to in CEQA can be defined in this case. Under California state law (Health and Safety Code Section 40402), the South Coast Air Basin is defined as a distinct geographic area with a critical air pollution problem for which ambient air quality standards have been promulgated to protect public health. As such, the District believes that significance thresholds can be established based on scientific and factual data that is contained in the federal and state Clean Air Acts. Therefore, the District recommends that these thresholds be used by lead agencies in making a determination of significance. However, the final determination of whether or not a project is significant is within the purview of the lead agency pursuant to Section 15064 (b) of the CEQA Guidelines.

Both direct and indirect emissions should be included when determining whether the project exceeds these thresholds. The following significance thresholds for air quality have been established by the District for project operations:

55 pounds per day of ROC

55 pounds per day of NOx

550 pounds per day of CO

150 pounds per day of PM10

150 pounds per day of SOx

Ca. state 1-hour or 8-hour CO standard

Projects in the South Coast Air Basin (SCAB) with daily operation-related emissions that exceed any of the above emission thresholds should be considered to be significant.

Planners and project proponents may determine if a project is likely to be significant by screening the project using Table 6-2. The land uses listed therein are based on the mobile source emissions from projects that have the potential to exceed the emission thresholds. Table 6-2 does not cover all proposed projects or situations. If site-specific information is available, the MAAQI model or emission calculation procedures discussed in Chapter 9 of this Handbook can be used to estimate emissions totals to determine significance. Any emission reductions resulting from existing rules and ordinances should be calculated as the project's non-mitigated emissions and discussed in the project description.

In addition, level of service can be used as a screening method for determining when vehicle trips will impact a roadway, thus violating the state 1-hour or 8-hour standard, and creating a CO hotspot. Refer to Section 9.4.

o Additional Indicators of Potential Air Quality Impacts (Secondary Effects)

Additional indicators should be used as screening criteria indicating the need for further analysis with respect to air quality. Whenever possible, the project should be evaluated in a quantitative analysis; otherwise a qualitative analysis is appropriate. The additional indicators are as follows:

- o Project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation (refer to Chapter 12 and Appendix G, Significant Effects, State CEQA Guidelines);
- o Project could result in population increases within the regional statistical area which would be in excess of that projected in the AQMP and in other than planned locations for the project's build-out year (refer to Chapter 12);
- o Project could generate vehicle trips that cause a CO hot spot (refer to Section 9.4);

- o Project will have the potential to create or be subjected to an objectionable odor over 10 dilution to thresholds (D/T) (refer to Chapter 5) that could impact sensitive receptors;
- o Project will have hazardous materials on site (Table 10-4 and 10-5) and could result in an accidental release of air toxic emissions or acutely hazardous materials posing a threat to public health and safety (refer to Chapter 10);
- o Project could emit an air toxic contaminant regulated by District rules or that is on a federal or state air toxic list (refer to Appendix 10);
- o Projects could involve burning of hazardous, medical, or municipal waste as waste-to-energy facilities (refer to Chapters 10 and 13);
- o Projects could be occupied by sensitive receptors within a quarter mile of an existing facility that emits air toxics identified in District Rule 1401 (New Source Review of carcinogenic air contaminants) or near CO hot spots (refer to Chapters 5 and 10);
- o Project could emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of 10 in 1 million.

If the project has significant air quality impacts, an EIR should be prepared. If the impact of the project can be reduced below significant by the application of mitigation measures, then a Mitigated Negative Declaration (MND) can be prepared. The MND or EIR should quantify the level of emissions using the standards in this Handbook, and identify mitigation measures to lessen the project's impact to the greatest extent possible. The District recommends that all projects apply feasible mitigation measures to reduce individually and cumulatively significant air quality impacts to less than significant. Refer to Chapter 11 for an identification of mitigation measures, and the potential for emission reductions.

6.3 SEDAB (Under District Jurisdiction) Air Pollution Thresholds for Operations

The Coachella Valley and Antelope Valley, which are under the jurisdiction of the District, are in the SEDAB which has a distinctly different air pollution problem than the SCAB. The SEDAB is not classified as an extreme non-attainment area for ozone and therefore, the District has not changed the significance thresholds for the Coachella Valley and Antelope Valley from the 1987 version of this Handbook. In determining whether or not a project exceeds these thresholds, the project emissions should be calculated in the same manner as that for the SCAB (e.g. utilizing the highest daily emissions). These thresholds are as follows:

75 pounds per day of ROC

100 pounds per day of NOx

550 pounds per day of CO

150 pounds per day of PM10

150 pounds per day of SOx

Ca. state 1-hour and 8-hour CO standard

Projects in the Coachella Valley and Antelope Valley portion of the SEDAB with peak operation-related emissions that exceed any of the above emission thresholds should be considered significant.

As with the significance thresholds defined for the SCAB, planners and project proponents may determine if a project is significant by screening the project using Table 6-2 or the alternatives mentioned in Section 6.2. Level of service can also be used for determining a likely violation of the state 1-hour or 8-hour CO standard for the Coachella Valley and Antelope Valley.

The additional indicators of potential air quality impacts identified in Section 6.2 should also be used in determining if a project is significant in the Coachella Valley and Antelope Valley.

6.4 Construction Emission Thresholds for SCAB and Coachella Valley

Both the SCAB and SEDAB (that portion under the jurisdiction of the District) exceed the federal and state PM10 standards. The problem in these areas results from fugitive dust distributed during construction, from transport of disturbed dust on roadways by vehicles and wind. However, since a project's impact is limited to the construction phase, and level of mitigation, the procedure for determining significance is different than that for a project's operational impacts. When estimating a project's construction-related emissions, the emissions can be averaged over a 3-month period to include only actual working days.

The following significance thresholds for air quality have been established by the District on a quarterly basis:

2.5 tons per quarter of ROC

2.5 tons per quarter of NO_x

24.75 tons per quarter of CO

6.75 tons per quarter of PM10

6.75 tons per quarter of SO_x

However, if emissions on an individual day exceed 75 lbs a day for ROC, or 100 lbs a day for NO_x, or 550 lbs a day for CO, or 150 lbs a day for PM10 and SO_x, the project should be considered significant.

Projects in the SCAB or SEDAB with construction-related emissions in a quarterly period that exceed any of the emission thresholds should be considered to be significant.

Table 6-3 provides a screening table for determining when a project's construction emissions could exceed the threshold of significance

6.5 Selecting the Appropriate Document

Upon completion of the Initial Study, the lead agency in consultation with responsible agencies determines the most appropriate type of environmental documentation, (i.e., a Negative Declaration (ND), a Mitigated Negative Declaration (MND), or an Environmental Impact Report (EIR)). Specific criteria for determining the appropriate environmental document with respect to air quality are described below. Table 6-4 provides a quick reference for planners to determine the appropriate environmental documents for particular types of land use projects.

o Negative Declarations

A Negative Declaration (ND) is prepared if the Initial Study identifies no significant environmental impacts from the project. Before the release of the ND for the project, the lead agency must determine that there is no substantial evidence that the project without mitigation may have a

significant adverse effect on the environment. Article 6 of the State CEQA Guidelines contains the requirements for the ND process and the contents of an ND.

