

Air Quality Assessment Report
for the
Los Angeles County Metropolitan Transportation Authority
Wilshire Bus Rapid Transit Project

County of Los Angeles, California

April 2010

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Acronyms and Abbreviations

°F	Fahrenheit
Caltrans	California Department of Transportation
CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
FHWA	Federal Highway Administration
GWP	Global Warming Potential
HRA	health risk assessment
LOS	level of service
LST	Localized Significance Threshold
MATES III	Multiple Air Toxics Exposure Study III
MPO	metropolitan planning organization
NO _x	nitrogen oxides
O ₃	ozone
RCPG	Regional Comprehensive Plan and Guide
ROG	reactive organic gases
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
SCAG	Southern California Association of Governments
SIP	State Implementation Plan
SRA	Source Receptor Area
TAC	toxic air contaminant
V/C	vehicle to capacity
VMT	vehicle miles traveled

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Air Quality Assessment Report for the Wilshire Bus Rapid Transit Project

Executive Summary

This report provides an analysis of potential air quality impacts related to the Los Angeles County Metropolitan Transportation Authority (LACMTA) Wilshire Bus Rapid Transit (BRT) Project along a 12.5-mile portion of Wilshire Boulevard, between downtown Los Angeles and the City of Santa Monica.

All analyses have been conducted to comply with the South Coast Air Quality Management District (SCAQMD) requirements for air quality assessments to satisfy California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and Transportation Conformity Determination requirements. The analyses findings are as follows.

- Project emissions during construction and operations would remain below SCAQMD regional and localized mass emissions thresholds, as well as General Conformity thresholds.
- The proposed project's carbon monoxide (CO) emissions during long-term project operations would not create any new or exacerbate any existing CO hot spots.
- The proposed project would be consistent with air quality policies set forth by the SCAQMD and the Southern California Association of Governments (SCAG) as presented in the region's most recent Air Quality Management Plan (AQMP).
- The proposed project would not conflict with the State's goals of reducing GHG emissions to 1990 levels by 2020 relative to construction emissions.
- The proposed project would not result in a cumulative air quality impact.
- The proposed project would be exempt from the requirement to determine transportation conformity per 40 CFR 93.126.

1.0 Introduction

1.1 Purpose

ICF International (ICF) was retained by the Los Angeles County Metropolitan Transportation Authority (LACMTA) to evaluate the potential air quality impacts that may occur due to the construction and operations of the proposed Wilshire Bus Rapid Transit (BRT) Project. The project is along a 12.5-mile corridor of Wilshire Boulevard between downtown Los Angeles and the City of Santa Monica.

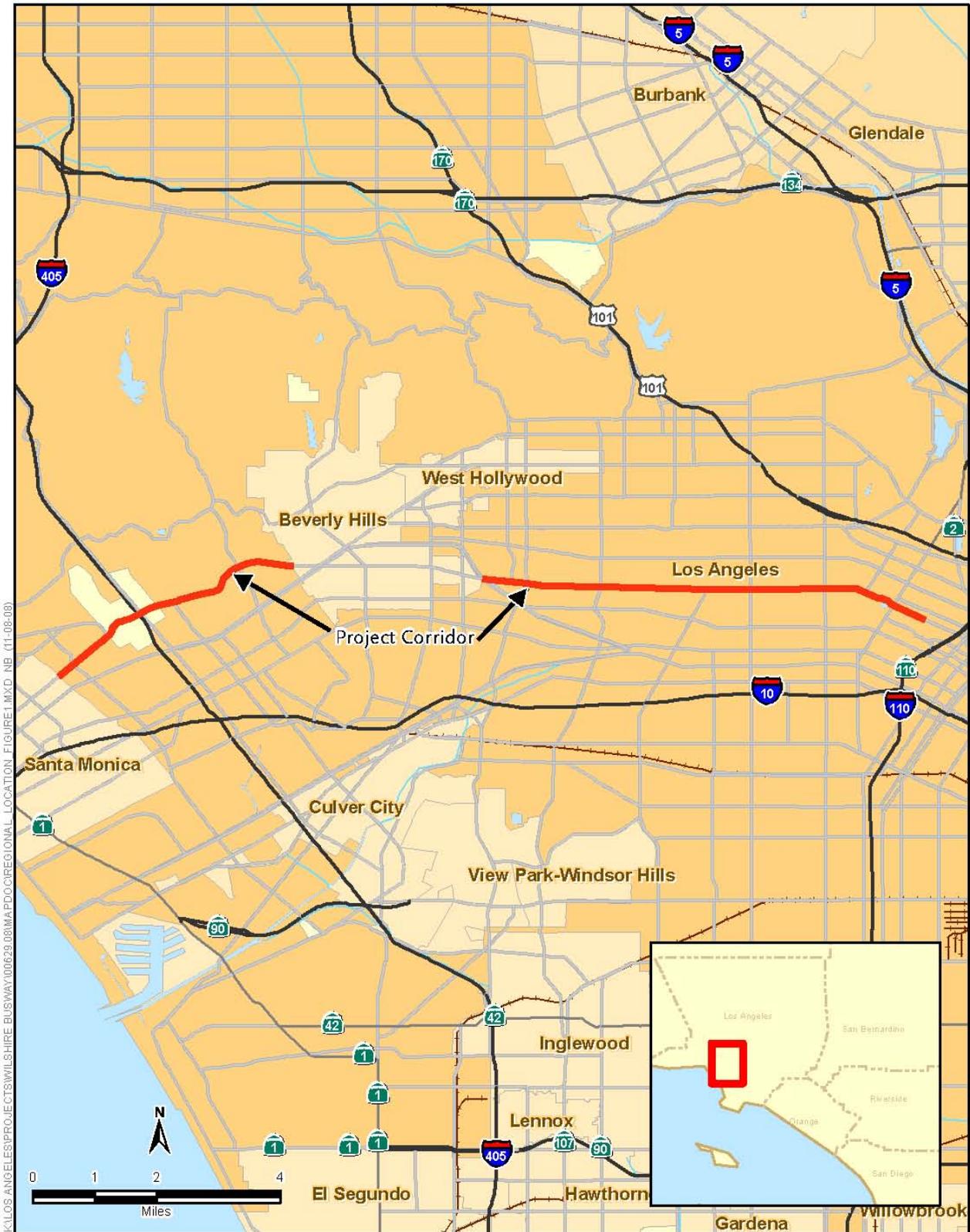
1.2 Project Site Location

Wilshire Boulevard, the project corridor, traverses five community plan areas within the City of Los Angeles. The community plan areas that encompass the project corridor include Westlake, Wilshire, Westwood, West Los Angeles, and Brentwood-Pacific Palisades. The project corridor extends 12.5 miles along Wilshire Boulevard between just west of downtown Los Angeles at Valencia Street, to the east, and the eastern boundary of the City of Santa Monica at Centinela Avenue, to the west, excluding the portion of Wilshire Boulevard within the City of Beverly Hills. The majority of the project falls within the densely populated mid-western area of the City of Los Angeles. A small portion of the project corridor, between Veteran Avenue and Federal Avenue, near the Veterans Administration facilities, is within Los Angeles County jurisdiction. The Wilshire Corridor is a densely populated, highly developed, inner urban region with extensive commercial and nearby residential uses. Regional access to the Wilshire Corridor is provided by a large number of intersecting streets, including Alvarado Street, Hoover Street, Vermont Avenue, Western Avenue, Crenshaw Boulevard, Highland Avenue, La Brea Avenue, Fairfax Avenue, San Vicente Boulevard, La Cienega Boulevard, Robertson Boulevard, Santa Monica Boulevard, Beverly Glen Boulevard, Westwood Boulevard, Overland Avenue, Sepulveda Boulevard, the San Diego Freeway (Interstate 405), and Centinela Avenue. The project site location, in a regional and local context, is shown in Figures 1 and 2 respectively.

1.3 Project Description

A number of improvements are required as part of the proposed project. These general improvements include restriping of traffic lanes, as necessary; conversion of existing curb lanes to weekday peak period bus lanes in each direction; upgrade of the existing transit signal priority system; selective street widening; street reconstruction/repaving in select areas; and installation of traffic/transit signage and pavement markings, as necessary, to implement dedicated weekday peak period bus lanes.

