SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final
Localized Significance Threshold Methodology

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PREFACE

In accordance with Governing Board direction, SCAQMD staff has developed this methodology to assist lead agencies in analyzing localized air quality impacts from proposed project. This methodology is guidance and is **VOLUNTARY**. Localized significance threshold (LST) look-up tables for one, two and five acre proposed projects emitting carbon monoxide (CO), oxides of nitrogen (NOx), particulate matter less than 2.5 microns in aerodynamic diameter (PM2.5) or particulate matter less than 10 microns in aerodynamic diameter (PM10) were prepared for easy reference according to source receptor area. SCAQMD recommends that lead agencies perform project-specific modeling for larger projects in determining localized air quality impacts.

The LST methodology was developed to be used as a tool to assist lead agencies to analyze localized impacts associated with project-specific level proposed projects. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. Further, LSTs are applicable to projects at the project-specific level and are not applicable regional projects such as General Plans. The LST methodology and associated mass rate look-up tables will be included as an update to the SCAQMD CEQA Air Quality Handbook upon Governing Board's approval.

Subsequent to the adoption of the Final Significance Threshold Methodology, SCAQMD Governing Board adopted significant thresholds for PM2.5; the California Air Resources Board (ARB) revised the 1-hour nitrogen dioxide (NO2) Ambient Air Quality Standard (AAQS) from 0.25 ppm to 0.18 ppm, and established a new annual average standard of 0.03 ppm. The Final Significance Threshold Methodology was revised in July of 2008 to include the PM2.5 significant threshold methodology and update the LST Mass Rate Look-up Tables for the 1-hour NO2 AAQS.

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LIST OF ABBREVIATIONS AND ACRONYMS

Abbreviation/Acronym	Description
AAQS	Ambient Air Quality Standard
AQMD	South Coast Air Quality Management district
Avg	Average
Basin	South Coast Air Basin
C_{AAQS}	Ambient Air Quality Standard Concentration
C_{AIL}	Acceptable Impact Level Concentration
C_b	Background Concentration
C_u	Peak Predicted Concentration Estimated by ISC3
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
DRI	Desert Research Institute
DRYDPLT	Dry Plume Depletion
EJ	Environmental Justice
EPA	United States Environmental Protection Agency
FY	Financial Year
Handbook	*SCAQMD Air Quality CEQA Handbook*
hr	Hour
ID	Identification
ISC3	Industrial Source Complex, version 3
lb	Pound
m	Meter
MET	Meteorological Correction Factors
mg	Milligram
NO	Nitric Oxide
NOCALM	No Calm Wind Processing
NO2	Nitrogen Dioxide
NOx	Oxides of Nitrogen
OEHHA	Office of Environmental Health Hazard Assessment
PM	Particulate Matter
PM10	Particulate of Less Than 10 Microns in Aerodynamic Diameter
pphm	Parts per Hundred Million
ppm	Parts per Million
SIP	State Implementation Plan
SRA	Source Receptor Area
U	Unit Emission Rate
URBAN	Urban Dispersion Parameters
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound
µg	Microgram

CHAPTER 1
INTRODUCTION

In 1993, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted the *CEQA Air Quality Handbook* (*Handbook*). This Handbook contains guidance for other public agencies when preparing an air quality analysis for California Environmental Quality Act (CEQA) or National Environmental Policy Act (NEPA) analyses. In addition to providing guidance for analyzing air quality impacts, the Handbook also contains indicators of significance recommended for use by other public agencies. The most widely used of the significance thresholds in the Handbook are the mass daily significance thresholds for construction and operation, which indicate that a project has significant adverse regional effects on air quality.

More recently as part of the SCAQMD's environmental justice program, attention has focused on localized effects of air quality. In accordance with Governing Board direction, staff has developed localized significance threshold (LST) methodology and mass rate look-up tables by source receptor area (SRA) that can be used by public agencies to determine whether or not a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area.

Use of LSTs by local government is **VOLUNTARY**. The staff proposal recommends using the LST mass rate look-up tables only for projects that are less than or equal to five acres. It should be noted that lead agencies are not precluded from performing project-specific modeling if they prefer more precise results. It is recommended that lead agencies perform project-specific air quality modeling for larger projects. LSTs are applicable at the project-specific level and generally are not applicable to regional projects such as local General Plans unless specific projects are identified in the General Plans.

The use of LSTs is VOLUNTARY, to be implemented at the discretion of local agencies. LSTs would only apply to projects that trigger a CEQA review. Therefore, projects that are statutorily or categorically exempt under CEQA would not be subject to LST analyses. Exemptions include infill projects that meet the H&S Code provisions or projects identified by lead agencies as ministerial. The methodology and screening tables are included as an appendix to this Handbook.

Staff has developed implementation tools to assist in evaluation of projects. Guidance information, such as typical scenarios and sample calculations are included as an appendix to this Handbook. The sample calculations and scenarios include estimations of both regional and localized impacts for ease of use. If the lead agencies decide to follow the LST methodology and determine that the proposed projects might exceed LSTs, please consult Chapter 11 of the CEQA Handbook (1993) for applicable mitigation measures. SCAQMD staff is available to assist lead agencies or project proponents in addressing implementation issues.

The LST mass rate look-up tables provided in Appendix C allow a user to readily determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts. If the calculated emissions for the proposed construction or operational activities are below the LST emission levels found on the LST mass rate look-up tables and no potentially significant impacts are found to be associated with other environmental issues, then the proposed construction or operation activity is not significant for air quality. Proposed projects whose calculated emission budgets for the proposed construction or operational activities are above the LST emission levels found in the LST mass rate look-up tables should not assume that the project would necessarily generate adverse impacts. Detailed air dispersion modeling may demonstrate that pollutant concentrations are below localized significant levels. The lead agency may choose to describe project emissions above those presented in the LST mass rate look-up tables as significant or perform detailed air dispersion modeling or perform localized air quality impact analysis according to their own significance criteria.

The LST mass rate look-up tables are applicable to the following pollutants only: oxides of nitrogen (NO_X), carbon monoxide (CO), particulate matter less than 2.5 microns in aerodynamic diameter (PM2.5) and particulate matter less than 10 microns in aerodynamic diameter (PM10). LSTs are derived based on the location of the activity (i.e., the source/receptor area); the emission rates of NO_X, CO, PM2.5 and PM10; and the distance to the nearest exposed individual. The location of the activity and the distance to the nearest exposed individual can be determined by maps, aerial and site photos, or site visits. The NOx, CO, PM2.5 and PM10 emission factors and/or rates are the same emission factors/rates identified in the Handbook, AP-42, EMFAC, Offroad, etc.

This document explains the methodology, specifically pollutant dispersion modeling used to develop the LST mass rate look-up tables and how one uses the procedures to determine the significance or insignificance of project activities for air quality. This document will become part of the revised Handbook.

LEGAL AUTHORITY

CEQA Guidelines §15022(a) states that a public agency shall adopt objectives, criteria, and specific procedures consistent with CEQA and these [State] Guidelines for administering its responsibilities under CEQA. CEQA Guidelines §15022(d) states further, "In adopting procedures to implement CEQA, a public agency may adopt the State CEQA Guidelines through incorporation by reference. The agency may then adopt only those specific procedures or provisions described in subsection [15022] (a) which are necessary to tailor the general provisions of the guidelines to the specific operations of the agency." At the December 11, 1998 Public Hearing the SCAQMD's Governing Board formally incorporated by reference the State CEQA Guidelines as the implementing guidelines for the SCAQMD's CEQA program. Adopting LSTs would be consistent with CEQA Guidelines §15022 provision to tailor a public agency's implementing guidelines by adopting criteria relative to the specific operations of the SCAQMD.

Specifically with regard to thresholds of significance, CEQA Guidelines §15064.7(a) states, "Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects." Subsection (b) of the same section states further, "Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule or regulation, and developed through a public review process and be supported by substantial evidence." The methodology for developing LSTs and the resulting LST mass rate look-up tables developed by the SCAQMD have undergone a public review process as part of stakeholder working group meetings that are open to the public. This methodology document provides the substantial evidence relative to the methodology for developing LSTs. After completion of the public process, the LST methodologies will be heard by the SCAQMD's Governing Board at a public meeting, where they will be considered for adoption by resolution, consistent with CEQA Guidelines §15064.7(b). This methodology and associated LSTs are recommendations only and not mandatory requirements. The methodology and LSTs may be used at the discretion of the local lead agency.

BACKGROUND

At the October 10, 1997 Board Meeting, the SCAQMD Governing Board adopted the Guiding Principles and Workplan to Implement Environmental Justice Initiatives. Environmental Justice (EJ) Initiative #4 – CEQA Commenting, directed the SCAQMD to reconstruct its CEQA commenting function, called intergovernmental review. As specified in the Workplan, EJ Initiative #4 included updating the CEQA Handbook by creating and working with a stakeholders' review group.

Consistent with EJ Initiative #4 staff began the formal Handbook revision process by creating a Handbook revision working group of stakeholders comprised of local government planners; representatives of local councils of government; environmental groups; the building and construction industries; and other interested individuals. In 1998, the SCAQMD started a series of Handbook revision working group meetings. One of the issues identified by the stakeholders was a request to address localized air quality impacts. With respect to criteria pollutants, the existing Handbook only discussed localized impacts as part of focused CO "hotspots" analyses prepared for mobile sources.

Assessing localized air quality impacts requires using complex dispersion models. Therefore, to address the issue of localized significance, yet be sensitive to the fact that other public agencies might not have the expertise or adequate financial resources to perform complex dispersion modeling, in addition to the methodology itself, SCAQMD staff began developing a proposal to establish localized significance thresholds in a form similar to the regional significance thresholds, that is, based on the amount of pounds of emission per day generated by a proposed project that would cause or contribute to localized air quality impacts.