The District recommends that a ND be prepared for any project if it meets all of the below criteria:

- (a) The construction or operation of the project will not exceed the emission thresholds of significance as established by the District.
- (b) The project will not cause a CO hot spot.
- (c) The project will not be occupied primarily by sensitive individuals within a quarter mile of any facility that emits air toxic contaminants which could result in a health risk for pollutants identified in District Rule 1401 or exposure to a CO hot spot.
- (d) The project could not result in the accidental release of air toxic emissions or acutely hazardous materials, posing a threat to the public (Table 10-4 and 10-5).
- (e) The project will not emit an air contaminant regulated by the District, or found on a federal or state air toxic list, and which causes a significant health risk (see section 6.2).
- (f) The project does not involve the burning of municipal, hospital, or hazardous waste.
- (g) The project will not violate any ambient air quality standard, contribute substantially to an existing or projected violation or expose sensitive receptors to substantial pollution concentrations (Refer to Appendix G, Significant Effects, State CEQA Guidelines).
- (h) The project will not have a significant effect on the environment from a cumulative standpoint (Chapter 9).

o Mitigated Negative Declarations

Although the State CEQA Guidelines do not explicitly identify a document called a Mitigated Negative Declaration (MND), this term has come into use to refer to a specific type of environmental document. If an Initial Study is prepared for a project and significant adverse environmental impacts are identified, an MND may be prepared for that project if all potential impacts can be eliminated or mitigated to a level of insignificance. An MND is only appropriate for those projects that have been revised or modified by the application of mitigation measures that reduce the impact below the level of significance. Those mitigation measures then become part of the project description so that the project no longer has a significant impact and, therefore, may be addressed through a ND. The MND is subject to the same requirements as is an ND (see Article 6 of the state CEQA Guidelines).

In order to determine if all impacts are mitigated, all emissions associated with the project as well as the mitigation measures should be quantified through use of either the screening table (Table 6-2), the emission calculation procedures described in Chapter 9, or the MAAQI model. In order to determine the net air quality impact after mitigation is applied, mitigation measures efficiency may be derived by using the data in Tables 11-2, 11-3, 11-4, 11-6, and 11-7; the calculation procedures described in Chapter 11; or the MAAQI model. The District recommends that all projects employ all feasible mitigation measures to reduce individually and cumulatively significant air quality impacts caused by the project to less than significant. Refer to Chapter 11 for an identification of mitigation measures, and the potential for emission reductions.

Agencies certifying MND must take affirmative steps to determine that approved mitigation measures are implemented subsequent to project approval. Specifically, a mitigation monitoring and reporting plan must be prepared pursuant to Public Resources Code 21081.6 for any mitigation measures incorporated into the project or imposed as a condition of approval.

The District recommends that an MND be prepared for any project if it meets all of the following criteria:

- (a) The construction or operation of the project may result in the threshold emissions being exceeded; however, quantifiable mitigation measures have been prescribed that reduce the emissions to below the significance thresholds.
- (b) The project may cause a CO hot spot; however, quantifiable mitigation measures have been prescribed to prevent it.
- (c) The project will not violate any ambient standard, contribute substantially to an existing or projected violation after mitigation or expose sensitive receptors to substantial pollutant concentrations. (Refer to Appendix G, Significant Effects, State CEQA Guidelines).
- (d) The project could result in the accidental release of air toxic emissions or acutely hazardous materials, posing a threat to the public (Tables 10-4 and 10-5); however mitigation measures (e.g. safety engineering practices) have been prescribed that reduce the risk of a release to insignificance.
- (e) The project could emit an air toxic contaminant that is regulated by the District, or is found on a federal or state air toxic list, and which causes a significant health risk (see Section 6.2); however, mitigation measures are employed which reduce the impact to insignificant.
- (f) The project does not involve the burning of municipal, hospital, or hazardous waste.
- (g) The project may have a significant effect on the environment from a cumulative standpoint (Chapter 9); however, mitigation measures have been prescribed that make the project's cumulative impacts insignificant.

o Environmental Impact Reports

If the Initial Study identifies potential significant adverse impacts from the project that cannot be mitigated below the significance thresholds, then the lead agency should prepare an Environmental Impact Report for the project rather than a Mitigated Negative Declaration. A lead agency may also elect to prepare an EIR if there is serious public controversy over the environmental effects of the project. (Refer to CEQA Guidelines Section 15064(h)(1).)

As with a Mitigated Negative Declaration, all potential impacts should be quantified using the emission calculations procedures described in Chapter 9 for mitigation measures quantified pursuant to Chapter 11.

The District recommends that an Environmental Impact Report be prepared for any project that can be characterized by any of the criteria listed below:

- (a) The construction or operation of the project may result in the emission thresholds being exceeded even with application of all possible mitigation measures.
- (b) The project will be occupied primarily by sensitive individuals within a quarter mile of a facility that emits an air toxic contaminant(s) which could result in a health risk for pollutants identified in District Rule 1401 or exposure to a CO hot spot.
- (c) The project would create a CO hot spot.
- (d) The project could result in the accidental release of air toxic emissions or an acutely hazardous material (Tables 10-4 and 10-5) posing a threat to the public health and safety.
- (e) The project will emit an air toxic contaminant that is regulated by the District, or found on a federal or state air toxic list, and which causes a significant health risk (see Section 6.2).
- (f) The project involves the burning of municipal, or hospital, or hazardous waste.

- (g) The project will violate any ambient air quality standard, contribute substantially to an existing or projected violation or expose sensitive receptors to substantial pollutant concentrations. (Refer to Appendix G, Significant Effects, State CEQA Guidelines.)
- (h) The project may have a significant effect on the environment from a cumulative standpoint (Chapter 9).

CEQA requires that immediately after deciding an EIR is required for the project, the lead agency shall send to each responsible agency a Notice of Preparation (NOP). (Refer to CEQA Guidelines Section 15082.) The District will respond to NOPs and provide lead agencies with guidance in preparing the EIR.

6.6 Use of Another EIR for Air Quality Analysis

Prior to adopting the 1991 AQMP, the District prepared a comprehensive program EIR to evaluate any adverse environmental impacts that could be generated by implementing the control measures and strategies contained in the 1991 AQMP. A program EIR was prepared because the AQMP is composed of strategies related to the "issuance of rules, regulations, plans, or general criteria to govern the conduct of a continuing program." (Refer to CEQA Guidelines Section 15168(a)(3).)

The 1991 AQMP is a blueprint outlining the strategies identified for achieving clean air. Therefore, environmental impacts were analyzed in broad, general terms. The level of detailed analysis in the 1991 AQMP EIR is commensurate with the degree of specificity of the strategies contained therein. This degree of specificity is consistent with requirements in the CEQA Guidelines which recognize that the level of detail of an environmental analysis is directly related to the level of detail of the project.

The AQMP provides valuable information for the preparation of the air quality sections of EIRs, as well as information that can be extracted or referenced. The AQMP EIR provides an in-depth analysis of potential control measures. Using the AQMP EIR as a program EIR and tiering other environmental documents after the AQMP EIR is appropriate for programs or projects which implement AQMP control measures; this includes District rules, local government Air Quality Elements, and ordinances that implement control measures.

Although CEQA allows an EIR from a previous project to be used for a later project (refer to CEQA Guidelines Section 15153), this can only occur if "such projects are essentially the same in terms of environmental impact." Consequently, the 1991 AQMP EIR should not be used as the EIR for a specific land use project because the level of detail of the analysis between the AQMP and a land use project is substantially different. Furthermore, the 1991 AQMP EIR did not analyze impacts from specific land use projects, therefore, it is unlikely that impacts resulting from the 1991 AQMP are essentially the same as impacts generated by land use projects. The AQMP EIR is only appropriate for land use projects as a reference on regional air quality issues and source for pollutant baseline emission levels.

The program EIR or MND should identify impacts that are different than those identified at the regional level in the AQMP EIR, as well as any local impacts. The program EIR or MND should also include any appropriate mitigation measures identified in the AQMP EIR, and any additional mitigation measures necessary to mitigate local impacts that were not identified in the AQMP. (Refer to Table 6-4 for a list of mitigation measures identified in the AQMP EIR for local government implementation.) These EIRs or MNDs should also be sent to the District for review and comments.