Figure 1 – Regional Location



K:\LOS ANGELES\PROJECTS\WILSHIRE BUSWAY\00629_08\MAPS\REGIONAL_LOCATION_FIGURE1.MXD, NB, 11-08-09

SOURCE: ESRI Streetmap USA (2007)

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A variety of activities are proposed along the entire length of the project corridor within the City's boundaries (approximately 9.1 miles). Most of the existing curb lanes on Wilshire Boulevard are within the City of Los Angeles and would be "converted" to a bus and right-turn only operation during the weekday peak periods (7 a.m. to 9 a.m. and 4 p.m. to 7 p.m.). In these segments, the curb lanes would be repaired or reconstructed, where necessary, and restriped and signed as peak period bus lanes. In other areas, curbside bus lanes would be added as new lanes to Wilshire Boulevard through some selective street widening and jut-out removal. Upgrades to the existing transit signal priority system would also be implemented, including the following: (1) addition of bus signal priority at intersections with near-side bus stops (a recently developed and successfully tested concept); (2) increase in maximum available time for transit signal priority from 10 percent to 15 percent of the traffic signal cycle at minor intersections; and, (3) reduction in the number of traffic signal recovery cycles from two to one at key intersections along the corridor.

A portion of the project corridor is under County jurisdiction, between Veteran Avenue and Federal Avenue (approximately 0.8 miles) near the Veterans Administration facilities. Key elements of the County's project scope include widening Wilshire Boulevard between Federal Avenue and Bonsall Avenue, reduction of adjacent sidewalks to a uniform width of 10 feet, traffic lane restriping, adjustments to geometrics and traffic signal, signage and markings, and a 470-foot extension of an eastbound left-turn pocket at Sepulveda Boulevard.

The 2.6 mile-segment of Wilshire Boulevard within the City of Beverley Hills is excluded from this project.

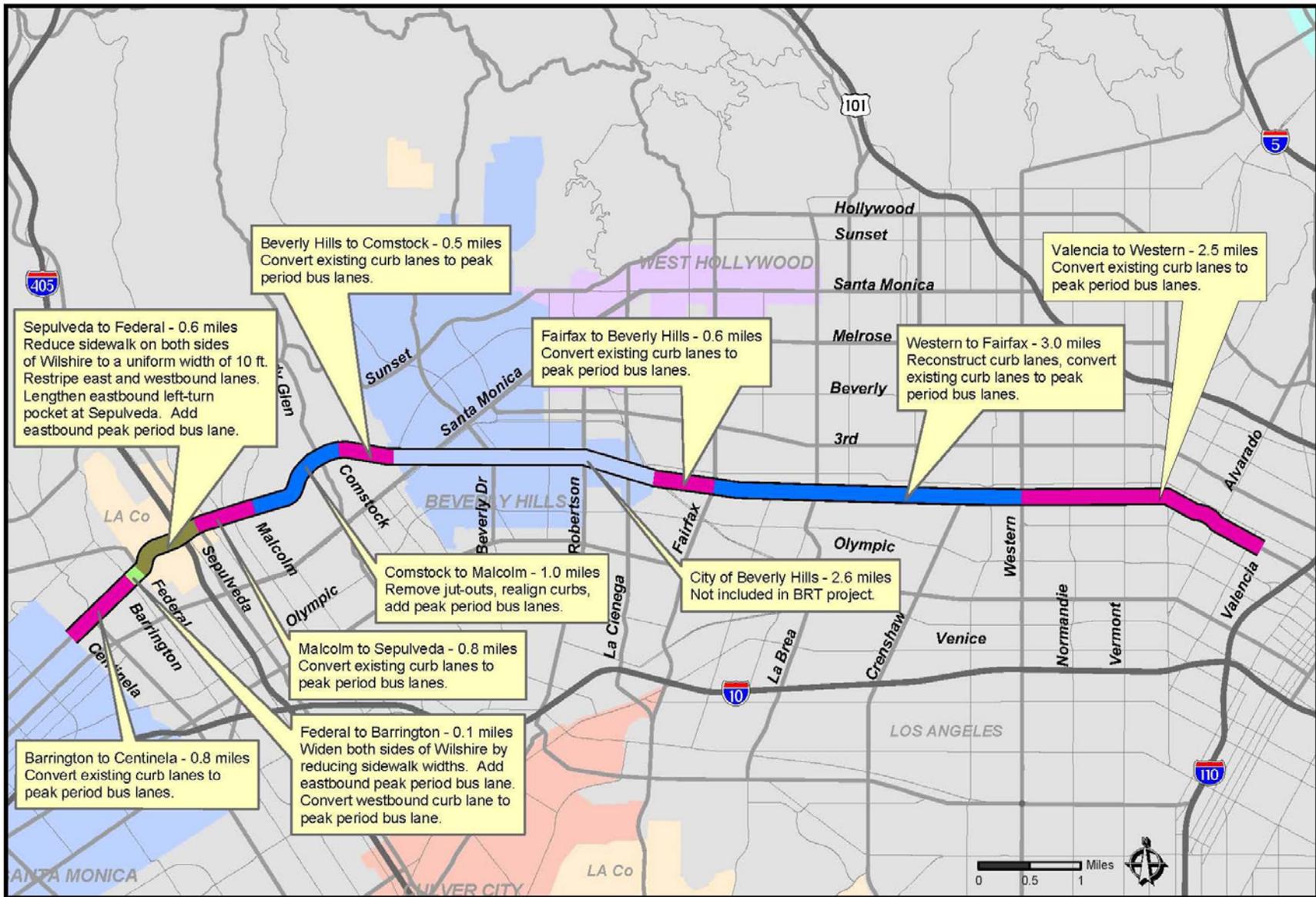
Geographically, the key elements of the proposed project can be discussed based upon specific segments of the 12.5-mile Wilshire Boulevard Corridor under consideration. These improvements are presented in Figure 3, which shows the different segments of Wilshire Boulevard between Valencia Street to the east and Centinela Avenue to the west, excluding the portion in the City of Beverly Hills. Proposed in both the eastbound and westbound directions, from east to west, these project segments can be summarized as follows:

- From Valencia Street to Western Avenue (approximately 2.5 miles), existing curb lanes would be converted to peak period bus lanes.
- From Western Avenue to Fairfax Avenue (approximately 3.0 miles), curb lanes would be reconstructed/resurfaced and converted to peak period bus lanes. The curb lanes in this segment have deteriorated to the point that both buses and vehicles seldom use the lanes because of extreme rough and uneven pavement conditions. Reconstruction of the roadway base (below the pavement surface) and curb and gutters, where damaged, would not only allow buses to consistently use the curb lanes but also improve the traffic capacity of the two adjacent lanes (in each direction) by moving buses from the curb-adjacent lanes to the curb lanes, thereby improving both the vehicular and transit levels of service in this segment.
- From Fairfax Avenue to the Beverly Hills city limits at the intersection of San Vicente Boulevard and Wilshire Boulevard (approximately 0.6 mile),

existing curb lanes would be converted to peak period bus lanes. The lanes in this segment need only minor surface repairs.

- Within the Beverly Hills city limits (2.6 miles), no bus lanes would be implemented.
- From the Beverly Hills city limits, west of the intersection of Wilshire Boulevard and Santa Monica Boulevard, to Comstock Avenue (approximately 0.5 mile), existing curb lanes would be converted to peak period bus lanes.
- From Comstock Avenue to Malcolm Avenue (approximately 1.0 mile), various curb improvements, including jut-out removal and realignment of curbs, would be necessary. This would allow the realignment of curbs to create new curb lanes, thereby adding peak period bus lanes. A number of parking spaces would be removed in this segment as a result of the removal of the curb jut-outs.
- From Malcolm Avenue to Sepulveda Boulevard (approximately 0.8 mile), existing mixed flow curb lanes would be converted to peak period bus lanes.
- From Sepulveda Boulevard to Bonsall Avenue (approximately 0.2 mile), no bus lanes would be implemented. However, at Sepulveda Boulevard, the eastbound left-turn pocket would be lengthened by approximately 470 feet to accommodate a greater number of vehicles that are currently queued in the No. 1 eastbound traffic lane, resulting in full use of the No. 1 lane for through traffic movements.
- From Bonsall Avenue to Federal Avenue (approximately 0.4 mile), in order to accommodate an eastbound peak period bus lane, the sidewalk widths on both sides of Wilshire Boulevard would be reduced to a uniform width of 10 feet. Both east and westbound lanes would be restriped. Wilshire Boulevard between Interstate 405 and Federal Avenue is bordered by the Veterans Administration (VA) property. The sidewalk widths on both sides of Wilshire Boulevard in this segment vary between 10 and 15 feet.
- From Federal Avenue to Barrington Avenue (approximately 0.1 mile), both sides of Wilshire Boulevard would be widened by reducing the sidewalk widths on the north and south sides, allowing restriping of the street and creation of a new eastbound peak period bus lane and conversion of the existing westbound curb lane to a peak period bus lane. The intersection of Wilshire Boulevard and Federal Avenue is extremely congested in the eastbound direction. The widening of this two-block segment would allow buses to pass safely and quickly through the intersection of Wilshire Boulevard and Federal Avenue and provide a contiguous eastbound bus lane from Centinela Avenue to Bonsall Avenue.
- From Barrington Avenue to Centinela Avenue (approximately 0.8 mile), existing curb lanes would be converted to peak period bus lanes.