After developing the methodology for deriving LSTs, staff presented the concept, methodologies, and a retrospective study on the use of LSTs at Governing Board Mobile Source Committee meetings. In the fourth quarter of 2001, staff presented the LST proposal to the Mobile Source Committee. Because of concerns and issues raised by committee members, the Mobile Source Committee recommended that staff seek approval from the Governing Board before proceeding with further development of the LSTs. On February 1, 2002, the Governing Board directed staff to continue developing LSTs and report back to the Board for consideration and possible incorporation into a revised Handbook.

On September 13, 2002, the Governing Board approved the implementation of the Environmental Justice Program Enhancements for FY 2002-03. In connection with approving the Environmental Justice Program Enhancement for FY 2002-03, the Board directed staff to implement 23 enhancements to the original Environmental Justice Program divided into three categories. Category I: Further-Reduced Health Risk, Enhancement I-4 included a proposal to "continue to develop localized significance thresholds for subregions of the air district, as another indicator of CEQA significance." Enhancement I-4 also directed staff to continue developing localized significance thresholds through a stakeholder working group. Staff has since met with the stakeholder working group two times and, with input from the stakeholder working group, developed a proposal to implement Enhancement I-4.

BASIC APPROACH

An air quality analysis typically separates a project's emissions into construction and operational activity emissions because these two activities are typically sequential. Relative to the staff proposal, the emissions of concern from construction activities are NO_x, CO and PM2.5 combustion emissions from construction equipment[1] and fugitive PM 2.5 and PM10 dust from construction site preparation activities. The primary emissions from operational activities include, but are not limited to NOx and CO combustion emissions from stationary sources and/or on-site mobile equipment. Some operational activities may also include fugitive PM2.5 and PM10 dust generating activities such as aggregate operations or earthmoving activities at landfills. Off-site mobile emissions from the project should NOT be included in the emissions compared to the LSTs.

LSTs are derived using one of three methodologies depending upon the attainment status of the pollutant. For attainment type pollutants, nitrogen dioxide (NO_2) and CO[2], the

[1] Construction equipment also emits PM10, but for simplicity these emissions should be combined with the fugitive PM10 dust when using the LST procedures provided below.

[2] Although the district was not designated as in attainment with the CO ambient air quality standards when the LSTs were developed, it was treated as an attainment pollutant since CO concentrations hadnot exceeded any CO ambient air quality standards for the two years prior to the adoption of the LSTs. ~~Therefore, for developing LSTs, the attainment pollutant approach is applicable.~~ The district was redesignated as in attainment for CO in 2002. The district was designated in NO_2 attainment by the State in 2003, and NO_2 concentration had been below the State AAQS for three years prior. The district has been designated as in NO_2 attainment for the federal standard since 1995. In 2007, the State AAQS standards

mass rate LSTs are derived using an air quality dispersion model to back-calculate the emissions per day that would cause or contribute to a violation of any short-term AAQS for a particular SRA. The most stringent of the federal and state standards for NO_2 is the 1-hour state standard of 18 parts per hundred million (pphm); and for CO it is the 1-hour and 8-hour state standards of nine parts per million (ppm) and 20 ppm, respectively.

LSTs are developed based upon the size or total area of the emissions source, the ambient air quality[3] in each source receptor area (SRA) in which the emission source is located, and the distance to the sensitive receptor. LSTs for NO_2 and CO are derived by adding the incremental emission impacts from the project activity to the peak background NO_2 and CO concentrations and comparing the total concentration to the most stringent ambient air quality standards. Background criteria pollutant concentrations are represented by the highest measured pollutant concentration in the last three years at the air quality monitoring station nearest to the proposed project site.

Construction PM 2.5 and PM10 LSTs are developed using a dispersion model to back-calculate the emissions necessary to exceed a concentration equivalent to 50 micrograms per cubic meter ($\mu g/m^3$) averaged over five hours, which is the control requirement in Rule 403. The equivalent concentration for developing PM 2.5 and PM10 LSTs is 10.4 $\mu g/m^3$, which is a 24-hour average.

Operational PM 2.5 and PM10 LSTs are derived using an air quality dispersion model to back-calculate the emissions necessary to make an existing violation in the specific SRA worse, using the allowable change in concentration thresholds in Table A-2 in Rule 1303. For PM 2.5 and PM10 the allowable change in concentration thresholds is 2.5 $\mu g/m^3$. These levels represent measurable impacts taking into account modeling sensitivity.

The staff proposal recommends using the LST mass rate look-up tables only for projects that are less than or equal to five acres. It should be noted that lead agencies are not precluded from performing project-specific modeling if they prefer more precise results. It is recommended that lead agencies perform project-specific air quality modeling for larger projects. Lead agencies have the discretion to identify appropriate thresholds and analysis methodologies.

If mitigation measures are needed, please refer to Chapter 11 of the *Handbook*. Lead agencies may use mitigation measures beyond those identified in the *Handbook* and District staff is available for technical consultation.

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were lowered to 0.18 ppm for the NO_2 1-hour standard and 0.030 ppm was established as the NO_2 annual average standard. Since the standards have become affective, the NO_2 concentrations have been below the new 1-hour standard. However, there was a single location (SRA 10 – Pomona/Walnut Valley) that exceeded the NO_2 annual average standard in 2007 (0.0318 ppm). The LSTs were developed based on short-term standards (less than 24 hour concentration standards). Since all NO_2 concentrations in the district are less than the new one-hour standard, NOx is still treated as an attainment pollutant.

[3] Ambient air quality information is based on the pollutant concentrations measured at the SCAQMD's monitoring stations in or near the specified SRA.

The concepts inherent in the above staff recommendations are generally consistent with the modeling requirement in SCAQMD Rule 1303(b)(1), which states that the Executive Officer shall deny a Permit to Construct for any new or modified source with an emission increase unless, "The applicant substantiates with modeling that the new facility or modification will not cause a violation, or make significantly worse an existing violation… of any AAQS at any receptor in the district." It should be noted that there are some modeling assumptions used to derive mass rate LSTs that are unique for this purpose and not intended for Regulation XIII permitting applications. Therefore, the modeling methodology described in this document should not be used to comply with Rule 1303 modeling requirements. The actual methodology used to derive the mass rate LSTs is described in more detail in Chapter 2.

CHAPTER 2
METHODOLOGY

This chapter describes the technical approach used to derive the mass rate LSTs. The models used to derive the mass rate LSTs are briefly described, including adjustments to the outputs, which attempt to incorporate more realistic parameters into the modeling results.

MODEL

Two distinct modeling approaches were used to develop the mass rate LSTs for the gaseous pollutants (i.e., NO_2 and CO) and particulate matter (i.e., PM10). A U.S. Environmental Protection Agency (EPA)-approved dispersion model was used for NO_2, CO, and PM 2.5. For PM10, a combination of a U.S. EPA-approved dispersion model and an empirical equation, developed by Desert Research Institute (DRI)[4] were used to describe concentration changes as a function of downwind distance.

NO_2, CO and PM2.5

Version 3 of the U.S. EPA approved air quality model called Industrial Source Complex (i.e., ISC3) was used to develop the mass rate LSTs discussed here for NO_2, CO, and PM2.5. The short-term version of the model was applied using hourly meteorological data from numerous sites in the district. Important model options employed include: urban dispersion parameters (i.e., URBAN) and no calm wind processing (i.e., NOCALM). All other model options assumed the model default values.

PM10

For PM10, the short-term version of ISC3 was used to estimate PM10 concentrations at 25 meters from the boundary of the construction area, 1,000 meters from the boundary of the construction area, and beyond. Since fugitive dust consists of a significant fraction of large particles greater than 10 microns, plume depletion due to dry removal mechanisms was assumed (i.e., DRYDPLT). The fugitive PM10 emissions are separated into the three particle sizes of less than one micron (μm), 1.0 to 2.5 μm, and 2.5 to 10 μm in aerodynamic diameter, which have the assumed weight fractions of 7.87, 12.92, and 79.22 percent, respectively. The particle density for all three size bins is 2.3 grams per cubic centimeter.

For downwind distances from the boundary of the construction area to 100 meters, the following equation was used to describe the change in PM10 concentration versus downwind distance:

$$C_x = 0.9403\, C_o\, e^{-0.0462\, x} \qquad \textbf{Eq. 1}$$

Where: C_x is the predicted PM10 concentration at x meters from the fence line;
C_o is the PM10 concentration at the fence line as estimated by ISC3;
e is the natural logarithm; and
x is the distance in meters from the fence line.

[4] Desert Research Institute, 1996.

Equation 1 was developed from the 1996 DRI study of fugitive dust control measures for unpaved roads. Concentrations are linearly interpolated between the two approaches for downwind distances from 100 to 500 meters.

SOURCE TREATMENT

Mass rate LSTs for construction and operational activities for one-, two-, and five-acre sites have been developed. Exhaust emissions from construction equipment are treated as a set of side-by-side elevated volume sources. These volume sources are illustrated in Figure 2-1. The number and dimensions of the volume sources for each analyzed acreage are shown in Table 2-1. The release height is assumed to be five meters. This represents the mid-range of the expected plume rise from frequently used construction equipment during daytime atmospheric conditions. All construction exhaust emissions are assumed to take place over the eight-hour period between 8 a.m. to 4 p.m. Mass rate LSTs may be used for operational sources with parameters similar to the construction parameters presented above.

Fugitive dust emissions are treated as a ground-based square area source with the dimension of the acreage analyzed. For example, the one-acre construction site is 63.6 meters on a side and the five-acre construction site is 142.2 meters on a side. An initial vertical dimension of one meter is assumed to represent the initial vertical spread of the emissions. Based on this assumption, the initial vertical dimension resulted in a vertical concentration profile that closely matched the vertical profile observed by DRI (1996), as shown in Figure 2-2. As with the construction equipment, all the fugitive dust emissions are assumed to be emitted over the eight-hour period, 8 a.m. to 4 p.m. Area sources are illustrated in Figure 2-1.