References

1991 AQMP EIR. Available from the District's Environmental Analysis Unit, (909) 396-3109.

California ARB, Transportation Performance Standards of the CCAA, May 1991. Available from ARB Transportation Strategies Group.

Table 6-1. Preparing the Initial Study

Category	Key Air Quality Issues to Consider
Earth	<p>Fugitive dust emissions from movement of soil Emissions from heavy duty diesel and gasoline-powered construction equipment Changes in topography that could affect wind patterns and cause emissions from the project to impact surrounding residential areas Alterations or expansions of landfills affecting public health as the result of moving toxic materials and contaminated soil Demolition of buildings containing asbestos Movement of contaminated soils</p>
Air Quality	<p>Emissions from construction (equipment and fugitive dust) or operation (vehicle trips and energy consumption) of the project will exceed the thresholds (refer to Table 6-2 for land uses that could exceed the thresholds) Projects that could create or be subjected to objectionable odors</p>
Water	<p>Projects that involve the disposal of toxic or hazardous compounds into wastewater or groundwater that produces air emissions when the compounds are removed</p>
Risk of Upset	<p>Projects that are located on or near an active earthquake fault (Alquist-Priola zone) and which could release acutely hazardous emissions due to an act of God or human error Projects using hazardous materials</p>
Population	<p>Projects resulting in population increases in excess of those projected in the Regional Growth Management Plan or projects locating population in areas other than those projected in the GMP, causing the region to fail to meet the federal and state air quality standards</p>
Transportation/Circulation	<p>Emissions from vehicle trips (passenger vehicles and trucks) that are attached to or generated by the project (including transportation projects) Projects generating significant trips that could create a CO hot spot Emissions from ships, aircraft and locomotive engines</p>
Energy/Utilities	<p>Projects demanding significant energy use, that produce emissions through the development of additional sources of energy Emissions from the development of power-generating facilities and waste-to-energy plans</p>

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Table 6-1. Preparing the Initial Study (continued)

Category	Key Air Quality Issues to Consider
Human Health	Projects occupied primarily by sensitive receptors within 1/4 mile of an existing source emitting toxic emissions Projects occupied by sensitive receptors located near an existing landfill or waste-to-energy project or waste disposal facility that could emit toxic/hazardous emissions
Public Services	Projects generating significant waste (solid, wastewater, hazardous) that increases demand for disposal facilities whose disposal methods (landfill/incineration) impact air quality Projects generating a significant amount of hazardous waste that could produce emissions through accidental release

(Not all issues apply to all projects)

Table 6-2. Screening Table for Operation – Daily Thresholds of Potential Significance for Air Quality

PRIMARY LAND USE		POTENTIALLY SIGNIFICANT AIR QUALITY IMPACT
RESIDENTIAL	Single Family Housing Apartments Condominiums Mobile Homes Retirement Community	166 units 261 units 297 units 340 units 612 units
EDUCATION	Elementary School High School Community College * University	220,000 sq. ft. 177,000 sq. ft. 150,000 sq. ft. 813 students
COMMERCIAL	* Airport Business Park Day Care * Discount Store Fast Food w/o Drive-Thru Fast Food with Drive-Thru * Hardware Store Hotel Medical Office Motel * Movie Theatre * Car Sales Office (small, 10–100) Office (medium, 100–200) Office (large, 200–>) Office Park Racquet Club Research Center Resort Hotel Restaurant * Restaurant (high-turnover) Shopping Center (small, 10–500) Shopping Center (medium, 500–1,000) Shopping Center (large, 1,000-1,600)	15 Daily Commercial Flights 136,000 sq. ft. 26,000 sq. ft. 32,000 sq. ft. 3,500 sq. ft. 2,800 sq. ft. 28,000 sq. ft. 213 rooms 61,000 sq. ft. 220 rooms 30,000 sq. ft. 43,000 sq. ft. 96,221 sq. ft. 139,222 sq. ft. 201,000 sq. ft. 171,000 sq. ft. 98,000 sq. ft. 245,000 sq. ft. 199 rooms 23,000 sq. ft. 9,000 sq. ft. 22,000 sq. ft. 50,000 sq. ft. 64,000 sq. ft.

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Refer to Appendix 6 for methodologies and assumptions used in preparing this table.

NOTES:

* Trip generation rates from the 5th Edition ITE Manual were based upon small sample sizes.

These size construction projects have the potential to exceed the daily emissions significance thresholds. Local governments should use these thresholds as screening tools when a project proponent first approaches the lead agency for a permit, to determine whether or not the proposed project will be significant. Moreover, using these thresholds, a project proponent should be advised to include feasible mitigation measures at the project design level rather than in the later stages of the project.

DEFINITIONS:

"Manufacturing" means to make goods and articles by hand or by machinery, often on a large scale and with division of labor.

"Industry" means any large-scale business activity or manufacturing productive enterprises collectively, especially as distinguished from agriculture.

Table 6-2. Screening Table for Operation – Daily Thresholds of Potential Significance for Air Quality (continued)

PRIMARY LAND USE		POTENTIALLY SIGNIFICANT AIR QUALITY IMPACT
COMMERCIAL (continued)	*Special Activity Centers (Stadiums and Amusement Parks) Supermarket	87 Employees 12,500 sq. ft.
INDUSTRIAL/ MINING	Light Industrial * Heavy Industrial Industrial Park Aircraft Manufacturing & Repairs Bulk Terminals Cement Plant Chemical Plant Hazardous Waste Treatment & Storage Manufacturing Mining Pulp/Paper Mills Refinery	276,000 sq. ft. 1,284,000 sq. ft. 276,000 sq. ft. ** ** ** ** ** 500,000 sq. ft. ** ** **
INSTITUTIONAL/ GOVERNMENTAL	* Clinic * Government Center * Hospital Library Nursing Home U.S. Post Office Freeway Lane Addition Designation of a New Transportation Corridor New Freeway/Highway Auxiliary Lanes Waterport Sewage Treatment Plant Rail Cogeneration Project Landfill Incineration Power Generating Facility Waste-To-Energy Plant	94,000 sq. ft. 83,000 sq. ft. 176 Beds 51,000 sq. ft. 741 Beds 26,000 sq. ft. All All All Beyond One Ramp ** ** All ** ** ** Hazardous, Medical or Municipal Waste ** **

Refer to Appendix 6 for methodologies and assumptions used in preparing this table.

NOTES:

- * Trip generation rates from the 5th Edition ITE Manual were based upon small sample sizes.
- ** New facilities, expansions or other change that could result in emissions exceeding the significance thresholds.

These size construction projects have the potential to exceed the daily emissions significance thresholds. Local governments should use these thresholds as screening tools when a project proponent first approaches the lead agency for a permit, to determine whether or not the proposed project will be significant. Moreover, using these thresholds, a project proponent should be advised to include feasible mitigation measures at the project design level rather than in the later stages of the project.

DEFINITIONS:

"Manufacturing" means to make goods and articles by hand or by machinery, often on a large scale and with division of labor.