Figure 3 – Proposed Project Corridor Plan



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Alternative A – Truncated Project Without Jut-out Removal

This alternative would include the development of an 8.7-mile bus lane from the Wilshire/S. Park View intersection to the Wilshire/Centinela intersection. This alternative would eliminate the bus lane from mid-block Veteran Avenue/Gayley Avenue to Sepulveda Boulevard, totaling 0.31 mile. Additionally, this alternative would eliminate the jut-out removal between Comstock and Malcolm Avenue (1.0 miles). The existing traffic lane would be converted to a bus lane in each direction between Comstock and Malcolm Avenue. In addition, Alternative A includes an additional 1.8 miles of curb lane reconstruction/resurfacing along Wilshire Boulevard.

The three key differences between this alternative and the proposed project are summarized, from east to west (in both the eastbound and westbound directions), as follows:

- Elimination of the bus lane between Valencia Street and S. Park View Street;
- Retention of the jut-outs between Comstock Avenue and Malcolm Avenue;
- Elimination of the bus lane from approximately 300 feet east of Veteran Avenue to the I-405 northbound ramps; and
- Additional reconstruction and resurfacing of curb lanes between Fairfax Avenue and San Vicente Boulevard and between the western boundary of the City of Beverly Hills to Westholme Avenue.

Figure 4 shows the improvements proposed under Alternative A from S. Park View Street on the eastern end to Centinela Avenue on the western end.

2.0 Environmental Setting

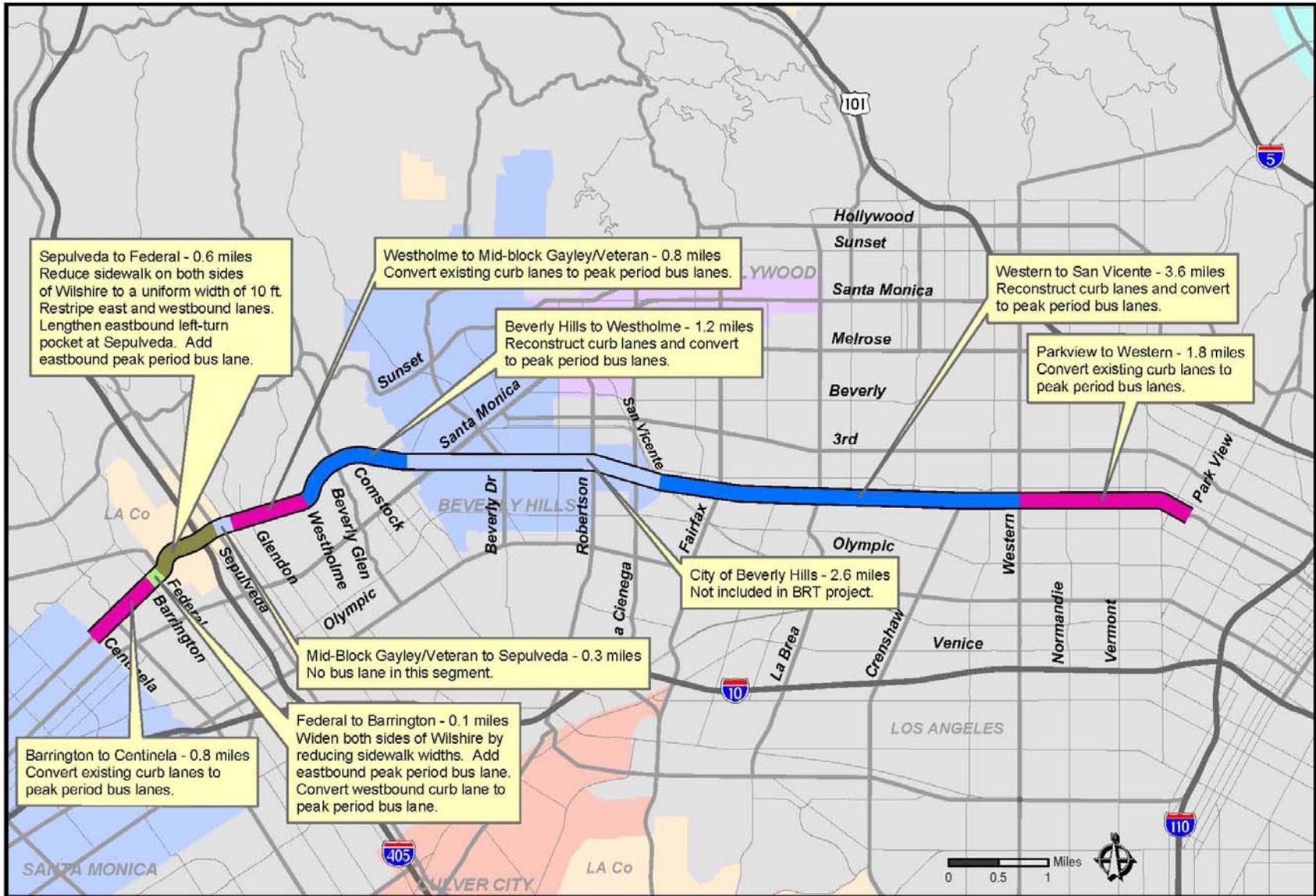
This section provides a description of relevant air pollutants and provides a discussion of the existing regulatory and physical setting as they relate to air quality. This assessment includes a discussion of applicable significance criteria and analysis methodologies outlined in the following SCAQMD guidance documents:

- CEQA Air Quality Handbook (1993),
- Localized Significance Threshold Methodology for CEQA Evaluations (2003), and
- Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology (2006).

Impacts under NEPA were evaluated consistent with the U. S. Environmental Protection Agency (USEPA) Transportation Conformity Rule.

Based on these above-referenced guidance documents, this assessment evaluates the short-term construction period and long-term operational period impacts on localized and regional air quality that would result with development of the proposed project.

Figure 4 – Alternative A - Truncated Project Without Jut-Out Removal



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2.1 Description of Relevant Air Pollutants

Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. These regulated air pollutants are known as “criteria air pollutants” and are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO₂), and most fine particulate matter (PM₁₀, PM_{2.5}), including lead (Pb) and fugitive dust, are primary air pollutants. Of these, CO, SO₂, PM₁₀, and PM_{2.5} are criteria pollutants. ROG and NO_x are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and nitrogen dioxide (NO₂) are the principal secondary pollutants. Presented below is a description of each of the primary and secondary criteria air pollutants and their known health effects.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation.¹

Reactive Organic Gases (ROG) are compounds made up primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of ROG are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG but rather by reactions of ROG to form secondary pollutants such as ozone.²

Nitrogen Oxides (NO_x) serve as integral participants in the process of photochemical smog production. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO₂). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO₂ is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO_x acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

Nitrogen Dioxide (NO₂) is a by-product of fuel combustion. The principal form of NO₂ produced by combustion is NO, but NO reacts with oxygen to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO₂ is only potentially irritating. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis.

¹ South Coast Air Quality Management District (SCAQMD). 2005. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning.

² Ibid.

Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 parts per million (ppm). NO₂ absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO₂ also contributes to the formation of PM₁₀. NO_x are also precursors to the formation of both O₃ and PM_{2.5}.^{3,4}

Sulfur Dioxide (SO₂) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. Fuel combustion is the primary source of SO₂. At high concentrations SO₂ may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO₂ may do greater harm by injuring lung tissue. A primary source of SO₂ emissions is high sulfur content coal. Gasoline and natural gas have very low sulfur content and hence do not release significant quantities of SO₂.⁵

Particulate Matter (PM) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized. Inhalable coarse particles, or PM₁₀, include the particulate matter with a diameter of 10 microns (10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or PM_{2.5}, have a diameter of 2.5 microns (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind on arid landscapes also contributes substantially to local particulate loading. Both PM₁₀ and PM_{2.5} may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems.⁶

Fugitive dust primarily poses two public health and safety concerns. The first concern is that of respiratory problems attributable to the particulates suspended in the air. The second concern is that of motor vehicle accidents caused by reduced visibility during severe wind conditions. Fugitive dust may also cause significant property damage during strong windstorms by acting as an abrasive material agent (much like sandblasting).⁷

Ozone (O₃), or smog, is one of a number of substances called photochemical oxidants that are formed when ROG and NO_x (both by-products of the internal combustion engine) react with sunlight. O₃ is present in relatively high concentrations in the South Coast Air Basin (Basin or SCAB), and the damaging effects of photochemical smog are generally related to the concentrations of O₃. O₃ poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Additionally, O₃ has been tied to crop damage, typically in

³ Ibid; South Coast Air Quality Management District. 2007 *Air Quality Management Plan*.

⁴ South Coast Air Quality Management District (SCAQMD). 2005. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning.

⁵ Ibid.

⁶ Ibid.

⁷ Ibid.

the form of stunted growth and premature death. O₃ can also act as a corrosive, resulting in property damage such as the degradation of rubber products.⁸

Toxic Air Contaminants

With respect to criteria pollutants, federal and State ambient air quality standards (AAQS) represent the exposure level (with an adequate margin of safety) deemed safe for humans. No AAQS exist for toxic air contaminants (TACs), because there is no exposure level deemed safe for humans. Pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, the California Air Resources Board (ARB) has consistently found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risk they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor, called a Hazard Index, is used to evaluate risk. In the early 1980s, ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Toxic Air Contaminant Identification and Control Act (AB 1807, ARB 1999) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, ARB 1999) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

In August 1998, ARB identified particulate emissions from diesel-fueled engines as TACs. In September 2000, ARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan is to reduce diesel PM₁₀ emissions and the associated health risk by 75% in 2010 and by 85% by 2020.

Greenhouse Gases

Greenhouse gases (GHG) include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases. Presented below is a description of each GHG and their known sources.

Carbon Dioxide (CO₂) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

⁸ South Coast Air Quality Management District (SCAQMD). 2005. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning.

Methane (CH₄) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.⁹

Nitrous Oxide (N₂O) is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.¹⁰

Fluorinated Gases are synthetic, strong greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases.¹¹

- *Chlorofluorocarbons (CFCs)* are greenhouse gases covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are being replaced by other compounds that are greenhouse gases covered under the Kyoto Protocol.
- *Perfluorocarbons (PFCs)* are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF₄] and perfluoroethane [C₂F₆]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they are strong greenhouse gases.
- *Sulfur Hexafluoride (SF₆)* is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF₆ is a strong greenhouse gas used primarily in electrical transmission and distribution systems as a dielectric.¹²
- *Hydrochlorofluorocarbons (HCFCs)* contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent than CFCs. They have been introduced as temporary replacements for CFCs and are also greenhouse gases.
- *Hydrofluorocarbons (HFCs)* contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid.

¹² An electrical insulator that is highly resistant to the flow of an electric current.

HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong greenhouse gases.

2.2 Regulatory Setting

A number of statutes, regulations, plans, and policies have been adopted that address air quality issues. The project site and vicinity are subject to air quality regulations developed and implemented at the federal, State, and local levels. At the federal level, the USEPA is responsible for implementation of the federal Clean Air Act (CAA). Some portions of the CAA (e.g., certain mobile-source and other requirements) are implemented directly by the USEPA. Other portions of the CAA (e.g., stationary-source requirements) are implemented by state and local agencies.

Federal Clean Air Act

The CAA was first enacted in 1955 and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes federal air quality standards, known as National Ambient Air Quality Standards (NAAQS), and specifies future dates for achieving compliance. The CAA also mandates that the state submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met. The City of Los Angeles is within the Basin and, as such, is in an area designated a nonattainment area for certain pollutants that are regulated under the CAA.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the CAA that would most substantially affect the development of the proposed project include Title I (Nonattainment Provisions) and Title II (Mobile-Source Provisions).

Title I provisions were established with the goal of attaining the NAAQS for criteria pollutants. Table 1 shows the NAAQS currently in effect for each criteria pollutant. The NAAQS were amended in July 1997 to include an 8-hour standard for ozone (O₃) and adopt a NAAQS for fine particulate matter (PM_{2.5}). The Basin fails to meet national standards for O₃, inhalable particulate matter (PM₁₀, and PM_{2.5}) and therefore is considered a federal nonattainment area for those pollutants. Table 2 lists each criteria pollutant and their related attainment status.

Table 1. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS ^a	NAAQS ^b
Ozone (O ₃)	1 hour	0.09 ppm ^c	--
	8 hour	0.070 ppm	0.075 ppm
Carbon Monoxide (CO)	1 hour	20.0 ppm	35.0 ppm
	8 hour	9.0 ppm	9 ppm
Nitrogen Dioxide (NO ₂)	1 hour	0.18 ppm	0.100 ppm
	Annual	0.030 ppm	0.053 ppm
Sulfur Dioxide (SO ₂)	1 hour	0.25 ppm	--
	3 hour	--	0.5 ppm
	24 hour	0.04 ppm	0.14 ppm
	Annual	--	0.030 ppm
Respirable Particulate Matter (PM ₁₀)	24 hour	50 µg/m ^{3c}	150 µg/m ³
	Annual	20 µg/m ³	--
Fine Particulate Matter (PM _{2.5})	24 hour	--	35 µg/m ³
	Annual	12 µg/m ³	15.0 µg/m ³
Sulfates	24 hour	25 µg/m ³	--
Lead (Pb)	30 day	1.5 µg/m ³	--
	Calendar quarter	--	1.5 µg/m ³
	Rolling 3-Month Average	--	0.15 µg/m ³
Hydrogen Sulfide	1 hour	0.03 ppm	--
Vinyl Chloride	24 hour	0.01 ppm	--

Notes:

^aThe CAAQS for O₃, CO, SO₂ (1-hour and 24-hour), NO₂, PM₁₀, and PM_{2.5} are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

^bThe NAAQS, other than O₃ and those based on annual averages, are not to be exceeded more than once a year. The O₃ standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

^cppm = parts per million by volume; µg/m³ = micrograms per cubic meter

Source: California Air Resources Board, February 16, 2010.

Table 2. Federal and State Attainment Status for South Coast Air Basin

Pollutants	Federal Classification	State Classification
O ₃ (1-hour standard)	--	Nonattainment
O ₃ (8-hour standard)	Nonattainment, Severe-17	--
PM ₁₀	Serious Nonattainment	Nonattainment
PM _{2.5}	Nonattainment	Nonattainment
CO	Attainment/Maintenance	Attainment
NO ₂	Unclassified/Attainment	Attainment
SO ₂	Attainment	Attainment

Source: California Air Resources Board, compiled by ICF International, January 2010.

Federal Climate Change Policy

Twelve U.S. states and cities (including California), in conjunction with several environmental organizations, sued to force the USEPA to regulate GHGs as a pollutant pursuant to the federal Clean Air Act (CAA) (Massachusetts vs. Environmental Protection Agency et al. [U.S. Supreme Court No. 05–1120; argued November 29, 2006; decided April 2, 2007]). The court ruled that the plaintiffs had standing to sue, that GHGs fit within the CAA’s definition of a pollutant, and that the USEPA’s reasons for not regulating GHGs were insufficiently grounded in the CAA. This prompted the Administrator of the USEPA to sign a proposal April 24, 2009. The proposal contained two distinct findings regarding greenhouse gases under section 202(a) of the CAA.

The Administrator is proposing to find that the current and projected concentrations of the mix of six key greenhouse gases (carbon dioxide [CO₂], methane [CH₄], nitrous oxide [N₂O], hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF₆]) in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the Endangerment Finding.