RECEPTOR GRID

A radial receptor grid is used to determine impacts. The grid is centered on the source and is built in ten degree increments at the following downwind distances from the hypothetical proposed project boundary: 25, 50, 100, 200, and 500 meters. Flat terrain is assumed, since emissions sources from construction activities are primarily ground-based. All receptors are placed within the breathing zone at two meters above ground level. Figure 2-1 illustrates the relationship between the source and receptors.

METEOROLOGY

For modeling purposes, the SCAQMD uses 1981 meteorological data (i.e., hourly winds, temperature, atmospheric stability, and mixing heights) from 35 sites in the district, as shown in Figure 2-3 and listed in Table 2-2. The 1981 meteorological data are used because this data set represents the most complete and comprehensive data set currently compiled. These data are available at the SCAQMD's web site (www.aqmd.gov/metdata) and is in a format that can be directly read by ISC3. Using this meteorological data set, LSTs are developed for each of the 37 source receptor areas (SRAs) within the SCAQMD's jurisdiction (see Figure 2-4). LSTs were not developed for SRA 14, because it is outside of the SCAQMD's jurisdiction. Site-specific meteorological data may also be used the concurrence from the District staff. A projects located close to the boundaries of another SRA may use the LSTs for that SRA if the monitored concentrations better represent the ambient air quality surrounding that project..

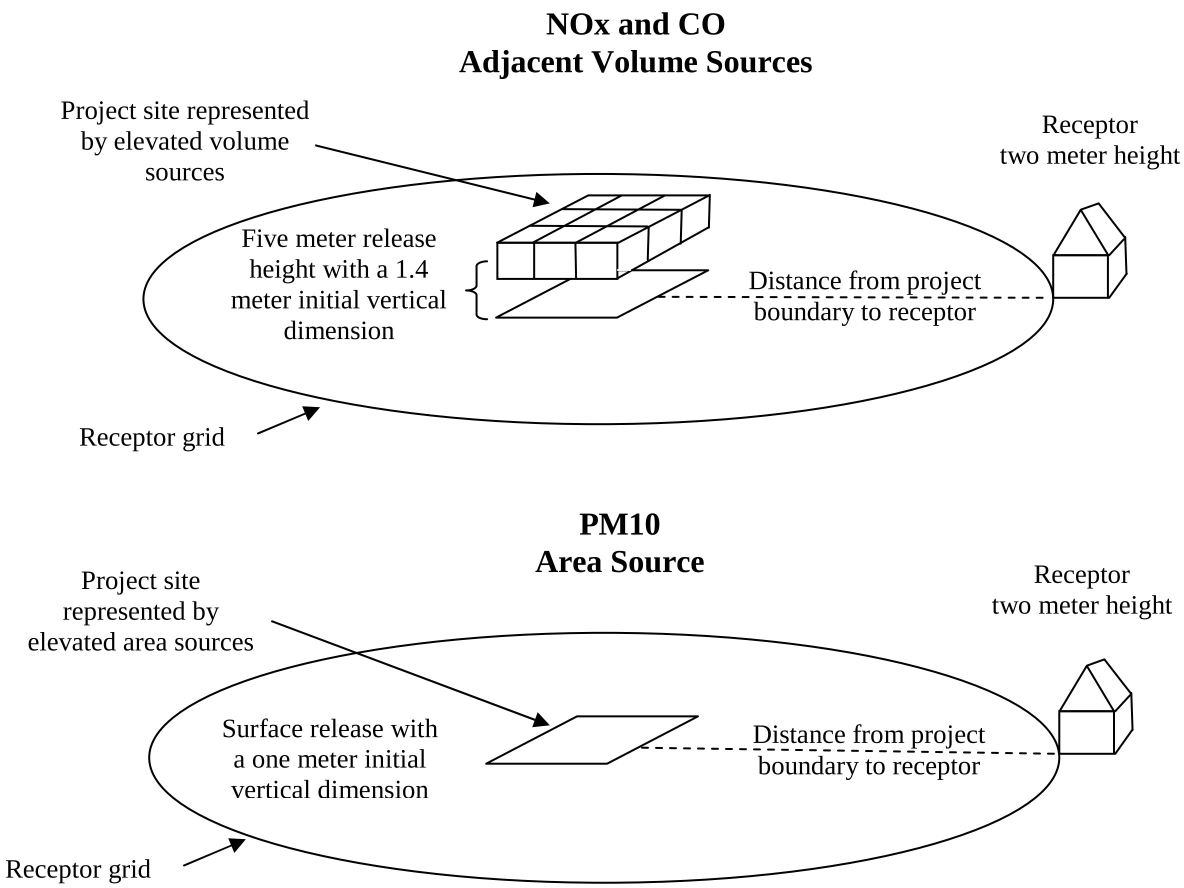

Figure 2-1. Volume and Area Sources

Table 2-1. Number and Dimensions of Volume Sources

Area	***Number of volume sources***	***Dimensions of volume source***
1 acre	36	10 by 10 meters
2 acres	81	10 by 10 meters
5 acres	49	20 by 20 meters