"Industry" means any large-scale business activity or manufacturing productive enterprises collectively, especially as distinguished from agriculture.

per
91 days

Table 6-3. Screening Table for Construction - Quarterly Thresholds of Potential Significance for Air Quality

PRIMARY LAND USE		POTENTIALLY SIGNIFICANT AIR QUALITY IMPACT
RESIDENTIAL	Single Family Housing Apartments Condominiums Mobile Homes	1,309,000 sq. ft. GFA* 1,410,000 sq. ft. GFA 1,455,000 sq. ft. GFA 1,455,000 sq. ft. GFA
EDUCATION	Schools	660,000 sq. ft. GFA
COMMERCIAL	Business Park Day Care Center Discount Store Fast Food Government Office Complex Hardware Store Hotel Medical Office Motel Movie Theatre Office Resort Hotel Restaurant Shopping Center Supermarket	559,000 sq. ft. GFA 975,000 sq. ft. GFA 975,000 sq. ft. GFA 975,000 sq. ft. GFA 559,000 sq. ft. GFA 975,000 sq. ft. GFA 745,000 sq. ft. GFA 559,000 sq. ft. GFA 745,000 sq. ft. GFA 975,000 sq. ft. GFA 559,000 sq. ft. GFA 745,000 sq. ft. GFA 975,000 sq. ft. GFA 975,000 sq. ft. GFA 975,000 sq. ft. GFA
INDUSTRIAL		1,102,520 sq. ft. GFA
UNPAVED ROADS	Passenger Vehicle Loaded Truck	1,750 Vehicle Miles Traveled (1) 430 Vehicle Miles Traveled (1)
PAVED ROADS	Local Road Construction Road	24,000 Vehicle Miles Traveled (1) 5,000 Vehicle Miles Traveled (1)
DEMOLITION		23,214,000 Cubic Feet of Building
GRADING		177.00 Acres
*GFA = GROSS FLOOR AREA Refer to Appendix 6 for methodologies and assumptions used in preparing this table.		

NOTES:

(1) VMT is a function of linear road length and average daily trips.

These size construction projects have the potential to exceed the quarterly emissions thresholds of significance. Local governments should use these thresholds as screening tools when a project proponent first approaches the lead agency for a permit, to determine whether or not the proposed project will be significant. Moreover, using these thresholds, a project proponent should be advised to include feasible mitigation measures at the project design level rather than in the later stages of the project.

For daily thresholds, divide thresholds by 65, not 91.

Table 6-4. 1991 AQMP EIR Mitigation Measures Identified for Local Government Implementation

Environmental Topic	Impact	Mitigation Measure
Earth	Building/expanding transportation corridors, rail systems transmission lines, could affect topography or soils.	Use discretionary permit authority, place conditions on projects to control erosion, set landscape standards, etc.
Air Quality	Positive air quality impacts.	Implement indirect source control measures; recycling programs; promote energy efficiency for home appliances.
Water (Demand)	Increased demand for water as a fugitive dust suppressant during construction.	Use reclaimed water, non-toxic soil binders, pave dirt roads, etc.
Plant and Animal Life	Reduction in plant habitats and animal populations as a result of changes in land use designation or population relocations. (Primarily the result of factors other than AQMP.)	Establish project setting procedures to preserve sensitive habitat, protect animal populations, and preserve agricultural land.
Noise	Increased noise from construction of transit lines, freeways, etc.	Regulate hours of construction.
Light and Glare	Glare from solar panels for water heaters; increased density of industrial parks.	Establish building stands to screen panels and to minimize glare to adjoining residents.
Land Use	Shift in land uses; population relocation. (Primarily the result of factors other than the AQMP.)	Zoning changes; mixed land uses.
Natural Resources	Increased demand for natural resources, e.g. minerals, timber, etc., that will accompany infrastructure development and changes in land uses.	Establish recycling programs; promote conservation measures.
Population	Growth management and mode shifts resulting in population relocation.	Careful designation of transit routes; incorporate Regional Housing Needs Assessment into General Plan housing elements; use zoning and land use plans.

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Table 6-4. 1991 AQMP EIR Mitigation Measures Identified for Local Government Implementation (continued)

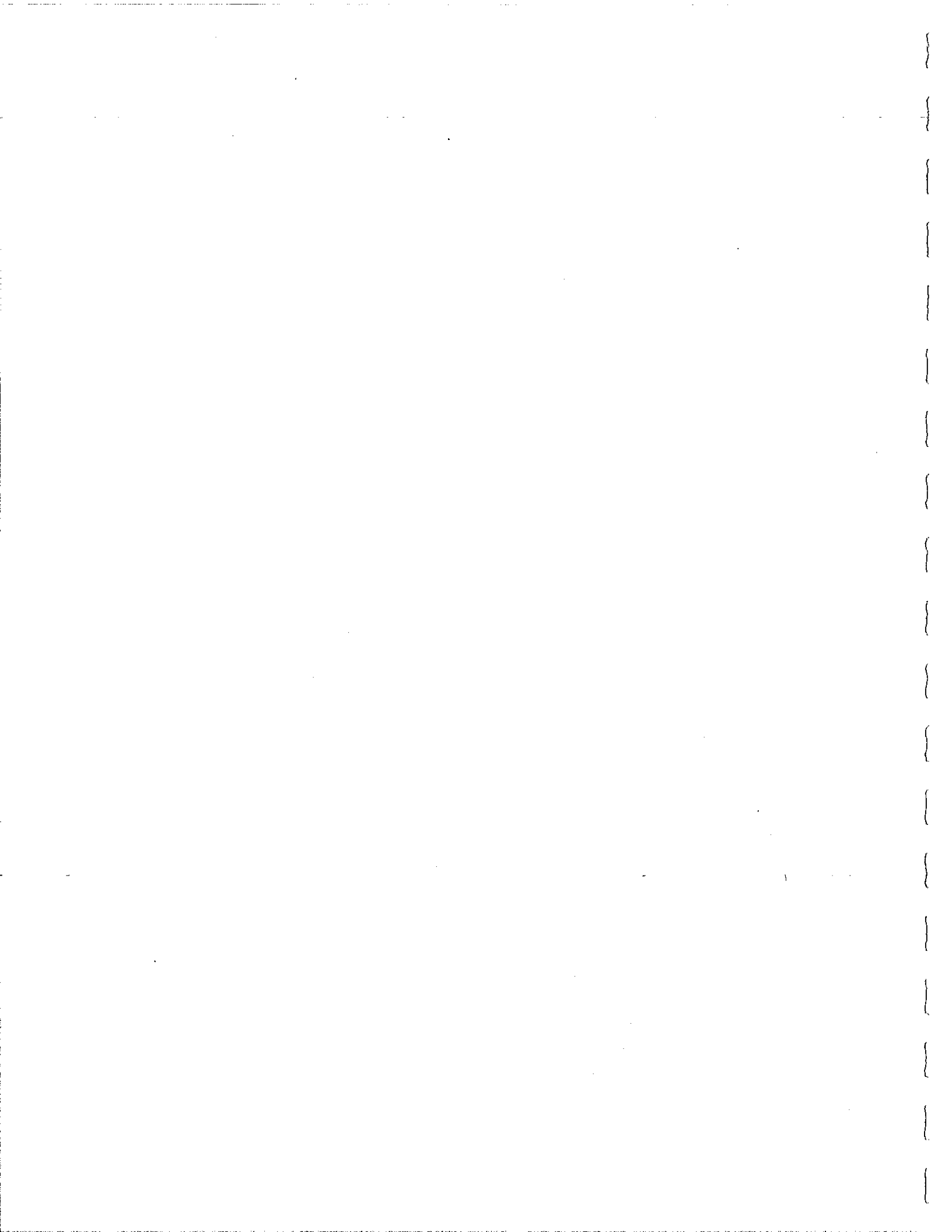
Environmental Topic	Impact	Mitigation Measure
Housing	Growth management policies may affect cost and distribution of housing.	Obtain VMT reduction through ISR measures; provide affordable housing through fee waivers or subsidies.
Transportation/ Circulation	Positive effect. Transportation congestion reduction.	VMT reductions through ISR measures; implement transportation management strategies; increase or expand urban transit systems.
Public Service Impacts	May require new and/or expanded services.	Work with the District to obtain technical and implementation support; secure new sources.
Energy	Shift away from petroleum-based liquid fuels to clean energy such as electricity or natural gas.	Improved standards for thermal integrity of building; high energy efficiency standards for major appliances and equipment; conservation programs; promote recycling.
Utilities-Solid Waste	AQMP has limited affect on solid waste disposal.	Promote recycling and waste minimization; establish conservation programs.
Aesthetics	Windbreaks to minimize fugitive dust could obstruct scenic vista; electrification of transit systems may produce visual impacts from overhead wires.	Establish architectural standards for windbreaks, e.g. height standards, use vegetation as windbreak; use underground electrical cables where possible.
Recreation	AQMP has limited affect, if any, on recreation resources.	Prepare/update local open space plans; establish development fees for new recreation facilities or maintain existing ones.
Cultural Resources	AQMP has limited affect, if any, on cultural resources.	Establish historical overlay zone status or equivalent for culturally significant sites.