The Administrator is further proposing to find that the combined emissions of CO₂, CH₄, N₂O, and HFCs from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key greenhouse gases and hence to the threat of climate change. This is referred to as the Cause or Contribute Finding.

California Clean Air Act

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the State to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CAAQS incorporate additional standards for most of the criteria pollutants and set standards for other

pollutants recognized by the State. In general, the California standards are more health protective than the corresponding NAAQS. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The Basin is in compliance with these California standards for sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. Table 1 details the current NAAQS and CAAQS, while Table 2 provides the Basin's attainment status with respect to federal and State standards.

California Climate Change Policy

California's major initiatives for reducing climate change or greenhouse gas (GHG) emissions are outlined in the 2006 legislation Assembly Bill 32 (AB 32), 2005 Executive Order S-3-05, and a 2004 ARB regulation to reduce passenger car GHG emissions (AB 1493). These efforts aim at reducing GHG emissions to 1990 levels by 2020 - a reduction of about 25 percent, and then an 80 percent reduction below 1990 levels by 2050.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this executive order is to reduce California's GHG emissions to (1) 2000 levels by 2010, (2) 1990 levels by the 2020, and (3) 80percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of AB 32, the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that ARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

In response to the State's efforts to reduce GHG emissions, the Secretary of the California Environmental Protection Agency (Cal/EPA) created the Climate Action Team (CAT), which, in March 2006, published the first Climate Action Team Report to Governor Schwarzenegger and the Legislature (the "2006 CAT Report"). The 2006 CAT Report identifies a recommended list of strategies that the State could pursue to reduce climate change greenhouse gas emissions. These are strategies that could be implemented by various State agencies to ensure that the Governor's targets are met and can be met with existing authority of the State agencies. Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

In consultation with ARB and California Public Utilities Commission (CPUC), the California Energy Commission (CEC) is currently establishing a GHG emission performance standard for local, public-owned electric utilities (pursuant to Senate Bill [SB] 1368). This standard will limit the rate of GHG emissions to a level that is no higher than the rate of emissions of GHGs for combined-cycle natural gas base load generation.

In October 2007, Governor Schwarzenegger signed SB 97, which requires the Governor's Office of Planning and Research (OPR) to prepare CEQA guidelines for the mitigation of GHG emissions. OPR prepared these guidelines and transmitted them to the Natural Resources Agency on April 13, 2009. On July 3,

2009, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting these amendments pursuant to Public Resources Code section 21083.05. Having reviewed and considered all comments received, the Natural Resources Agency has revised the text of the proposed amendments. From October 23, 2009 to November 10, 2009, the Natural Resources Agency held a public comment period on the proposed revisions to the CEQA Guidelines amendments. The Natural Resources Agency is currently reviewing and considering all comments received during the comment period relating to the proposed revisions. OPR and the Natural Resources Agency are required to periodically review the guidelines to incorporate new information or criteria adopted by the ARB pursuant to AB 32.

South Coast Air Quality Management District

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles. This area includes all of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The SCAB is a subregion of the SCAQMD jurisdiction. While air quality in this area has improved, the SCAB requires continued diligence to meet air quality standards.

SCAQMD has adopted a series of AQMPs to meet the CAAQS and NAAQS. These plans require, among other emissions-reducing activities, control technology for existing sources; control programs for area sources and indirect sources; a SCAQMD permitting system designed to allow no net increase in emissions from any new or modified (i.e., previously permitted) emission sources; and transportation control measures.

The SCAQMD adopted a comprehensive AQMP update, the 2007 Air Quality Management Plan for the SCAB on June 1, 2007 (South Coast Air Quality Management District 2007). The 2007 AQMP addresses several federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2007 AQMP builds upon the approaches taken in the 2003 AQMP for the SCAB for the attainment of the federal air quality standards. Additionally, the air plan highlights the significant amount of reductions necessary and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet federal criteria pollutant standards within the timeframes allowed under the federal CAA. After the 2007 AQMP is approved by the ARB, it will be sent to the USEPA for its final approval. Until the USEPA approves the 2007 AQMP, the 2003 AQMP remains in effect.

SCAQMD adopts rules and regulations to implement portions of the AQMP. Several of these rules may apply to construction or operation of the proposed project. For example, SCAQMD Rule 403 requires implementing the best available fugitive dust control measures during active operations capable of generating fugitive dust emissions from on-site earth-moving activities, construction/demolition activities, and construction equipment travel on paved

and unpaved roads. SCAQMD has published a handbook (CEQA Air Quality Handbook 1993) to help local governments analyze and mitigate project-specific air quality impacts. This handbook provides standards, methodologies, and procedures for conducting air quality analyses in environmental impact reports and was used extensively in the preparation of this report. In addition, SCAQMD has published two additional documents (Localized Significance Threshold Methodology for CEQA Evaluations in 2003, and Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology in 2006) that provide guidance in evaluating localized effects from mass emissions during construction. Both were used in the preparation of this report.

Regional Comprehensive Plan and Guide

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties. It addresses regional issues relating to transportation, economy, community development, and environment. SCAG is the federally designated metropolitan planning organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the Regional Comprehensive Plan and Guide (RCPG) for the SCAG region, which includes Growth Management and Regional Mobility chapters, which form the basis for the land use and transportation components of the AQMP. These chapters are utilized in the preparation of air quality forecasts and the consistency analysis that is included in the AQMP.

2.3 Existing Conditions

State Greenhouse Gas Emissions

California is the second largest emitter of GHG in the United States (Texas is the largest GHG emitter) and the sixteenth largest GHG emitter in the world.¹³ However, because of more stringent air pollutant emission regulations and mild climate, in 2001 California ranked fourth lowest in carbon emissions per capita and fifth lowest among states in CO₂ emissions from fossil fuel consumption per unit of Gross State Product (total economic output of goods and services). In 2004, California produced 492 MMT-CO₂e¹⁴ GHG emissions, of which 81

¹³ California Energy Commission (CEC). 2006b. *Our Changing Climate, Assessing the Risks to California, 2006 Biennial Report*. California Climate Change Center, California Energy Commission Staff Paper, Sacramento, California, Report CEC-500-2006-077.

¹⁴ Greenhouse gas emissions other than carbon dioxide are commonly converted into carbon dioxide equivalents, which take into account the differing global warming potential (310) of different gases. For example, the Intergovernmental Panel on Climate Change (IPCC) finds that nitrous oxide has a global warming potential (GWP) of 310 and methane has a GWP of 21. Thus, emission of one ton of nitrous oxide and one ton of methane is represented as the emission of 310 tons of CO₂e and 21 tons of CO₂e, respectively. This allows for the summation of different greenhouse gas emissions into a single total.

percent are CO₂ from the combustion of fossil fuels, 2.8 percent were from other sources of CO₂, 5.7 percent were from methane, and 6.8 percent were from N₂O.¹⁵ The remaining 2.9 percent of GHG emissions were from High Global Warming Potential (GWP) gases.¹⁶

CO₂ emissions from human activities represent 84 percent of the total GHG emissions. California's transportation sector is the single largest generator of GHG emissions, producing 40.7 percent of the state's total emissions. Electricity generation for in-state consumption is the second largest source, with 22.2 percent. While out-of-state electricity generation comprises one-fifth to one-third of California's total electricity supply, it contributes 39 to 57 percent of the GHG emissions associated with electricity consumption in the state. Industrial activities are California's third largest source of GHG emissions, producing 20.5 percent of state's total emissions. Other major sources of GHG emissions include mineral production, waste combustion and land use, and forestry changes. Agriculture, forestry, commercial, and residential activities comprise the balance of California's greenhouse gas emissions.¹⁷

Climate change could impact the natural environment in California in the following ways, among others:

- rising sea levels along the California coastline, particularly in San Francisco and the San Joaquin Delta due to ocean expansion;
- extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- an increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality;
- reduced snow pack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies;
- potential increase in the severity of winter storms, affecting peak stream flows and flooding;
- changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield; and
- changes in distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

¹⁵ CO₂ equivalence is used to show the relative potential that different GHG have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, the global warming potential of a GHG, is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

¹⁶ California Energy Commission (CEC). 2006a. *Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004*, California Energy Commission Staff Paper, Sacramento, California, Report CEC-600-2006-013.

¹⁷ Ibid.