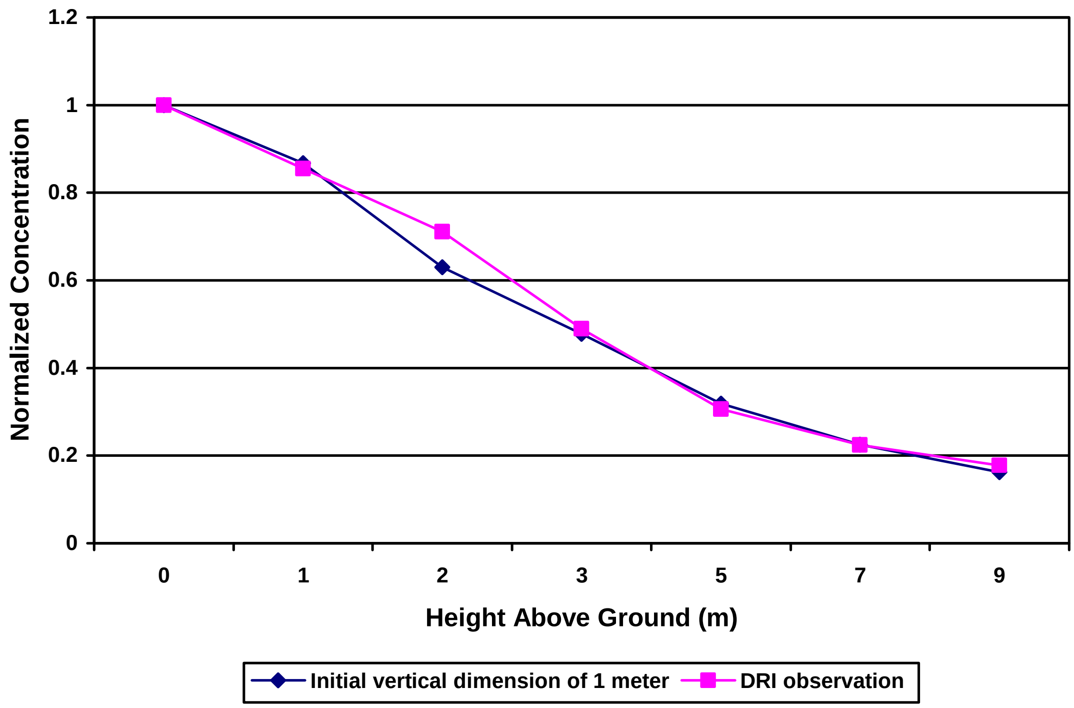

Figure 2-2. Comparison of Vertical Concentration Profiles

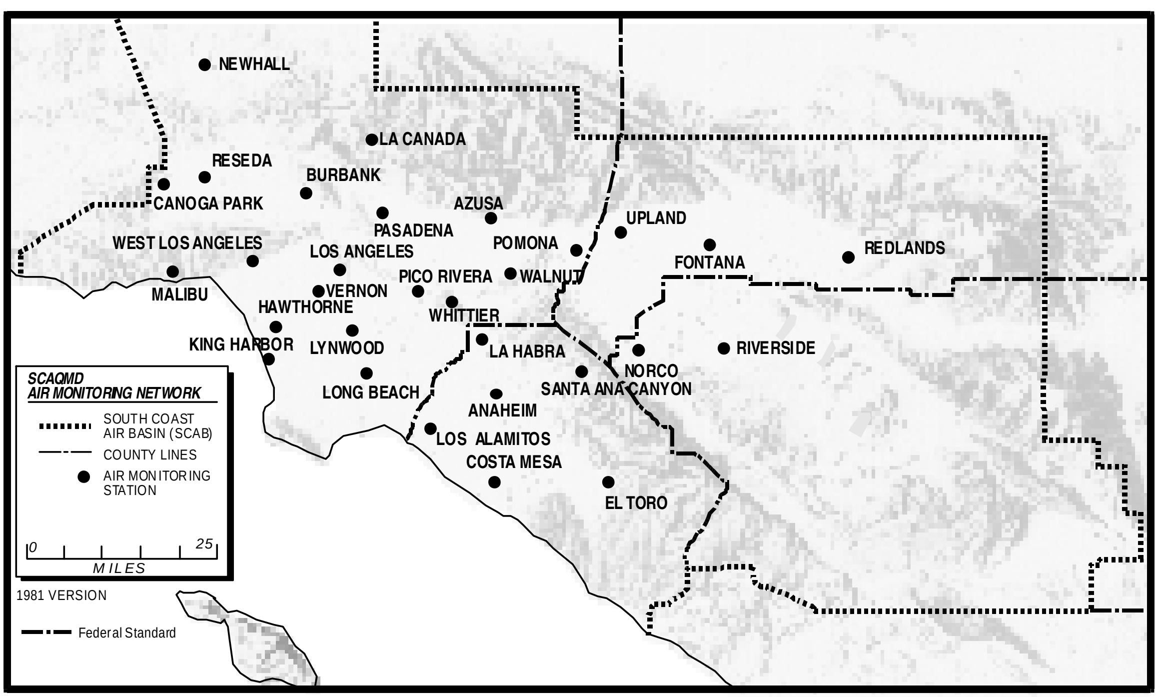

Figure 2-3. 1981 District Meteorological Sites

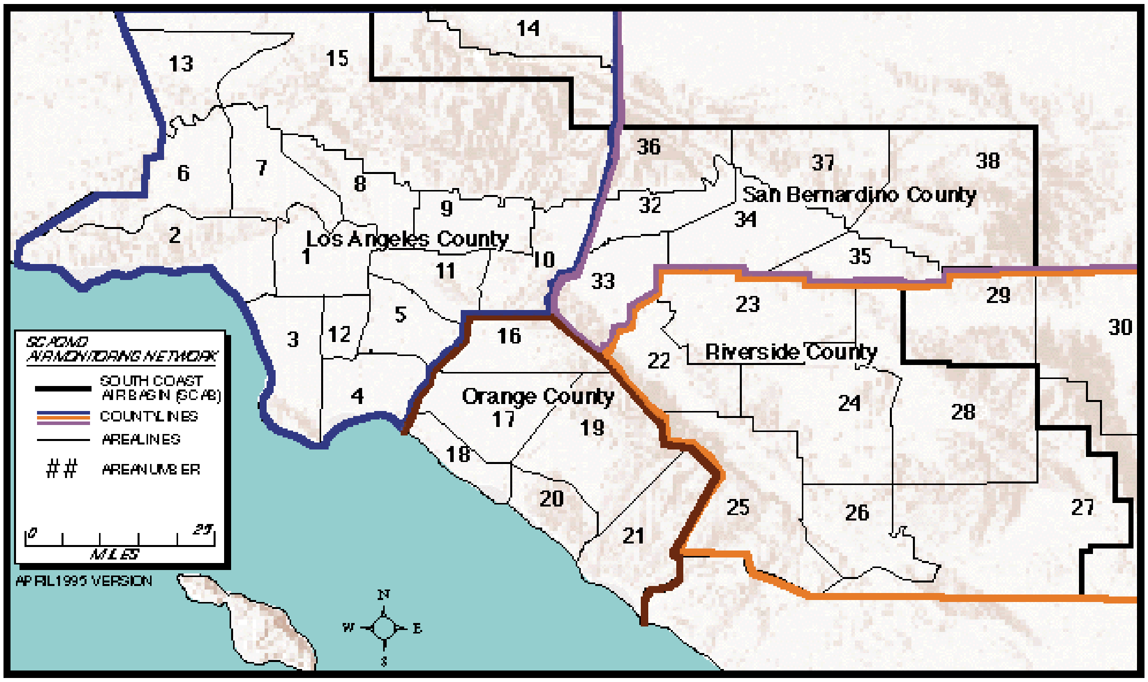

Figure 2-4. Source/Receptor Areas in the District

BACKGROUND CO AND NO_2 AIR QUALITY

To determine whether or not construction activities create significant adverse localized air quality impacts, the emissions contribution from the project is added to ambient concentrations and the total is then compared to the most stringent applicable state and/or federal ambient air quality standards for CO and NO_2. In order to be able to make this determination, it is necessary to know the background concentrations in the vicinity of the proposed project site. The modeled incremental impacts from project activities are added to the background values to estimate the peak impacts downwind of the activities. The LST concentrations are derived by ensuring that the total concentrations (i.e., background plus project contribution) are just less than the most stringent applicable state and federal ambient air quality standards. The methodology for identifying the background concentrations is outlined in the following paragraphs.

Table 2-3 lists the SCAQMD air quality monitoring stations that measure CO or NO_2 in the district. At the time of LST adoption, a database of annual concentrations was assembled for the period 1999 to 2001. Peak one-hour CO and NO_2, and peak eight-hour CO concentrations for the three-year period were identified.

The observed peak one-hour CO, one-hour NO_2, and eight-hour CO concentrations for the three-year period are given in Appendix A for each available station. The peak concentrations for each year and for the three-year period as a whole are provided. The difference between the peak concentrations and the relevant state and federal standards determines the allowable mass emissions for the construction activities that would not result in significant adverse localized air quality impacts.

Table 2-2. 1981 Meteorological Data for Dispersion Modeling

Station ID			UTM (kilometer)	
Surface	**Upper air**	**Site Name**	**Easting**	**Northing**
53071	91919	Anaheim	415.0	3742.5
54097	99999	Azusa	414.9	3777.4
54144	99999	Banning	510.5	3754.5
51100	99999	Burbank	379.5	3783.0
51067	99999	Canoga Park	352.9	3786.0
53112	91919	Compton	385.5	3750.3
53126	91919	Costa Mesa	413.8	3724.2
52075	91919	Downtown Los Angeles	386.9	3770.1
53128	91919	El Toro	436.0	3720.9
54149	99999	Fontana	455.4	3773.9
54146	99999	Indio	572.3	3731.0
53012	91919	King Harbor	371.2	3744.4
51108	99999	La Canada	388.2	3786.1
53099	91919	La Habra	412.0	3754.0
51117	99999	Lancaster	396.0	3839.5
52118	91919	Lennox	373.0	3755.0
53101	91919	Long Beach	390.0	3743.0
53127	91919	Los Alamitos	404.5	3739.8
52130	91919	Lynwood	388.0	3754.0
52104	91919	Malibu	344.0	3766.9
51115	99999	Newhall	355.5	3805.5
54167	99999	Norco	446.8	3749.0
54145	99999	Palm Springs	542.5	3742.5
51122	99999	Pasadena	396.0	3778.5
53134	91919	Pico Rivera	402.3	3764.1
54109	99999	Pomona	430.8	3769.6
54161	99999	Redlands	486.2	3769.4
51107	99999	Reseda	359.0	3785.0
54139	99999	Riverside	464.8	3758.6
53137	91919	Santa Ana Canyon	431.0	3748.4
54147	99999	Upland	440.0	3773.1
52132	91919	Vernon	387.4	3762.5
54106	99999	Walnut	420.0	3761.7
52158	91919	West Los Angeles	372.3	3768.6
53114	91919	Whittier	405.3	3754.0

UTM = Universal Transverse Mercator

Table 2-3. SCAQMD Stations Measuring CO or NO_2

Station	Pollutant measured	
	CO	**NO_2**
Central LA	X	X
Northwest Coastal LA County	X	X
Southwest Coastal LA County	X	X
South Coastal LA County	X	X
West San Fernando Valley	X	X
East San Fernando Valley	X	X
West San Gabriel Valley	X	X
East San Gabriel Valley 1	X	X
East San Gabriel Valley 2	X	X
Pomona/Walnut Valley	X	X
South San Gabriel Valley	X	X
South Central LA County 1	X	X
South Central LA County 2	X	X
Santa Clarita Valley	X	X
North Orange County	X	X
Central Orange County	X	X
North Coastal Orange County	X	X
Saddleback Valley 1	X	
Saddleback Valley 2	X	X
Norco/Corona		
Metropolitan Riverside County 1	X	X
Metropolitan Riverside County 2	X	X
Perris Valley		
Lake Elsinore	X	X
Banning Airport		X
Coachella Valley 1	X	X
Coachella Valley 2	X	X
Northwest San Bernardino Valley	X	X
Southwest San Bernardino Valley		
Central San Bernardino Valley 1		X
Central San Bernardino Valley 2	X	X
East San Bernardino Valley		
Central San Bernardino Mountains		
East San Bernardino Mountains		

PM2.5 AND PM10 AIR QUALITY

PM2.5 and PM10 impacts are treated differently than CO and NO_2, since, as mentioned earlier, nearly the entire district exceeds the state or federal PM2.5 and PM10 standards. Therefore, the incremental PM2.5 and PM10 impacts from construction are derived based on the change in concentration threshold of 10.4 $\mu g/m^3$ (24-hour average), which is comparable to the requirement in paragraph (d)(4) in SCAQMD Rule 403, which prohibits fugitive dust concentrations beyond a project's boundary that exceed 50 $\mu g/m^3$ (averaged over five hours) (see footnote #3). PM2.5 and PM10 impacts from operational activities are derived based on the allowable change in concentration threshold of 2.5 $\mu g/m^3$ in Table A-2 of Rule 1303 (see footnote #4). Because the entire district is nonattainment for PM2.5 and PM10, determining background PM2.5 and PM10 concentrations is unnecessary. However, meteorological conditions in the source receptor areas will ultimately affect the PM2.5 and PM10 LSTs.

NO_2-TO-NO_X RATIO

Combustion processes occurring from equipment yield NO_X emissions. The two principal NO_X species are nitric oxide (NO) and nitrogen dioxide (NO_2), with the vast majority (95 percent) of the NO_X emissions being comprised of NO. Adverse health effects are associated with NO_2, not NO. NO is converted to NO_2 by several processes, the two most important of these are (1) the reaction of NO with ozone and (2) the photochemical reaction of NO with hydrocarbon radical species. Destruction of NO_2 occurs with its photodissociation into NO and molecular oxygen.

NO_X emissions are simulated in the air quality dispersion model and the NO_2 conversion rate is treated by an NO_2-to-NO_X ratio, which is a function of downwind distance. Initially, it is assumed that only five percent of the emitted NO_X is NO_2. At 500 meters downwind, 100 percent conversion of NO-to-NO_2 is assumed. The assumed NO_2-to-NO_X ratios between those distances are presented in Figure 2-5. The NO_2 conversion rates are adapted from work by Arellano et al.[5].