chapter 10

Assessing Toxic Air Pollutants

Chapter 10 assists in the assessment of air toxics relative to:

- Identifying air toxic emission sources
- Interacting with the District permit process
- Recognizing acceptable risk levels
- Siting a sensitive receptor



ASSESSING TOXIC AIR POLLUTANTS

CHAPTER 10

During the past decade, concern has grown over certain air pollutants (other than the criteria pollutants) that may cause cancer or otherwise harm human health and the environment. Public interest and hence public policy clearly demand that air toxics and acutely hazardous materials be taken into account. Chapter 3 provides background information on air toxics, defining and explaining their origins. Chapter 5 discusses the siting of sensitive receptors within a close proximity to toxic emission sources. This chapter discusses three primary issues: 1) the analysis necessary for sources of air toxics, 2) the analysis necessary to assess the siting of sensitive receptors within a quarter mile of a toxic source, and 3) the analysis necessary to assess risks from acutely hazardous materials. Figure 10-1 illustrates the sequential flow of these analyses.

Projects emitting significant levels of air toxics must be carefully evaluated, since air toxics may cause harmful effects. Because of their known expected harmful effects, regulations adopted by the federal and state governments and limited purpose districts restrict the levels of air toxics that may be emitted from stationary sources (refer to Chapter 3 for background information).

Concern about toxics introduces a new dimension into the environmental planning process. Planners must now be aware of air toxics and what is required to prevent their release. Historically, environmental planning for air quality has focused on criteria pollutants, about which a great deal is known and on which information can be built into the planning process. "Safe" limits are established for criteria pollutants (ambient air quality standards), and thresholds for significant levels of emissions can be established relative to the air quality standards threshold levels. Release of criteria pollutants at levels exceeding the standards can cause reversible effects, such as eye irritation and coughing, as well as irreversible health effects including deterioration of lung function. When emissions are kept at or below the accepted threshold levels, no adverse health effects are expected to occur.

There are different types of toxics analysis depending on the type of toxic air pollutant and conditions of release (i.e., routine and accidental releases). Table 10-1 provides an overview of the compounds that should be analyzed depending on whether there is a routine or accidental release.

The state is required to compile and maintain a list of substances recognized by the state ARB as presenting a chronic or acute threat to health when present in the ambient air, including, but not limited to, any neurotoxins, or chronic respiratory toxins. Table 10-2 provides a list of current state and federal designated toxic contaminants (AB 1807 and federal NESHAPs) that should be analyzed for chronic health hazards. Table 10-3 lists District-recommended air dispersion models for risk assessment use. Table 10-4 provides a list of acutely hazardous materials that should be analyzed where there is a risk of accidental release. Table 10-5 provides a list of air contaminants that should be analyzed for acute health hazards during routine short-term releases.

As California is part of a belt of earthquakes and volcanic activity that circles the Pacific, there is concern in the Basin regarding the siting of facilities that use acutely hazardous materials and their proximity to active earthquake faults. The San Andreas fault, which extends almost the entire length of the state, is an area of high seismic activity.

The U.S. Geological Survey (USGS) evaluates California earthquake probabilities. Its evaluations are based on a probability model that assumes increased probability with elapsed time since the previous major earthquake on a fault system. A report by FEMA (Federal Emergency Management Agency, 1980) stated that a major earthquake in Southern California comparable to the great earthquake of 1857 (L.A., 7.9 Richter) has a probability of occurrence greater than 50% in the next 30 years. The Working Group of the USGS found that the earthquake hazard on the South San Andreas fault is at least as high as that reported by FEMA. Planners should consult the Alquist/Priola maps to determine if a project proposes to locate near an earthquake zone.

10.1 Roles of the District and Local Governments

Both the District and local governments issue permits to sources that could emit toxic air or acutely hazardous contaminants. The District regulates air toxics and acutely hazardous materials by issuing operating permits which limit the amount of emissions. Local governments control the impact of air toxics on sensitive receptors through land use decisions. The District has adopted Rule 1401 which specifies limits for maximum individual cancer cases from new or modified stationary sources which emit carcinogenic air toxics. Local governments grant discretionary permits for land uses emitting air toxics and issue building permits for the construction of such facilities. In some cases, the local government permit is for equipment that is directly related to a land use, such as a permit for a gas station. Other times the equipment is an accessory to the primary land use, as would be the case with the extensive consumption of gasoline fuels by internal combustion engines at a special activity center.

The local government is the lead agency with respect to the land use decision and any discretionary permits that are required. The District is the lead agency for the District permit to construct and operate. In both cases, the local governments and the District are the respective responsible agencies. The lead agency must consult with responsible agencies. Refer to the front matter of this Handbook to identify the appropriate District number to contact regarding environmental documentation.

10.2 Local Government Land Use Permits (for Stationary Sources Emitting Toxic Emissions)

Most likely, planners will only see those projects that fall into one of two categories: (1) those that involve a use new to the local government, or (2) those for an expanding use that is subject to a discretionary permit. The local government's involvement for most existing uses, is often limited to issuing business licenses, and building permits for minor alterations and equipment. When evaluating permits for new uses, planners have the opportunity to focus on the land use implications of the proposed project. In considering air toxics, planners may use Table 5-1 which identifies land uses and equipment commonly associated with significant toxic emissions, to determine when public health risk assessment should be performed. Refer to Appendix 3 to obtain a full listing of toxic air contaminants under District Rule 1401, ARB (AB 1807), and EPA (NESHAPs).

Planners can use the information in Table 5-1 to identify projects prior to consulting with District staff and prior to the completion of the Initial Study and the preparation of the draft EIR. If the planner determines that the project could have carcinogenic air toxics emissions, based on the District's information, the EIR should thoroughly analyze the air toxics emissions and include a discussion of land use compatibility issues.

In reviewing the EIR, local governments should consider the potential for carcinogenic toxic emissions and threat of release of acutely hazardous materials due to earthquakes from a land use perspective. Local governments should focus the analysis primarily on land use siting issues. As with toxics, the District adopts rules to regulate emissions from these sources. In granting a land use permit that involves carcinogenic toxic emissions or acutely hazardous materials, local government decision makers should ask the following:

- o What is the health risk to the population surrounding the facility?
- o If a discretionary permit is granted to a significant source of toxic emissions, how will this affect land use in the future?
- o What are the health risks associated with siting a sensitive receptor within a quarter mile of a source of toxic emissions?
- o What is the risk of upset from siting a facility using acutely hazardous materials near an earthquake zone? (i.e., Alquist/Priola zone).

The EIR should provide technical information that will assist local governments in addressing these issues. The District staff is available to review any air toxic analysis. The EIR does not need to address District permitting requirements for stationary sources, since the District is responsible for ensuring that emissions from both small and large sources are kept at acceptable levels. The District permitting process does not address land use compatibility or siting issues, which are the responsibility of local governments.