These changes in California's climate and ecosystems are occurring at a time when California's population is expected to increase from 34 million to 59 million by the year 2040 (CEC 2005).

As such, the number of people potentially affected by climate change, as well as the amount of anthropogenic GHG emissions expected under a "business as usual" scenario, is expected to increase. Similar changes as those noted above for California would also occur in other parts of the world with regional variations in resources affected and vulnerability to adverse effects. GHG emissions in California are attributable to human activities associated with industrial/manufacturing, utilities, transportation, residential, and agricultural sectors (CEC 2006) as well as natural processes.

Regional Context

The project site is located within the SCAB, an approximately 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The terrain and geographical location determine the distinctive climate of the SCAB, which is a coastal plain with connecting broad valleys and low hills.

The southern California region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the SCAB is a function of the area's natural physical characteristics (weather and topography) and human influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout the SCAB, making it an area of high pollution potential.

The greatest air pollution impacts throughout the SCAB occur from June through September. These are attributed to the large amount of pollutant emissions, light winds, and shallow vertical atmospheric mixing, which frequently reduce pollutant dispersion, thus causing elevated air pollution levels. Pollutant concentrations in the SCAB vary with location, season, and time of day. O₃ concentrations, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the far inland areas of the SCAB and adjacent desert. Over the past 30 years, substantial progress has been made in reducing air pollution levels in southern California.

The SCAQMD has recently completed the Multiple Air Toxics Exposure Study III (MATES III), which was an ambient air monitoring and evaluation study conducted in the Basin. MATES III was a follow on to previous air toxics studies in the Basin and is part of the SCAQMD Governing Board Environmental Justice Initiative.

Compared to previous studies of air toxics in the Basin, MATES III found a decreasing risk for air toxics exposure, with the population weighted risk down by 17% from the analysis in MATES II. While there has been improvement in air quality regarding air toxics, the risks are still unacceptable and are higher near sources of emissions such as ports and transportation corridors. Diesel particulate continues to dominate the risk from air toxics, and the portion of air toxic risk attributable to diesel exhaust is increased compared to the MATES II Study. The highest risks are found near the port area, an area near central Los Angeles, and near transportation corridors. The results from the MATES III study underscore that a continued focus on reduction of toxic emissions, particularly from diesel engines, is needed to reduce air toxics exposure.

The MATES III study concluded that the average carcinogenic risk throughout the Basin, attributed to toxic air contaminants, is approximately 1,194 in one million. Mobile sources (e.g., cars, trucks, trains, ships, aircraft, etc.) represent the greatest contributors. About 83.6% of all risk is attributed to DPM emissions.

Local Area Conditions

Local Climate

Data from the Western Regional Climate Center's Los Angeles Civic Center climate monitoring station was used to characterize the eastern project vicinity climate conditions because it is nearest to the eastern end of the project site. The average project area summer (August) high and low temperatures are 83.2 degrees Fahrenheit (°F) and 64.0°F, respectively, while the average winter (January) high and low temperatures are 66.4°F and 48.4°F, respectively. The average annual rainfall is 14.91 inches.¹⁸

Data from the Western Regional Climate Center's University of California – Los Angeles climate monitoring station was used to characterize the western project vicinity climate conditions because it is nearest to the western end of the project site. The average project area summer (August) high and low temperatures are 77.8 degrees Fahrenheit (°F) and 61.9°F, respectively, while the average winter (January) high and low temperatures are 65.7°F and 49.9°F, respectively. The average annual rainfall is 17.64 inches.¹⁹

The wind monitoring station located nearest to the project site is in downtown Los Angeles; therefore, data from the downtown Los Angeles wind monitoring station was used to characterize study area wind conditions. Wind patterns in the

¹⁸ Western Regional Climate Center. Los Angeles Area, California Climate Summaries. Los Angeles Civic Center, California (045115). Available: <http://www.wrcc.dri.edu/cgi-bin/cliRECTM.pl?calacc>. Accessed: December 1, 2008.

¹⁹ Western Regional Climate Center. Los Angeles Area, California Climate Summaries. UCLA – Los Angeles, California (049152). Available: <http://www.wrcc.dri.edu/cgi-bin/cliRECTM.pl?caucla>. Accessed: December 1, 2008.

project vicinity display a nearly unidirectional flow, primarily from the west-southwest, at an average speed of 4.94 miles per hour. Calm wind conditions are present 8% of the time.²⁰

Existing Pollutant Levels at Nearby Monitoring Station

The SCAQMD has divided the Basin into air monitoring areas and maintains a network of air quality monitoring stations located throughout the Basin. The project site's eastern half is located in the Central Los Angeles County Monitoring Area (i.e., Source Receptor Area [SRA] Number 1), while the western half is located in the Northwest Los Angeles County Coastal Monitoring Area (SRA 2). The nearest monitoring stations to the project site are the Los Angeles – North Main Street station to the east and the West Los Angeles – VA Hospital station to the west. The North Main Street station monitors O₃, PM₁₀, and PM_{2.5}, while the VA Hospital station monitors only O₃.

Monitoring data, shown in Table 3, show the following pollutant trends: both State 1-hour and 8-hour O₃ standards were exceeded an average of four times each year at both stations. Particulate (PM₁₀ and PM_{2.5}) concentrations are largely affected by meteorology and show some variability during the 3-year reporting period. The State 24-hour PM₁₀ standard was exceeded three times in 2006, five times in 2007, and twice in 2008, while the national standard was not exceeded during the 3-year reporting period. The national PM_{2.5} standard was exceeded 11 times in 2006, 20 times in 2007, and 10 times in 2008.

Existing Health Risk in the Surrounding Area

According to the most current SCAQMD inhalation cancer risk data (MATES III Carcinogenic Interactive Map), the project area is located within a cancer risk zone of approximately 800 to 1,100 in one million.²¹ This is largely due to the project area's proximity to the Interstate 10 freeway that is located just south of the project site. For comparison, the average cancer risk in the Basin is 1,194 per million.

Sensitive Receptors and Locations

Some population groups, such as children, the elderly, and acutely and chronically ill persons, especially those with cardio-respiratory diseases, are considered more sensitive to air pollution than others. Sensitive receptors within the project vicinity include multi-family residential land uses and schools located along the route.

²⁰ SCAQMD, <ftp://ftp.aqmd/pub/metdatadla.exe>. Accessed December 1, 2008.

²¹ South Coast Air Quality Management District, MATES III Carcinogenic Risk Interactive Map, available: <http://www2.aqmd.gov/webappl/matesiii/>, accessed July 25, 2008.

Table 3. Air Quality Data from Los Angeles – North Main Street Station (ARB 70087) and West Los Angeles - VA Hospital Station (ARB 70091)

Pollutant Standards	2006	2007	2008
Ozone (O₃)			
<i>State standard (1-hour average = 0.09 ppm)</i>			
<i>National standard (8-hour average = 0.075 ppm)</i>			
Maximum concentration 1-hour period (ppm)	0.108/0.099	0.115/0.117	0.109/0.111
Maximum concentration 8-hour period (ppm)	0.079/0.074	0.102/0.088	0.090/0.097
Days state 1-hour standard exceeded	8/3	3/2	3/3
Days state 8-hour standard exceeded	7/2	6/2	6/2
Suspended Particulates (PM₁₀)			
<i>State standard (24-hour average = 50 µg/m³)</i>			
<i>National standard (24-hour average = 150 µg/m³)</i>			
Maximum state 24-hour concentration	58.0/NA	77.0/NA	64.0/NA
Maximum national 24-hour concentration	59.0/NA	78.0/NA	66.0/NA
Days exceeding state standard	3/NA	5/NA	2/NA
Days exceeding national standard	0/NA	0/NA	0/NA
Suspended Particulates (PM_{2.5})			
<i>National standard (24-hour average = 35 µg/m³)</i>			
Maximum 24-hour concentration	56.2/NA	64.1/NA	78.3/NA
Days exceeding national standard ^a	11/NA	20/NA	10/NA

Notes:

^aNumber of exceedances based on NAAQS applicable during period shown (65 µg/m³). Standard was changed to 35 µg/m³ in November 2006, to be applied to 2007.

Numbers for both stations are given where applicable with the North Main Street Station values first. Ex; (North Main / VA Hospital).

Source: California Air Resources Board, compiled by ICF International, May 2008.