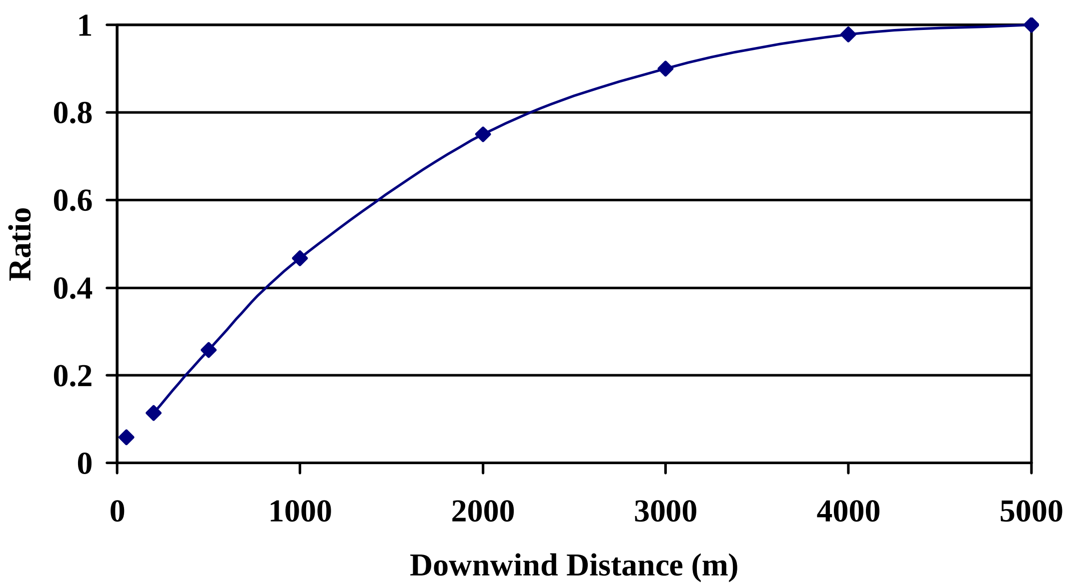

Figure 2-5. NO_2-to-NO_X Ratio as a Function of Downwind Distance

[5] Arellano, J.V., A.M. Talmon, and P.J.H. Builtjes, 1990.

Table 2-4. NO_2-to-NO_X Ratio as a Function of Downwind Distance

Downwind Distance (m)	NO2/NOx Ratio
20	0.053
50	0.059
70	0.064
100	0.074
200	0.114
500	0.258
1000	0.467
2000	0.75
3000	0.9
4000	0.978
5000	1

DERIVING LOCALIZED SIGNIFICANCE THRESHOLDS

Localized Significance Thresholds by Concentration

LSTs by concentrations were used to develop mass rate LSTs. Project proponents, who choose to perform project specific air quality dispersion modeling, should use LST concentrations to determine adverse air quality impacts. Project proponents can either follow the procedures presented below to develop LSTs by concentration or use the tables in Appendix B, and Rules 403 and 1301.

Gaseous Pollutants (NOx and CO)

To derive the LST concentrations it is necessary to know the concentration of the most stringent ambient air quality standard and the ambient concentration for the pollutant under consideration in a specified SRA. The difference between the ambient air quality standard and the peak ambient concentration in the SRA produces a concentration that is then converted into mass emissions. The mass emissions result is the maximum amount of emissions a project can emit, when added to ambient concentrations, without causing or contributing to an exceedance of the most stringent applicable ambient air quality standard (i.e., background + project contribution). The resulting mass emissions amount is the LST for the pollutant under consideration for the specified SRA. The LST concentrations for NOx and CO, which are the differences in concentration between the most stringent ambient air quality standard and the peak ambient concentrations for each SRA are shown in Appendix B. The project contribution emissions level is derived using the following equation:

$$C_{PC} = C_{AAQS} - Cb \qquad \textbf{Eq. 2}$$

Where: C_{PC} is the project contribution emission levels in micrograms per cubic meter;

Cb is the background concentration measured at the closest air quality monitoring station in micrograms per cubic meter; and

C_{AAQS} is the limiting state or federal standards in micrograms per cubic meter.

Particulate Matter

The LST concentrations for particulate matter are the concentration thresholds presented in Rules 403 and 1301. The Rule 403 threshold of 10.4 microns per cubic meter applies to construction activities, and may apply to operational activities at aggregate handling facilities. The Rule 1301 threshold of 2.5 microns per cubic meter applies to nonaggregate handling operational activities.

Localized Significance Thresholds by Mass Rate

LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area. The mass rate LSTs are estimated using an air dispersion model.

Air Dispersion Modeling

A unit emission rate is the single unit of mass over time or emissions rate (e.g., one gram per second, one kilogram per second, one pound per hour, one ton per year, etc.). Unit emission rates are typically developed over established AAQS averaging times or daily operating hours (i.e., one-hour, eight-hour, 24-hour, etc.). Unit emissions rates are used to normalize the resulting concentration produced by a dispersion model for ease of calculation. Therefore, ISC3 modeling was performed assuming a one pound per day emission rate over the eight-hour construction period of 8 a.m. to 4 p.m. The units of the results are in grams per cubic meter, per pound per day ($[\mu g/m^3]/[lb/day]$). ISC3 provides peak predicted concentrations at the downwind distances for the receptor for one-hour, eight-hour, and 24-hour averaging periods.

Calculating Localized Significance Thresholds

Gaseous Pollutants (NOx and CO)

Multiplying the unit emission rate of one-pound per day by the ratio of the project contribution level to the peak predicted concentration using ISC3 yields the mass rate LST in pounds per day.

$$E_{max} = U \text{ x } (C_{PC})/C_u \qquad \textbf{Eq. 3}$$

Where: E_{max} is the daily mass rate LST emissions in pounds per eight-hour day;

U is the unit emission rate of one-pound per eight-hour day (one-lb/day);

C_{PC} is the acceptable impact levels in micrograms per cubic meter; and

C_u is the peak predicted concentration in micrograms per cubic meter estimated by ISC3 for a unit emission rate of one-pound per day.

The daily mass rate LSTs in pounds per day are the emission rates that with the background concentration would equal but not exceed the most stringent AAQS. These allowable maximum daily emissions are presented in the mass rate Localized Significance Threshold Screening Tables in Appendix C.

Particulate Matter

The predicted PM2.5 or PM10 concentration at a given distance in meters from the fence line is estimated from Equation 1 using the PM2.5 or PM10 concentration at the fence line estimated by ISC3 for sources with combined unit emission rate of one-pound per day. Equation 4 estimates the daily mass rate LST emission in pounds per day from the predicted PM2.5 or PM10 concentration at a given distance from the fence line.

$$E_{max} = (C_{rule})/C_x \qquad \textbf{Eq. 4}$$

Where: E_{max} is the daily mass rate LST emissions in pounds per eight-hour day;

C_{rule} is the concentration threshold presented in Rule 403 (construction) or 1301 (operation); and

C_x is the predicted PM2.5 or PM10 concentration at x meters from the fence line in micrograms per cubic meter for a unit emission rate of one-pound per day. (see Eq. 1);

The concentration threshold is taken from either Rule 403 (10.4 microns per cubic meter) for construction activities or from Rule 1301 (2.5 microns per cubic meter) for operational activities. These allowable maximum daily PM2.5 or PM10 emissions are presented in the mass rate Localized Significance Threshold Screening Tables in Appendix C.

CHAPTER 3
SCREENING TABLES AND THEIR USE

The LST lookup tables provided in Appendix C allow a user to readily determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts. If the calculated emissions for the proposed construction or operational activities are below the LST emission levels found on the LST lookup tables, then the proposed construction or operation activity is not significant. Proposed projects whose calculated emission budgets for the proposed construction or operational activities are above the LST emission levels found in the LST lookup tables should not assume that the project would necessarily generate adverse impacts. Detailed emission calculations and/or air dispersion modeling may demonstrate that pollutant concentrations are below localized significant levels.

The CO, NO_X, PM2.5 and PM10 LST lookup tables for each source receptor area are provided in Appendix C for the 37 source receptor/areas. The CO and NOx LST lookup tables can be utilized for both construction and operational activities. There are two sets of PM2.5 and PM10 LST lookup tables: one for construction emissions and one for operational emissions. The operational emission PM2.5 and PM10 LST lookup tables were developed based on the allowable change in concentration threshold of 2.5 µg/m3 in Table A-2 of Rule 1303. It is recommended that operational emissions associated with fugitive dust area sources (e.g., landfills, aggregate material operations) use the PM10 LST lookup tables for operational activities. A lead agency can contact the SCAQMD staff (ceqa_admin@aqmd.gov) if there are any questions regarding which is the appropriate PM10 LST lookup tables for area source operational activities.

The tables are first organized by pollutant and then by source/receptor area. Within the tables, the distance to the nearest receptor is required to properly choose the correct allowable emission rate. The estimated maximum daily construction and operational emissions are compared to the allowable emissions to determine significance. If the projected emission budgets are less than the allowable emissions then significant local impacts are not expected.

Therefore, the information needed to use the LST lookup tables is as follows:

- Maximum daily emissions of CO, NO_X, PM2.5 and PM10 in pounds per day (lb/day)
- Distance from the boundary of the proposed project site to the nearest off-site receptor
- Geographic location of the construction site in terms of district source/receptor area

This information directs the user to the correct table and table cell. Additional guidance in each of these three areas is given below:

ESTIMATE EMISSIONS

The first step in the process is to estimate the maximum daily emissions of CO, NO_X, PM2.5 and PM10. The emissions include <u>only on-site</u> activities and the emission rate must be expressed in pounds per day. The PM2.5 and PM10 emissions should include both fugitive dust and exhaust from the stationary/mobile equipment on-site. The emission rates can be estimated based on project specific equipment categories and proposed controls.