Land use compatibility issues need only be addressed for: (1) projects that emit toxic air contaminants as identified in District Rule 1401, AB 1807, and NESHAPs (2) the siting of sensitive receptors that could be impacted by existing sources of toxic emissions, and (3) projects that have a risk of releasing (either routinely or accidentally) acutely hazardous materials. Refer to Table 5-1 for an example of land uses that could meet this criteria. In addition, if an existing source emitting toxic air contaminants has not obtained a Rule 1401 permit and if a sensitive receptor is to be located within a quarter mile of the existing source, the issue of land use compatibility should be considered.

10.3 District Permits

The District regulates levels of air toxics through a permitting process that covers both construction and operation. Both new and existing industries routinely use materials classified as air toxics. For both new and modified sources, the District has adopted Rule 1401, with which the project proponent must comply before the project can be constructed and put into operation. A permit, when issued, will allow the facility to operate and will specify the conditions, if any, that might limit its operation. The District permit is granted on the basis of an independent environmental analysis conducted according to CEQA Guidelines.

The District's CEQA Guidelines for permit processing consider the following types of projects significant:

- o Any project involving the emission or threatened emission of a carcinogenic or toxic air contaminant identified in District Rule 1401 that exceeds the maximum individual cancer risk of one in one million or 10 in one million if the project is constructed with best available control technology for toxics (T-BACT) using the procedures in District Rule 1401
- o Any project that could accidentally release an acutely hazardous material (Table 10-4) or routinely release a toxic air contaminant posing an acute health hazard (Table 10-5)
- o Any project that could emit an air contaminant that is not currently regulated by District rule, but that is on the federal or state air toxics list (see Appendix 3 and Table 10-2)

~~Under CEQA, the District is the lead agency for District permits involving projects meeting these criteria. The District will prepare a Negative Declaration when it is determined that the project does not have a significant adverse impact on the environment pursuant to Article 6 of the District CEQA Guidelines. The District will prepare a Mitigated Negative Declaration (MND) when it is determined that the project may have significant adverse impacts on the environment, but that the permit applicant can modify the project so as to eliminate all identified significant impacts or reduce them to a level of insignificance. The District will prepare an EIR when it is determined through substantial evidence that the project might produce significant adverse environmental impacts pursuant to Articles 7 and 9 of the District CEQA Guidelines.~~

The local government within whose jurisdiction the proposed project is located will be ^{consulted as an interested} ~~responsible~~ agency. When the District prepares an EIR for its permit, the District will circulate both the Notice of Preparation and draft EIR to the appropriate local government. The District ~~provides~~ ^{will} the local government, as ~~responsible~~ ^{responsible} agency, the opportunity to review and comment on the EIR, or other CEQA document.

If the local government within whose jurisdiction the proposed project is located has no discretionary authority, the District may be considered the lead agency on a project that meets the above criteria. In such a case the District will prepare the CEQA document.

10/17/04

10.4 Assessing Toxics/Acutely Hazardous Materials

Whenever a proposed project will likely entail the use of chemical compounds that: have been identified in District Rule 1401; have been placed on the ARB air toxics list pursuant to AB 1807 or EPA's National Emissions Standards for Hazardous Air Pollutants (NESHAPs) (Table 10-2) and air toxic air contaminants of concern for acute exposure (Table 10-5); or will entail a facility using an acutely hazardous material (Table 10-4), the project proponent should anticipate that some level of risk assessment will be required. In addition, if a facility is using acutely hazardous materials near an earthquake zone or sensitive receptor, a risk assessment should also be performed. The quantities involved for some projects, and the actual release, may result in insignificant levels of risk. In such cases, a very simple "worst case" screening assessment may make that case clear and allow permitting to move ahead. In others, the situation may be uncertain or potentially result in unacceptable risks. At that point, a refined risk assessment may be required. Additional information is available on how to prepare a risk assessment by referring to the SCAQMD document, "Procedures for Preparing Risk Assessments to Comply with the Air Toxics Rules of the SCAQMD," at the Public Information Center.

As required in the EIR, assessing toxics and acutely hazardous materials can be complex and time consuming. It is important at the start to distinguish between those cases where some lesser level of analysis may be sufficient and where nothing less than the most thorough assessment will serve the public interest. Even with limited information, a screening procedure may define a "worst-case" estimate of risk. Simple screening procedures may also give the basis for a more detailed assessment. Contact the District local governments/CEQA unit if the Planner is unsure about the level of analysis necessary.

A useful first step in the screening procedure is to find out whether or not a risk assessment for the facility has been required and performed under AB 2588. A facility will only have an AB 2588 assessment if it is an existing facility. Such an assessment will have brought together most though not necessarily all of the information required for analysis. Information in all cases will include an estimate of the quantities of materials that might be released based on: (1) data from emissions testing, (2) a mass balance calculation, or (3) emission factors for types of processes.

When the District's screening procedure as detailed in the District's procedures for preparing risk assessments is used, some simplified assumptions are made: flat terrain in an urban area, uniform emissions throughout the operation schedule, a source close to the property line. If the project is at substantial variance from these conditions, the simple screening procedure may not be accurate. Exposures to an urban population in a residential area are assumed to extend over the standard reference lifetime of 70 years. Exposures in commercial or industrial areas, presumably limited to working hours, can be adjusted downward.

The District's air toxics compliance guide, listed in the references at the end of this chapter, will help an applicant or consultant work through the required screening procedure, leading to an estimated maximum cancer risk for each carcinogenic air contaminant. Although the District does not currently regulate non-carcinogens, the risks associated with exposure to these air toxics may be assessed following the guidelines established by the California Air Pollution Control Officers Association (CAPCOA) for use in preparing risk assessments for the AB 2588 program.

In those cases where substantial potential risk may be involved, or where the simpler screening approach leads to a determination of significance, a more extensive refined risk assessment will be necessary. At that point, more detailed information will be required, such as:

- Stack Height
- Stack Diameter
- Exhaust Gas Exit Velocity
- Exhaust Gas Exit Temperature
- Exhaust Gas Volume
- Dimensions of Building Structures Near the Source
- Dimensions of Area Sources
- Land Use and Geographical Features Surrounding the Facility

It can be particularly important to have information available on land uses in the surrounding area, and information such as: population distribution in general and population distribution by time of day; locations of potentially sensitive receptors; location and availability of emergency services and their relative sophistication; and similar data.

EIRs for land uses that have the potential to emit toxics must address and identify potential risks associated with siting, including identifying risks to surrounding land uses. The potential for risk and impact on future land uses as well as impact on projects already in place should be considered. The EIR should assist local government in making the land use decision that specifically will:

- (1) Identify the risk to the population from the facility
- (2) Evaluate future land use implications
- (3) Incorporate mitigation measures when appropriate

Sometimes facilities that emit toxics can apply mitigation measures such as: adjusting the location of equipment emitting toxics so that it is not upwind of sensitive receptors, and designating surrounding properties for industrial uses.

The CEQA air toxic analysis is not a substitute for complying with District toxic regulations. The project will still need to undergo an in-depth risk assessment prior to issuance of a District permit. Appendix 10 summarizes the procedures to be followed in complying with Rule 1401 and is a useful guide for preparation of a toxic emission analysis for the EIR.

10.5 Siting of Sensitive Receptors

The local government will need to analyze the land use implications when siting a toxic source within its jurisdiction, particularly when sensitive receptors will be involved (refer to Chapter 5 for discussion on sensitive receptors). Such an analysis is not a substitute for the subsequent District permitting action over the source of the toxic emissions which requires a health risk assessment to be performed pursuant to Rule 1401. Local government analysis of the land use implications should only be based on an accurate health risk assessment, and the District staff is available to review such assessments.

Screening procedures identified in Chapter 5 will determine if further toxic emissions analysis is necessary when siting a sensitive receptor in proximity to a project that releases air toxics. If the initial screening indicates that the toxic emissions could exceed significance thresholds, the planners should require a thorough analysis as part of the CEQA documentation.