Proposed construction activity would occur within 25 meters of these sensitive land uses. As such, the evaluation of localized impacts during construction activity will focus on these land uses.

3.0 Significance Thresholds

Based on Appendix G of the State CEQA Guidelines, the proposed project would have a potentially significant effect on air quality if it would:

- conflict with or obstruct implementation of the applicable air quality management plan,
- violate any air quality standard or contribute substantially to an existing or projected air quality violation,

- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors),
- expose sensitive receptors to substantial pollutant concentrations,
- create objectionable odors affecting a substantial number of people, or
- generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

The CEQA Guidelines also state that the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the determinations above.

Based on the SCAQMD’s regulatory role in the Basin, the significance thresholds and analysis methodologies outlined in the *SCAQMD CEQA Air Quality Handbook* (as updated per their website), *Final Localized Significance Threshold Methodology* and *Final—Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds* guidance documents were used in evaluating project impacts.

3.1 Construction Emissions

According to criteria set forth in the *SCAQMD CEQA Air Quality Handbook*, *Localized Significance Threshold Methodology for CEQA Evaluations*, and *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* guidance documents, the project would have a significant impact on construction emissions if any of the following were to occur.

- Regional emissions from both direct and indirect sources exceed any of the following SCAQMD prescribed threshold levels: (1) 75 pounds a day for reactive organic gases (ROG), (2) 100 pounds per day for NO_x, (3) 550 pounds per day for CO, (4) 150 pounds per day for PM₁₀ or SO_x, and (5) 55 pounds per day for PM_{2.5}.
- Localized emissions from on-site construction equipment and site disturbance activity exceed any of the following SCAQMD-prescribed threshold levels: (1) 74 pounds per day for NO_x, (2) 562 pounds per day for CO, (3) 4 pounds per day for PM₁₀, and (4) 2 pounds per day for PM_{2.5}.²²

²² Derived from SCAQMD Localized Significance Threshold Tables—SRA 1 (Central Los Angeles County) and SRA 2 (Northwest Los Angeles County Coastal), 1-acre site, 25-meter receptor distance.

3.2 Operational Emissions

According to criteria set forth in the SCAQMD *CEQA Air Quality Handbook*, the project would have a significant impact with regard to operational emissions if:

- regional emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed threshold levels: (1) 55 pounds a day for ROG, (2) 55 pounds per day for NO_x, (3) 550 pounds per day for CO, (4) 150 pounds per day for PM₁₀ or SO_x, and (5) 55 pounds per day for PM_{2.5} (South Coast Air Quality Management District 1993 and 2006).
- localized emissions from on-site sources exceed any of the following SCAQMD prescribed threshold levels: (1) 74 pounds per day for NO_x, (2) 562 pounds per day for CO, (3) 1 pounds per day for PM₁₀, and (4) 1 pounds per day for PM_{2.5}.²³
- the project would cause an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9 ppm, respectively, at an intersection or roadway within 0.25 mile of a sensitive receptor.²⁴

3.3 Toxic Air Contaminants

According to guidelines provided in the SCAQMD *CEQA Air Quality Handbook*, the project would have a significant impact from TACs if:

- on-site stationary sources emit carcinogenic or TACs that individually or cumulatively exceed the maximum individual cancer risk of ten in one million (1.0×10^{-5}) or an acute or chronic hazard index of 1.0 (South Coast Air Quality Management District 1998),²⁵
- hazardous materials associated with on-site stationary sources result in an accidental release of air toxic emissions or acutely hazardous materials, posing a threat to public health and safety; or
- the project would be occupied primarily by sensitive individuals within 0.25 mile of any existing facility that emits TACs, which could result in a health risk from pollutants identified in District Rule 1401 (South Coast Air Quality Management District 1993).

²³ Derived from SCAQMD Localized Significance Threshold Tables – SRA 1 (Central Los Angeles County) and SRA 2 (Northwest Los Angeles County Coastal), 1-acre site, 25-meter receptor distance.

²⁴ Where the CO standard is exceeded at the intersection, a project would result in a significant impact if the incremental increase due to the project is equal to or greater than 1.0 ppm for the California 1-hour CO standard or 0.45 ppm for the 8-hour CO standard.

²⁵ SCAQMD Risk Assessment Procedures for Rules 1401 and 212, November 1998.

3.4 Climate Change/Greenhouse Gas Emissions

No federal, State, or regional air quality agency has adopted a methodology or quantitative threshold that can be applied to evaluate the significance of an individual project's contribution to GHG emissions, such as the quantitative thresholds that exist for criteria pollutants. Rather, the proposed project is evaluated for consistency with the state goal of reducing GHG emissions in California to 1990 levels by 2020, as set forth by the timetable established in AB 32 (California Global Warming Solutions Act of 2006).

4.0 Methodology

4.1 Construction

Mass daily combustion emissions, fugitive PM₁₀ and PM_{2.5}, and off-gassing emissions were compiled using URBEMIS 2007, which is an emissions estimation/evaluation model developed by ARB that is based, in part, on SCAQMD *CEQA Air Quality Handbook* guidelines and methodologies.

The URBEMIS 2007 model separates the construction process into multiple phases that account for everything from structure demolition and site clearing to asphalt paving and the application of architectural coatings. For example, demolition-period emissions would include fugitive dust emissions from cut-out removal, as well as combustion exhaust emissions from on-site construction equipment, haul truck trips, and worker commute trips. Construction and finishing emissions would include combustion exhaust emissions from on-site construction equipment, haul truck trips, and worker commute trips, as well as fugitive off-gassing emissions (i.e., ROG) from the application of architectural coatings and asphalt paving.

Construction equipment by phase was based on scheduling information ascertained via communications with the project manager. A complete listing of the construction equipment by phase, construction phase duration assumptions, and changes to modeling default values used in this analysis is included within the URBEMIS 2007 printout sheets that are provided in Appendix A of this technical report.

4.2 Operations

The proposed project has the potential to create local operational impacts as a result of local traffic redistribution.

With respect to the evaluation of localized impacts, local area CO concentrations for roadways were evaluated using the CALINE-4 line-source dispersion model developed by the California Department of Transportation (Caltrans) combined with EMFAC2007 emission factors. The analysis of roadway CO impacts followed the protocol recommended by Caltrans and published in the document

Transportation Project-Level Carbon Monoxide Protocol, December 1997. It is also consistent with procedures identified through the SCAQMD's CO modeling protocol. All emissions calculation worksheets and air quality modeling output files are provided in Appendix A.

4.3 Toxic Air Contaminants Impacts (Construction and Operations)

Potential toxic air contaminant (TAC) impacts are evaluated by conducting a screening-level analysis followed by a more detailed analysis (i.e., dispersion modeling) if necessary. The screening-level analysis consists of reviewing the proposed project's description and site plan to identify any new or modified TAC emissions sources. If it is determined that the proposed project would introduce a new source, or modify an existing TAC emissions source, then downwind sensitive-receptor locations are identified, and site-specific dispersion modeling is conducted to determine proposed project impacts.

4.4 Climate Change/Greenhouse Gas Emissions

The proposed project would not generate any new vehicular trips or cause an increase in regional vehicle miles traveled (VMT), or related GHG emissions, as the project would not construct new homes or businesses. As such, there would be no new operations-period GHG emissions. Therefore, operations-period GHG emissions are not evaluated in this report.

The proposed project is limited to roadway improvements, and as such, construction-period GHG emissions are quantified and presented below. All feasible mitigation measures to reduce GHG emissions during construction are prescribed below. Construction-period GHG emissions were estimated using the following methodology: 1) the URBEMIS 2007 software was utilized to calculate project-related CO₂ emissions, and 2) methane (CH₄) and N₂O emissions were compiled using the calculation formulas provided in the *California Climate Action Registry, General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, version 3.0*.

5.0 Air Quality Impact Analysis

5.1 Construction Impacts

Regional Construction Impacts

Construction of the proposed project has the potential to create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers traveling to and from the

project site. In addition, fugitive dust emissions would result from demolition and construction activities. Mobile-source emissions, primarily NO_x, would result from the use of construction equipment.

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources. The equipment mix and duration for each construction stage is detailed in the URBEMIS 2007 printout sheets provided in Appendix A.