DETERMINE THE SOURCE/RECEPTOR AREA OF THE PROPOSED CONSTRUCTION/OPERATIONAL ACTIVITY

On the SCAQMD website is a utility that provides the district source/receptor area for a given street address (www.aqmd.gov). The user is advised to follow the instructions on the use of this utility.

ESTIMATE THE RECEPTOR DISTANCE

Receptor locations are off-site locations where persons may be exposed to the emissions from project activities. Receptor locations include residential, commercial and industrial land use areas; and any other areas where persons can be situated for an hour or longer at a time. These other areas include parks, bus stops, and side walks but would not include the tops of buildings, roadways, or permanent bodies of water such as, oceans or lakes.[6]

For the purposes of a CEQA analysis, the SCAQMD considers a sensitive receptor to be to be a receptor such as residence, hospital, convalescent facility were it is possible that an individual could remain for 24 hours. Commercial and industrial facilities are not included in the definition of sensitive receptor because employees do not typically remain onsite for a full 24 hours, but are present for shorter periods of time, such as eight hours. Therefore, applying a 24-hour standard for PM10 is appropriate not only because the averaging period for the state standard is 24 hours, but because, according to the SCAQMD's definition, the sensitive receptor would be present at the location for the full 24 hours.

Since a sensitive receptor is considered to be present onsite for 24 hours, LSTs based on shorter averaging times, such as the one-hour NO_2 or the one-hour and eight-hour CO ambient air quality standards, would also apply. However, LSTs based on shorter averaging periods, such as the NO_2 and CO LSTs, could also be applied to receptors such as industrial or commercial facilities since it is reasonable to assume that a worker at these sites could be present for periods of one to eight hours. This assumption is consistent with the CO hotspots modeling protocol, which requires modeling at receptors that may also include commercial and industrial sites. It is for this reason that the Methodology paper included commercial and industrial sites when discussing receptor locations as opposed to sensitive receptors.

[6] SCAQMD, *Risk Assessment Procedures for Rules 1401 and 212*, Version 6.0, 2000. p 8.

The receptor distance is measured from the boundary of the proposed project site to the nearest receptor location. Care should be taken when estimating these distances since allowable emissions increase rapidly with increasing downwind distance. It is acceptable to linearly interpolate to estimate the allowable emissions between the downwind distances given in the tables.

The closest receptor distance on the mass rate LST look-up tables is 25 meters. It is possible that a project may have receptors closer than 25 meters. Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters.

MITIGATION MEASURES

If project emissions exceed the mass rates presented in the LST look-up tables or allowable air quality impacts based on modeling, CEQA requires lead agencies to implement feasible mitigation measures, if available, to reduce adverse air quality impacts. Lead agencies may use the mitigation measures presented in Chapter 11 and its appendix in the Handbook (1993), other sources, or develop their own mitigation measures. The CEQA Handbook can be accessed on line at www.aqmd.gov/eg/I-4/I4.htm. AQMD staff is available for consultation on mitigation measures to provide updates or new information, if available, on a project-by-project basis.

LIMITATIONS OF THE SCREENING TABLES

The LST lookup tables were developed to assist lead agencies with a simple tool for evaluating the impacts from small typical projects. Table 3-1 includes a list of typical projects. Large industrial projects, such as installation of turbines at power plants are beyond the scope of these LST lookup tables. LSTs are applicable at the project-specific level and generally are not applicable to regional projects such as local General Plans unless specific projects are identified in the General Plans. Regional analyses are more applicable to the scope of General Plans. Table 3-2 includes typical projects where the LST lookup tables may not apply.

Table 3-1. Typical Projects

Apartments	Medical Office Building
Banks	Mobil Home Park
City Parks	Nursing Home
Condo/Townhouses	Office Buildings
Convenience Market	Pharmacy/Drug Store
Day-Care Center	Places of Worship
Discount Clubs	Racquet/Health Clubs
Discount Stores	Regional Shopping Center
Electronics Store	Residential Planned Unit Development (PUD)
Hardware/Paint Store	Restaurants
Home Improvement Store	Retirement Community
Hospital	Schools (Elementary, Junior High /Middle, High)
Hotels/Motels	Single Family Housing
Industrial Building	Strip Mall
Libraries	Supermarket
Manufacturing	University/College

Table 3-2. Typical Projects Where Screening Tables May Not Apply

Project Sites Larger than 5 acres	Projects that require more than one shift
Projects at RECLAIM facilities	Project sites where emissions are distinctly non-uniform across site
Projects at Title V facilities	Operational sources where fumigation or building downwash is anticipated
Large Combustion Sources	General Plans

The LST lookup tables are limited to projects with the following parameters:

- Five acres or smaller in size
- Limited to eight-hours of operation per day
- Limited to operations during the day
- It is assumed emission sources are distributed evenly across proposed site

Proposed projects that exceed the above limitations should complete a site specific localized significance analysis.

SAMPLE CALCULATIONS

Based on stakeholder comments to ease concerns on potential resource impacts due to necessary quantification of emissions, a separate technical document was prepared to illustrate how construction emissions can be calculated for LST impact analysis. The sample calculations can be used by lead agencies for simlar projects if the projects fall within the general parameters assumed for the sample projects. A copy of this report can be found at www.aqmd.gov/eg/I-4/I4.htm. Additional scenarios can be added upon request for general use and AQMD staff is also available to provide technical assistance to lead agency staff.

CHAPTER 4
CONCLUSION

Environmental justice initiatives and revision of the Handbook have focused attention on localized adverse effects of proposed projects on air quality. In order to address potential localized impacts this proposal attempts to establish the thresholds reflecting existing air quality. The cleaner the air is in a local area, the greater emissions increment it can afford without causing or contributing to an exceedance of the most stringent ambient air quality standard. If the existing air quality is not yet in compliance with the air quality standards, all areas are subject to generally equivalent LSTs

Historically assessing localized air quality impacts required using complex dispersion models. Therefore, to address the issue of localized significance, yet be sensitive to the fact that other public agencies might not have the expertise or adequate financial resources to perform dispersion modeling, in addition to the methodology itself, SCAQMD staff developed localized significant threshold similar to the regional significance thresholds, that is, based on the amount of pounds of emissions per day generated by a proposed project that would cause or contribute to adverse localized air quality impacts. These projects are assumed to be less than five acres in size. Emissions were assumed to be uniformly distributed across a flat proposed project site over an eight-hour workday. Receptors distances are measured in meters from the proposed project boundary. The same emissions estimated for regional significant thresholds should be compared to allowable emissions presented the LST lookup tables for the source/receptor area closest to the proposed project.

Screening procedures are by design conservative, that is, the predicted impacts tend to overestimate the actual impacts. If the predicted impacts are acceptable using the LST approach presented here, then a more detailed evaluation is not necessary. However, if the predicted impacts are significant, then the project proponent may wish to perform a more detailed emission and/or modeling analysis before concluding that the impacts are significant. Project proponents are not required to use this LST procedure; and may complete site specific modeling instead.

CHAPTER 5
REFERENCES

Arellano, J.V., A.M. Talmon, and P.J.H. Builtjes, "A Chemically Reactive Plume Model for the NO-NO_2-O_3 System," *Atmospheric Environment* **24A**, 2237-2246

Desert Research Institute, *Final Effectiveness Demonstration of Fugitive Dust Control Methods for Public Unpaved Roads and Unpaved Shoulders on Paved Roads*, DRI Document No. 685-5200.1F1, prepared for CARB CRPAQS, December 31, 1996.

SCAQMD, *CEQA Air Quality Handbook*, April 1993.

SCAQMD, *Risk Assessment Procedures for Rules 1401 and 212*, Version 6.0, August 18, 2002.

USEPA, *User's Guide for the Industrial Source Complex (ISC3) Dispersion Models, Volume I and II*, EPA-454/B-95-003, September, 1995.

APPENDIX A

PEAK BACKGROUND CONCENTRATIONS

FOR THE 1999–2001 PERIOD

The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

Table A-1
Peak Background Concentrations for the 1999-2001 Period[a]

Source/ Receptor Area	Air Quality Site	Pollutant	Averaging Time	Units	1999 Conc.	2000 Conc.	2001 Conc.	Max Conc.
1	Central LA	NOx	1-hr	ppm	0.21	0.16	0.14	0.21
		CO	1-hr	ppm	7.00	7.00	6.00	7.00
		CO	8-hr	pphm	6.30	6.00	4.57	6.30
2	Northwest Coastal LA County	NOx	1-hr	ppm	0.13	0.16	0.11	0.16
		CO	1-hr	ppm	6.00	6.00	4.00	6.00
		CO	8-hr	pphm	3.80	4.30	3.00	4.30
3	Southwest Coastal LA County	NOx	1-hr	ppm	0.13	0.13	0.11	0.13
		CO	1-hr	ppm	10.00	9.00	7.00	10.00
		CO	8-hr	pphm	8.40	7.00	5.14	8.40
4	South Coastal LA County	NOx	1-hr	ppm	0.15	0.14	0.13	0.15
		CO	1-hr	ppm	7.00	10.00	6.00	10.00
		CO	8-hr	pphm	5.40	5.80	4.71	5.80
6	West San Fernando Valley	NOx	1-hr	ppm	0.12	0.11	0.09	0.12
		CO	1-hr	ppm	9.00	11.00	7.00	11.00
		CO	8-hr	pphm	7.60	9.80	6.00	9.80
7	East San Fernando Valley	NOx	1-hr	ppm	0.18	0.17	0.25	0.25
		CO	1-hr	ppm	9.00	8.00	6.00	9.00
		CO	8-hr	pphm	9.00	6.10	4.88	9.00

a) The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

Table A-1 (Continued)
Peak Background Concentrations for the 2000-2002 Period[a]