Specifically, planners can require that a public health risk assessment be performed and reviewed by the District. This type of assessment would involve summing risks from facilities within a quarter mile radius to the proposed sensitive receptor. Local governments then need to determine if the risk is acceptable in their community. The District uses the following standards for protecting existing receptors from new sources of toxic emissions: exceedance of the maximum individual cancer risk of 1 in 1 million, or 10 in 1 million if the project has best available control technology for toxics (T-BACT).

The health risk assessment for sensitive receptors should be performed using the same methodologies and inputs as those performed for a direct source of toxic emissions on the AB 1807 and NESHAPs lists. Each facility that does not have a Rule 1401 permit should be included in the analysis to the extent feasible. The toxic emissions should be quantified for each source using the District's procedures for Rule 1401 and an individual cancer risk identified for the sensitive receptor in Chapter 5. Risk assessments that have been previously performed pursuant to AB 2588 and Rule 1401 can be used in lieu of a new assessment. The analysis should include AB 2588 data, District Rule 1401 data, AB 1807, EPA NESHAPs toxic compounds and toxic air contaminants of concern for acute exposure. The project proponent should analyze publicly available information on health risks posed by nearby sources of toxic emissions. The District serves as a clearinghouse for publicly available information on toxic emissions and associated public health risks. This information is compiled from documentation

required of toxic emitters by Rule 1401 and the AB 2588 Air Toxics Hot Spot Program. The applicant should also make a reasonable attempt to obtain toxic information from any sources that could potentially affect the project site which is not covered by Rule 1401 and AB 2588. Pursuant to CEQA Guidelines Section 15151, if the information is not available, the sufficiency of the air toxics analysis should be reviewed in light of what is reasonably feasible.

The EIR, at a minimum, should:

- o Identify all potential land uses emitting toxics within a quarter mile surrounding the proposed project
- o List types of pollutants most commonly associated with these uses
- o Check the AB 2588 database and identify any risk levels that have been reported
- o Perform a health risk assessment for those pollutants listed on the AB 1807 and EPA NESHAPs lists (Table 10-2), toxic air contaminants of concern for acute exposure (Table 10-5), and data from District Rule 1401 and the AB 2588 program

10.6 Air Quality Modeling Tools

Table 10-3 lists the air dispersion models recommended by the District for use in performing risk assessments. This list is consistent with the CAPCOA-recommended models. The most recent version of these models should be used. The CAPCOA *Air Toxics Hot Spot Program Risk Assessment Guidelines* should be consulted prior to performing any dispersion modeling.

References

Procedures for Preparing Risk Assessments to Comply with Air Toxics Rules of the South Coast Air Quality Management District. Available from the District's Public Information Center.

Air Toxics "Hot Spots" Information and Assessment Act of 1987. California Health and Safety Code Section 44300 *et seq.*

Air Toxics "Hot Spots" Program Risk Assessment Guidelines. California Air Pollution Control Officers Association (CAPCOA); updated yearly. Available from CAPCOA for fee, (916) 676-4323.

Air Toxics Assessment Manual. California Air Pollution Control Officers Association (CAPCOA); 1987.

Toxic Air Contaminants (Chapter 3.5). California Health and Safety Code Section 39650 *et seq.*

Guideline on Air Quality Models (Revised). U.S. Environmental Protection Agency; 1986. EPA-450/2-78-027R.

District Regulation 14. Rules and Regulations. Available from the District's Public Information Center.

California Air Resources Board prepares documents for each specific AB 1807 toxic air contaminant which is identified. These documents are available from ARB. Contact the ARB's Public Information Office at (916) 322-2990.

User guides for each particular air dispersion model are available and should be used with the appropriate model. These manuals are available from U.S. EPA.

Figure 10-1. Toxic Air Quality Analysis Flow Chart

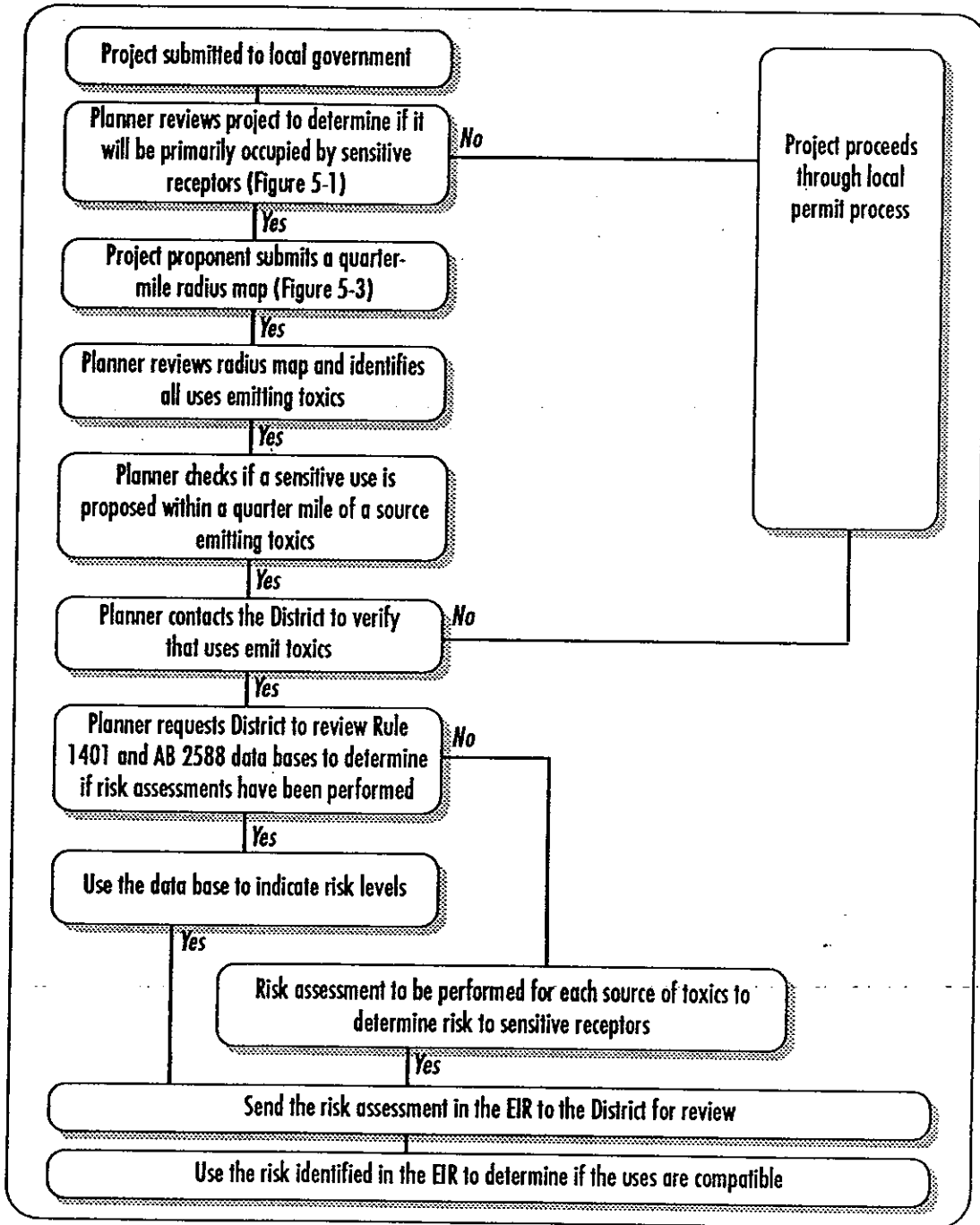


Table 10-1. Toxics Analysis Overview

Routine Releases of Toxic Air Contaminants	Accidental Releases
<ul style="list-style-type: none">• Carcinogenic compounds• Compounds of concern for non-cancer health effects from chronic exposure• Compounds of concern for acute exposure	<ul style="list-style-type: none">• Compounds of concern for acute exposure from accidental release