Source/ Receptor Area	Air Quality Site	Pollutant	Averaging Time	Units	2000 Conc.	2001 Conc.	2002 Conc.	Max Conc.
1	Central LA	NOx	1-hr	ppm	0.16	0.14	0.14	0.16
		CO	1-hr	ppm	7.00	6.00	5.00	7.00
		CO	8-hr	pphm	6.00	4.57	4.00	6.00
2	Northwest Coastal LA County	NOx	1-hr	ppm	0.16	0.11	0.11	0.16
		CO	1-hr	ppm	6.00	4.00	4.00	6.00
		CO	8-hr	pphm	4.30	3.00	2.70	4.30
3	Southwest Coastal LA County	NOx	1-hr	ppm	0.13	0.11	0.10	0.13
		CO	1-hr	ppm	9.00	7.00	7.00	9.00
		CO	8-hr	pphm	7.00	5.14	6.10	7.00
4	South Coastal LA County	NOx	1-hr	ppm	0.14	0.13	0.13	0.14
		CO	1-hr	ppm	10.00	6.00	6.00	10.00
		CO	8-hr	pphm	5.80	4.71	4.60	5.80
6	West San Fernando Valley	NOx	1-hr	ppm	0.11	0.09	0.09	0.11
		CO	1-hr	ppm	11.00	7.00	6.00	11.00
		CO	8-hr	pphm	9.80	6.00	4.80	9.80
7	East San Fernando Valley	NOx	1-hr	ppm	0.17	0.25	0.26	0.26
		CO	1-hr	ppm	8.00	6.00	6.00	8.00
		CO	8-hr	pphm	6.10	4.88	4.60	6.10

a) The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

Table A-1 (Continued)
Peak Background Concentrations for the 2000-2002 Period[a]

Source/ Receptor Area	Air Quality Site	Pollutant	Averaging Time	Units	2000 Conc.	2001 Conc.	2002 Conc.	Max Conc.
8	West San Gabriel Valley	NOx	1-hr	ppm	0.17	0.15	0.15	0.17
		CO	1-hr	ppm	9.00	7.00	6.00	9.00
		CO	8-hr	pphm	7.40	5.00	4.00	7.40
9	East San Gabriel Valley 1	NOx	1-hr	ppm	0.15	0.12	0.12	0.15
		CO	1-hr	ppm	5.00	3.00	4.00	5.00
		CO	8-hr	pphm	4.90	2.88	2.40	4.90
9	East San Gabriel Valley 2	NOx	1-hr	ppm	0.13	0.12	0.10	0.13
		CO	1-hr	ppm	4.00	3.00	5.00	5.00
		CO	8-hr	pphm	3.10	2.50	2.30	3.10
10	Pomona/Walnut Valley	NOx	1-hr	ppm	0.14	0.13	0.11	0.14
		CO	1-hr	ppm	7.00	5.00	6.00	7.00
		CO	8-hr	pphm	4.90	3.43	3.30	4.90
11	South San Gabriel Valley	NOx	1-hr	ppm	0.14	0.14	0.12	0.14
		CO	1-hr	ppm	7.00	6.00	5.00	7.00
		CO	8-hr	pphm	5.30	4.00	4.00	5.30
12	South Central LA County 1	NOx	1-hr	ppm	0.14	0.15	0.14	0.15
		CO	1-hr	ppm	13.00	12.00	16.00	16.00
		CO	8-hr	pphm	10.00	7.71	10.10	10.10

a) The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

Table A-1 (Continued)
Peak Background Concentrations for the 2000-2002 Period[a]

Source/ Receptor Area	Air Quality Site	Pollutant	Averaging Time	Units	2000 Conc.	2001 Conc.	2002 Conc.	Max Conc.
12	South Central LA County 2	NOx	1-hr	ppm	0.11	--	--	0.11
		CO	1-hr	ppm	13.00	--	--	13.00
		CO	8-hr	pphm	9.50	--	--	9.50
13	Santa Clarita Valley	NOx	1-hr	ppm	0.10	0.10	0.10	0.10
		CO	1-hr	ppm	6.00	6.00	3.00	6.00
		CO	8-hr	pphm	4.90	3.14	1.90	4.90
16	North Orange County	NOx	1-hr	ppm	0.12	0.13	0.12	0.13
		CO	1-hr	ppm	14.00	11.00	10.00	14.00
		CO	8-hr	pphm	6.10	4.71	4.40	6.10
17	Central Orange County	NOx	1-hr	ppm	0.13	0.12	0.10	0.13
		CO	1-hr	ppm	8.00	8.00	7.00	8.00
		CO	8-hr	pphm	6.80	4.71	5.40	6.80
18	North Coastal Orange County	NOx	1-hr	ppm	0.11	0.08	0.11	0.11
		CO	1-hr	ppm	8.00	6.00	5.00	8.00
		CO	8-hr	pphm	6.30	4.57	4.30	6.30
19	Saddleback Valley 1	NOx	1-hr	ppm	--	--	--	0.00
		CO	1-hr	ppm	5.00	--	--	5.00
		CO	8-hr	pphm	2.30	--	--	2.30

a) The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

Table A-1 (Continued)
Peak Background Concentrations for the 2000-2002 Period[a]

Source/ Receptor Area	Air Quality Site	Pollutant	Averaging Time	Units	2000 Conc.	2001 Conc.	2002 Conc.	Max Conc.
19	Saddleback Valley 2	NOx	1-hr	ppm	--	--	--	0.00
		CO	1-hr	ppm	4.00	3.00	3.00	4.00
		CO	8-hr	pphm	3.30	2.38	3.60	3.60
22	Norco/Corona	NOx	1-hr	ppm	--	--	--	0.00
		CO	1-hr	ppm	--	--	--	8.00
		CO	8-hr	pphm	--	--	--	4.30
23	Metropolitan Riverside County 1	NOx	1-hr	ppm	0.10	0.15	0.10	0.15
		CO	1-hr	ppm	5.00	5.00	8.00	8.00
		CO	8-hr	pphm	4.30	3.43	3.00	4.30
23	Metropolitan Riverside County 2	NOx	1-hr	ppm	--	--	--	0.00
		CO	1-hr	ppm	9.00	6.00	7.00	8.00
		CO	8-hr	pphm	4.30	4.50	3.90	4.50
24	Perris Valley	NOx	1-hr	ppm	--	--	--	0.00
		CO	1-hr	ppm	--	--	--	8.00
		CO	8-hr	pphm	--	--	--	4.50
25	Lake Elsinore	NOx	1-hr	ppm	0.08	0.09	0.07	0.09
		CO	1-hr	ppm	4.00	2.00	3.00	4.00
		CO	8-hr	pphm	2.00	2.00	2.00	2.00

a) The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

Table A-1 (Continued)
Peak Background Concentrations for the 2000-2002 Period[a]

Source/ Receptor Area	Air Quality Site	Pollutant	Averaging Time	Units	2000 Conc.	2001 Conc.	2002 Conc.	Max Conc.
29	Banning Airport	NOx	1-hr	ppm	0.21	0.24	0.15	0.24
		CO	1-hr	ppm	--	--	--	3.00
		CO	8-hr	pphm	--	--	--	0.00
30	Coachella Valley 1**	NOx	1-hr	ppm	0.07	0.08	0.10	0.10
		CO	1-hr	ppm	3.00	2.00	2.00	3.00
		CO	8-hr	pphm	1.60	1.50	1.20	1.60
30	Coachella Valley 2**	NOx	1-hr	ppm	0.06	0.00	--	0.06
		CO	1-hr	ppm	3.00	--	--	3.00
		CO	8-hr	pphm	2.10	--	--	2.10
32	Northwest San Bernardino Valley	NOx	1-hr	ppm	0.15	0.13	0.12	0.15
		CO	1-hr	ppm	4.00	3.00	4.00	4.00
		CO	8-hr	pphm	2.60	1.75	1.60	2.60
33	Southwest San Bernardino Valley	NOx	1-hr	ppm	--	--	--	0.00
		CO	1-hr	ppm	--	--	--	4.00
		CO	8-hr	pphm	--	--	--	2.60
34	Central San Bernardino Valley 1	NOx	1-hr	ppm	0.12	0.13	0.12	0.13
		CO	1-hr	ppm	--	--	--	4.00
		CO	8-hr	pphm	--	--	--	2.60

a) The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

Table A-1 (Concluded)
Peak Background Concentrations for the 2000-2002 Period[a]

Source/ Receptor Area	Air Quality Site	Pollutant	Averaging Time	Units	2000 Conc.	2001 Conc.	2002 Conc.	Max Conc.
34	Central San Bernardino Valley 2	NOx	1-hr	ppm	0.10	0.11	0.11	0.11
		CO	1-hr	ppm	5.00	4.00	5.00	5.00
		CO	8-hr	pphm	4.30	3.25	3.30	4.30
35	East San Bernardino Valley	NOx	1-hr	ppm	--	--	--	0.00
		CO	1-hr	ppm	--	--	--	5.00
		CO	8-hr	pphm	--	--	--	4.30
37	Central San Bernardino Mountains	NOx	1-hr	ppm	--	--	--	0.00
		CO	1-hr	ppm	--	--	--	5.00
		CO	8-hr	pphm	--	--	--	4.30
38	East San Bernardino Mountains	NOx	1-hr	ppm	--	--	--	0.00
		CO	1-hr	ppm	--	--	--	5.00
		CO	8-hr	pphm	--	--	--	4.30

a) The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

APPENDIX B

DIFFERENCES BETWEEN THE MOST STRINGENT AMBIENT AIR QUALITY STANDARD AND AMBIENT CONCENTRATIONS FOR EACH SRA FOR THE 1999–2001 PERIOD

The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

The current NO2 State AAQS is 0.18 ppm as of March 20, 2008. Table B-1 was prepared when the NO2 State AAQS was 0.025.

Table B-1
Difference in Concentration for the 2000-2002 Period

Source/ Receptor Area	Air Quality Site	Pollutant	Averaging Time	AAQS[a] (ppm)	Observed[b] (ppm)	Difference (ppm)	Difference (ug/m^3)
1	Central LA	NO_2	1-hr	0.25	0.16	0.09	170
		CO	1-hr	20	7	13	14,950
		CO	8-hr	9	6	3	3,444
2	Northwest Coastal LA County	NO_2	1-hr	0.25	0.16	0.09	170
		CO	1-hr	20	6	14	16,100
		CO	8-hr	9	4.3	4.7	5,396
3	Southwest Coastal LA County	NO_2	1-hr	0.25	0.13	0.12	226
		CO	1-hr	20	9	11	12,650
		CO	8-hr	9	7	2	2,296
4	South Coastal LA County	NO_2	1-hr	0.25	0.14	0.11	207
		CO	1-hr	20	10	10	11,500
		CO	8-hr	9	5.8	3.2	3,674
6	West San Fernando Valley	NO_2	1-hr	0.25	0.11	0.14	264
		CO	1-hr	20	11	9	10,350
		CO	8-hr	9	9.8	0.45	517
7	East San Fernando Valley	NO_2	1-hr	0.25	0.26	0.01	19
		CO	1-hr	20	8	12	13,800
		CO	8-hr	9	6.1	2.9	3,329

a) The current NO2 State AAQS is 0.18 ppm as of March 20, 2008. Table B-1 was prepared when the NO2 State AAQS was 0.25 ppm.
b) The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

Table B-1 (Continued)
Difference in Concentration for the 2000-2002 Period

Source/ Receptor Area	Air Quality Site	Pollutant	Averaging Time	AAQS[a] (ppm)	Observed[b] (ppm)	Difference (ppm)	Difference (ug/m^3)
8	West San Gabriel Valley	NO_2	1-hr	0.25	0.17	0.08	151
		CO	1-hr	20	9	11	12,650
		CO	8-hr	9	7.4	1.6	1,837
9	East San Gabriel Valley 1	NO_2	1-hr	0.25	0.15	0.1	189
		CO	1-hr	20	5	15	17,250
		CO	8-hr	9	4.9	4.1	4,707
9	East San Gabriel Valley 2	NO_2	1-hr	0.25	0.13	0.12	226
		CO	1-hr	20	5	15	17,250
		CO	8-hr	9	3.1	5.9	6,773
10	Pomona/Walnut Valley	NO_2	1-hr	0.25	0.14	0.11	207
		CO	1-hr	20	7	13	14,950
		CO	8-hr	9	4.9	4.1	4,707
11	South San Gabriel Valley	NO_2	1-hr	0.25	0.14	0.11	207
		CO	1-hr	20	7	13	14,950
		CO	8-hr	9	5.3	3.7	4,248
12	South Central LA County 1	NO_2	1-hr	0.25	0.15	0.1	189
		CO	1-hr	20	16	4	4,600
		CO	8-hr	9	10.1	0.45	517

a) The current NO2 State AAQS is 0.18 ppm as of March 20, 2008. Table B-1 was prepared when the NO2 State AAQS was 0.25 ppm.
b) The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

Table B-1 (Continued)
Difference in Concentration for the 2000-2002 Period

Source/ Receptor Area	Air Quality Site	Pollutant	Averaging Time	AAQS[a] (ppm)	Observed[b] (ppm)	Difference (ppm)	Difference (ug/m^3)
12	South Central LA County 2	NO_2	1-hr	0.25	0.11	0.14	264
		CO	1-hr	20	13	7	8,050
		CO	8-hr	9	9.5	0.45	517
13	Santa Clarita Valley	NO_2	1-hr	0.25	0.1	0.15	283
		CO	1-hr	20	6	14	16,100
		CO	8-hr	9	4.9	4.1	4,707
16	North Orange County	NO_2	1-hr	0.25	0.13	0.12	226
		CO	1-hr	20	14	6	6,900
		CO	8-hr	9	6.1	2.9	3,329
17	Central Orange County	NO_2	1-hr	0.25	0.13	0.12	226
		CO	1-hr	20	8	12	13,800
		CO	8-hr	9	6.8	2.2	2,526
18	North Coastal Orange County	NO_2	1-hr	0.25	0.11	0.14	264
		CO	1-hr	20	8	12	13,800
		CO	8-hr	9	6.3	2.7	3,100
19	Saddleback Valley 1	NO_2	1-hr	0.25	0	--	264
		CO	1-hr	20	5	15	17,250
		CO	8-hr	9	2.3	6.7	7,692

a) The current NO2 State AAQS is 0.18 ppm as of March 20, 2008. Table B-1 was prepared when the NO2 State AAQS was 0.25 ppm.
b) The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

Table B-1 (Continued)
Difference in Concentration for the 2000-2002 Period

Source/ Receptor Area	Air Quality Site	Pollutant	Averaging Time	AAQS[a] (ppm)	Observed[b] (ppm)	Difference (ppm)	Difference (ug/m^3)
19	Saddleback Valley 2	NO_2	1-hr	0.25	0	--	264
		CO	1-hr	20	4	16	18,400
		CO	8-hr	9	3.6	5.4	6,199
22	Norco/Corona	NO_2	1-hr	0.25	0	--	189
		CO	1-hr	20	8	12	13,800
		CO	8-hr	9	4.3	4.7	5,396
23	Metropolitan Riverside County 1	NO_2	1-hr	0.25	0.15	0.1	189
		CO	1-hr	20	8	12	13,800
		CO	8-hr	9	4.3	4.7	5,396
23	Metropolitan Riverside County 2	NO_2	1-hr	0.25	0	--	189
		CO	1-hr	20	8	12	13,800
		CO	8-hr	9	4.5	4.5	5,166
24	Perris Valley	NO_2	1-hr	0.25	0	--	189
		CO	1-hr	20	8	12	13,800
		CO	8-hr	9	4.5	4.5	5,166
25	Lake Elsinore	NO_2	1-hr	0.25	0.09	0.16	302
		CO	1-hr	20	4	16	18,400
		CO	8-hr	9	2	7	8,036

a) The current NO2 State AAQS is 0.18 ppm as of March 20, 2008. Table B-1 was prepared when the NO2 State AAQS was 0.25 ppm.
b) The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

Table B-1 (Continued)
Difference in Concentration for the 2000-2002 Period

Source/ Receptor Area	Air Quality Site	Pollutant	Averaging Time	AAQS[a] (ppm)	Observed[b] (ppm)	Difference (ppm)	Difference (ug/m^3)
29	Banning Airport	NO_2	1-hr	0.25	0.24	0.01	19
		CO	1-hr	20	3	17	19,550
		CO	8-hr	9	0	9	10,332
30	Coachella Valley 1**	NO_2	1-hr	0.25	0.1	0.15	283
		CO	1-hr	20	3	17	19,550
		CO	8-hr	9	1.6	7.4	8,495
30	Coachella Valley 2**	NO_2	1-hr	0.25	0.06	0.19	358
		CO	1-hr	20	3	17	19,550
		CO	8-hr	9	2.1	6.9	7,921
32	Northwest San Bernardino Valley	NO_2	1-hr	0.25	0.15	0.1	189
		CO	1-hr	20	4	16	18,400
		CO	8-hr	9	2.6	6.4	7,347
33	Southwest San Bernardino Valley	NO_2	1-hr	0.25	0	--	189
		CO	1-hr	20	4	16	18,400
		CO	8-hr	9	2.6	6.4	7,347
34	Central San Bernardino Valley 1	NO_2	1-hr	0.25	0.13	0.12	226
		CO	1-hr	20	4	16	18,400
		CO	8-hr	9	2.6	6.4	7,347

a) The current NO2 State AAQS is 0.18 ppm as of March 20, 2008. Table B-1 was prepared when the NO2 State AAQS was 0.25 ppm.
b) The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

Table B-1 (Concluded)
Difference in Concentration for the 2000-2002 Period

Source/ Receptor Area	Air Quality Site	Pollutant	Averaging Time	AAQS[a] (ppm)	Observed[b] (ppm)	Difference (ppm)	Difference (ug/m^3)
34	Central San Bernardino Valley 2	NO_2	1-hr	0.25	0.11	0.14	264
		CO	1-hr	20	5	15	17,250
		CO	8-hr	9	4.3	4.7	5,396
35	East San Bernardino Valley	NO_2	1-hr	0.25	0	--	264
		CO	1-hr	20	5	15	17,250
		CO	8-hr	9	4.3	4.7	5,396
37	Central San Bernardino Mountains	NO_2	1-hr	0.25	0	--	264
		CO	1-hr	20	5	15	17,250
		CO	8-hr	9	4.3	4.7	5,396
38	East San Bernardino Mountains	NO_2	1-hr	0.25	0	--	264
		CO	1-hr	20	5	15	17,250
		CO	8-hr	9	4.3	4.7	5,396

a) The current NO2 State AAQS is 0.18 ppm as of March 20, 2008. Table B-1 was prepared when the NO2 State AAQS was 0.25 ppm.
b) The peak concentrations in this appendix were the most recent concentrations available at the time the LSTs were developed. The CEQA practitioner should refer to the peak concentrations in the most recent three-year period.

APPENDIX C

LOCALIZED SIGNIFICANCE THRESHOLD TABLES

The LST mass rate look-up tables are updated annually with the most recent air quality monitoring data. The latest version of the tables can be downloaded from the SCAQMD website at http://www.aqmd.gov/ceqa/handbook/LST/LST.html. Original hard copies of the mass rate LST look-up tables can be obtained through the SCAQMD Public Information Center at the Diamond Bar headquarters or by calling (909) 396-2039.