Table 10-2. Toxic Air Contaminants Identified Under AB 1807 and Federal NESHAPs

Toxic Emission	Representative Uses and Sources
Acetaldehyde	Combustion of fuel from mobile sources, agricultural burning, wildfires
Asbestos	Manufacturing of brakes, acoustic ceiling tiles, gaskets, brake shoe rebuilders and recyclers
Benzene	Constituent of gasoline; used in organic chemical manufacturing, pharmaceuticals, food processing
1,3-Butadiene	Incomplete combustion of petroleum-derived fuels, petroleum refining, certain fumigant production and styrene-butadiene copolymer production
Cadmium	Secondary smelters; cement manufacturing plants; cadmium electroplating facilities; oil or coal burning; sewage sludge incinerators
Carbon Tetrachloride	Use of pesticides; production of fluorocarbon, chlorinated paraffin wax, and carbon tetrachloride
Chlorinated Dioxins and Dibenzofurans	Manufacture of chemicals such as pesticides and wood preservatives; manufacture of PCBs, solid waste incinerators
Chloroform	Manufacture of fluorocarbon 22 refrigerants and fluoropolymers; manufacture of pharmaceuticals, laboratory use; water chlorination (POTWs); air stripping towers, chemical manufacturing cooling towers; pulp bleaching in paper manufacturing
Chromium VI	Chrome plating, combustion of oil, coal, municipal waste and sewage sludge, used in production of chromium chemicals and paints
Ethylene Dibromide	Pesticide and solvent use; chemical feed stock for dye; manufacturing of pharmaceuticals
Ethylene Dichloride	Manufacture of vinyl chloride, solvents, paints, varnish, and finish removers; metal degreasing, soaps and scouring compound

(Continued on next page)

Table 10-2. Toxic Air Contaminants Identified Under AB 1807 and Federal NESHAPs (continued)

Toxic Emission	Representative Uses and Sources
Ethylene Oxide	Sterilization; fumigation; surfactant manufacturing; ethylene oxide distribution
Formaldehyde	Manufacture of resins, rubber and paper products, dyes, plastics and cosmetics; chemical sterilant, leather tanner, plating, preservative, embalming fluid and fumigant; fuel combustion
Inorganic Arsenic	Pesticide use; herbicide use, arsenic mining; cement, glass, and chemical manufacturing; agricultural burning; waste incineration; secondary lead smelting
Methylene Chloride	Food processing; manufacturing of paint removers, aerosols, degreasers, polyurethane foam, electronics, chemical, and pharmaceuticals
Trichloroethylene	Polyvinylchloride production; adhesive, painting, and coating operation; refrigerant and heat exchange operations; solvent applications; land POTWs; ground aeration; air strippers
Nickel	Production of polyvinylchloride for plastic products, fabrication facilities; landfills; POTWs
Perchloroethylene	Dry cleaning; degreasing, paint, coatings, adhesives, aerosols and chemical production; printing operations
Vinyl Chloride	Asbestos mining and milling; secondary smelting; solid waste and sewage sludge incineration; electroplating and electrical equipment manufacturing; cement manufacturing

Table 10-3. District-Recommended Models for Risk Assessments

Application	Source Type	Land Use	Model
Flat	Point, Area ²	Rural, Urban	ISC2
Complex	Point	Rural	COMPLEXI, RTDM
		Urban	COMPLEXI, SHORTZ
	Area ²	Rural, Urban	ISC2

Notes: 1. The District assumes urban conditions for all projects in the Basin. The project proponent should provide justification if rural conditions are assumed.
 2. Ground level or near ground level, non-buoyant emission.

Table 10-4. Acutely Hazardous Materials

Acetone cyanohydrin	Trans-1,4-dichlorobutene	Nickel carbonyl
Acrolein	Dichloroethyl ether	Nitric acid
Acrylonitrile	Dimethyldichlorosilane	Nitric oxide
Acrylyl chloride	Dimethylhydrazine	Nitrobenzene
Allyl alcohol	Dimethyl phosphorochloridothioate	Parathion
Allylamine	Epichlorohydrin	Peracetic acid
Ammonia (anhydrous)	Ethylenediamine	Perchloromethylmercaptan
Ammonia (aqueous solution, conc. $\geq 20\%$)	Ethyleneimine	Phenol (liquid)
Aniline	Ethylene oxide	Phosgene
Antimony pentafluoride	Fluorine	Phosphine
Arsenous trichloride	Formaldehyde	Phosphorous oxychloride
Arsine	Formaldehyde cyanohydrin	Phosphorous trichloride
Benzal chloride	Furan	Piperidine
Benzenamine, 3-(trifluoromethyl)-	Hydrazine	Propionitrile
Benzotrichloride	Hydrochloric acid (solution, conc. $\geq 20\%$)	Propyl chloroformate
Benzyl chloride	Hydrocyanic acid	Propyleneimine
Benzyl cyanide	Hydrogen chloride (anhydrous)	Propylene oxide
Benzyl trichloride	Hydrogen fluoride	Pyridine, 2-methyl-5-vinyl-
Boron trifluoride	Hydrogen peroxide (conc. $\geq 52\%$)	Sulfur dioxide
Boron trifluoride compound with methyl ether (1:1)	Hydrogen selenide	Sulfuric acid
Bromine	Hydrogen sulfide	Sulfur tetrafluoride
Carbon disulfide	Iron, pentacarbonyl-	Sulfur trioxide
Chlorine	Isobutyronitrile	Tetramethyllead
Chlorine dioxide	Isopropyl chloroformate	Tetranitromethane
Chloroethanol	Lactonitrile	Thiophenol
Chloroform	Methacrylonitrile	Titanium tetrachloride
Chloromethyl ether	Methyl bromide	Toluene 2,4-diisocyanate
Chloromethyl methyl ether	Methylene chloride	Toluene 2,6-diisocyanate
Crotonaldehyde	Methylene chloroformate	Toluene diisocyanate (unspecified isomer)
Crotonaldehyde (E)-	Methyl hydrazine	Trichloroethylsilane
Cyanogen chloride	Methyl isocyanate	Trimethylchlorosilane
Cyclohexylamine	Methyl mercaptan	Vinyl acetate monomer
Diborane	Methyl thiocyanate	Vinyl chloride
	Methyltrichlorosilane	

Acutely hazardous materials are substances which pose a risk of causing death, injury, or serious adverse effects to human health or the environment from short-term or accidental release. Listed in the table are substances commonly in use within the Basin which may pose an acute health hazard during a short-term or accidental release.

Table 10-5. Toxic Air Contaminants of Concern for Acute Exposure

<p>Ammonia Acrolein Arsine Benzyl Chloride Carbon Tetrachloride Chlorine Copper and Compounds 1,4-Dioxane Ethylene Glycol Methyl Ether Ethylene Glycol Ethyl Ether Ethylene Glycol Monoethyl Ether Acetate Ethylene Glycol Monobutyl Ether Formaldehyde Hydrochloric Acid Hydrogen Cyanide Hydrogen Fluoride</p>	<p>Hydrogen Sulfide Lead Maleic Anhydride Inorganic Mercury Methyl Chloroform Methylene Chloride Nickel Compounds Nitrogen Dioxide Ozone Perchloroethylene (Tetrachloroethylene) Phosgene Propylene Oxide Selenium Sodium Hydroxide Sulfates Sulfur Dioxide Xylenes</p>
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Listed in this table are substances commonly in use within the Basin which may pose an acute health hazard during routine short-term release.