With the goal of presenting a conservative, worst-case impact analysis, it was assumed for modeling purposes that construction would have duration of 4 months. The total amount of construction, the duration of construction, and the intensity of construction activity could have a substantial effect upon the amount of construction emissions, the concentrations, and the resulting impacts occurring at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner burning construction equipment fleet mix, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval).

Table 4, below, shows the emissions calculated for the proposed project. As shown therein, criteria pollutant emissions would be less than the applicable SCAQMD significance thresholds, and as such, would result in a less than significant regional air quality impact.

Table 4. Worst-Case Construction Emissions (pounds per day)

	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Jut-out removal	1.25	8.71	6.10	<0.01	1.39	0.58
Paving and Restriping	3.00	16.47	10.93	<0.01	1.37	1.25
Maximum Daily Emissions	3	16	11	<1	1	1
Regional Significance Threshold	75	100	550	150	150	55
Exceed Threshold?	No	No	No	No	No	No

Notes:

Construction emission calculation worksheets and URBEMIS2007 printouts are included in Appendix A.

Source: ICF International, January 2010.

With regard to regional construction-period impacts under Alternative A, impacts would be similar to or less than those disclosed above for the proposed project. This is because less construction activity would occur under Alternative A than

under the proposed project. There would be no jut-out removal between Comstock Avenue and Malcolm Avenue, and there would be no bus lane-related construction from approximately 300 feet east of Veteran Avenue to the I-405 northbound ramps, nor east of S. Park View Street. However, there would be an additional 1.8 miles of curb land reconstruction and resurfacing between Fairfax Avenue and San Vicente Boulevard, and between the City of Beverley Hills and Westholme Avenue. Similar to the proposed project, criteria pollutant emissions under Alternative A would be less than the applicable SCAQMD significance thresholds, and as such, would result in a less than significant regional air quality impact.

Local Construction Impacts

In addition to these regional emissions, the SCAQMD has developed a set of mass emissions rate look-up tables that can be used to evaluate localized impacts that may result from construction-period emissions. If the on-site emissions from proposed construction activities are below the Localized Significance Threshold (LST) emission levels found in the LST mass rate look-up tables for the project site's SRA, then project emissions would not have the potential to cause a significant localized air quality impact.

When quantifying mass emissions for LST analysis, only emissions that occur on site are considered. Consistent with SCAQMD LST guidelines, emissions related to off-site delivery/haul truck activity and employee trips are not considered in the evaluation of localized impacts. A conservative estimate of the project's construction-period on-site mass emissions is presented in Table 5. As shown therein, the worst-case maximum emissions for all criteria pollutants would remain below their respective SCAQMD LST significance thresholds. As such, localized impacts that may result from construction-period air pollutant emissions would be less than significant.

Table 5. Worst-Case Localized Construction Emissions (pounds per day)

	NO _x	CO	PM ₁₀ ^a	PM _{2.5} ^a
Jut-out removal	7.68	4.68	1.34	0.70
Paving and Restriping	14.87	8.27	1.28	1.18
Localized Significance Thresholds ^b	74	562	4	2
Exceed Threshold	No	No	No	No

Notes:

Construction emission calculation worksheets are included in the URBEMIS2007 printouts.

^aPM₁₀ emissions estimates are based on compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.

^bThe project site is located in SCAQMD SRA No. 1/2. These LSTs are based on the site location SRA, distance to nearest sensitive receptor location from the project site (25 meters), and project area that could be under construction on any given day (1 acre).

Source: ICF International, January 2010.

With regard to localized construction-period impacts under Alternative A, impacts would be similar to or less than those disclosed above for the proposed project. This is because less construction activity would occur under Alternative A than under the proposed project. There would be no jut-out removal between Comstock Avenue and Malcolm Avenue, and there would be no bus lane-related construction from approximately 300 feet east of Veteran Avenue to the I-405 northbound ramps, nor east of S. Park View Street. However, there would be an additional 1.8 miles of curb land reconstruction and resurfacing between Fairfax Avenue and San Vicente Boulevard, and between the City of Beverly Hills and Westholme Avenue. Similar to the proposed project, localized emissions under Alternative A would be less than the applicable SCAQMD LST significance thresholds, and as such, would result in a less than significant localized air quality impact.

Toxic Air Contaminants

The greatest potential for TAC emissions would be related to diesel particulate emissions associated with heavy equipment operations during site grading activities. The SCAQMD does not consider diesel-related cancer risks from construction equipment to be an issue due to the short-term nature of construction activities. Construction activities associated with the proposed project would be sporadic, transitory, and short term in nature. The assessment of cancer risk is typically based on a 70-year exposure period. Because exposure to diesel exhaust would be well below the 70-year exposure period, construction of the proposed project is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. As such, project-related toxic emission impacts during construction would not be significant under both the proposed project and Alternative A.

5.2 Operational Impacts

Regional Operations Impacts

Regional air pollutant emissions associated with project operations would be generated by operation of on-road vehicles. Mobile-source emissions are proportional to the vehicle miles traveled, or VMT, which are proportional to new vehicle trips. The proposed project would not generate new trips but rather would facilitate the movement of existing traffic through the study corridor, as well as other traffic generated by new development in the area. Consequently, the proposed project may result in local traffic redistribution. These potential impacts are discussed below.

Local Operational Impacts

Within an urban setting, vehicle exhaust is the primary source of CO. Consequently, the highest CO concentrations are generally found close to congested intersections. Under typical meteorological conditions, CO concentrations tend to decrease as the distance from the emissions source (i.e., congested intersection) increases. For purposes of providing a conservative worst-case impact analysis, CO concentrations are typically analyzed at congested intersection locations. If impacts are less than significant close to congested intersections, impacts will also be less than significant at more distant sensitive-receptor locations.

Project traffic during the operational phase of the project would have the potential to create local area CO impacts. To ascertain the proposed project's potential to generate localized air quality impacts, the *Wilshire Bus Rapid Transit Project Traffic Impact Analysis* (Iteris, December 2009) was reviewed to determine the potential for the creation of localized carbon monoxide (CO) hot spots at congested intersection locations. The SCAQMD recommends a hot spot evaluation of potential localized CO impacts when vehicle to capacity (V/C) ratios are increased by two percent or more at intersections with a level of service (LOS) of C or worse. The traffic impact analysis identified 74 key intersection locations along routes that accommodate much of the traffic traveling within the project area. Of the 74 key intersection locations, the traffic analysis concluded that for the year 2012, 38 intersections could potentially create a localized CO hot spot with the proposed project and 36 intersections could potentially create a localized CO hot spot with the project alternative. For the year 2020, it was concluded that 43 intersections could potentially create a localized CO hot spot with the proposed project and 37 intersections could potentially create a localized CO hot spot with the project alternative.²⁶

²⁶ Based on SCAQMD-recommended screening criteria, any intersection that 1) operates at LOS C or worse, and 2) would experience an increase in peak-hour volume to capacity ratio of 2% or more as a result of project-related traffic, should be evaluated for potential to create a localized CO hotspot.

Local area CO concentrations were projected using the CALINE 4 traffic pollutant dispersion model. The analysis of CO impacts followed the protocol recommended by the California Department of Transportation, published as *Transportation Project-Level Carbon Monoxide Protocol*, December 1997. It is also consistent with procedures identified through the SCAQMD's CO modeling protocol, with all four corners of each intersection analyzed to determine whether project development would result in a CO concentration that exceeds federal or state CO standards.

The project's CO concentrations for a.m. and p.m. 1- and 8-hour CO levels for project build-out year 2012 with project and with project alternative, and horizon year 2020 with project and with project alternative are presented in Tables 6, 7, 8, and 9 respectively. As shown therein, the proposed project would not have a significant impact on 1-hour or 8-hour local CO concentrations due to mobile source emissions.

Because significant impacts would not occur at the intersections with the highest traffic volumes located adjacent to sensitive receptors under neither the proposed project nor project alternative, no significant impacts are anticipated to occur at any other locations in the study area because the conditions yielding CO hotspots would not be worse than those occurring at the analyzed intersections. Consequently, the sensitive receptors that are included in this analysis would not be significantly affected by CO emissions generated by the net increase in traffic that would occur under the proposed project or project alternative. Because neither the proposed project nor project alternative would cause an exceedance or exacerbate an existing exceedance of an AAQS, localized operational air quality impacts would be less than significant. No mitigation measures are necessary.

Toxic Air Contaminants

Regarding potential TAC emissions associated with the buildout and long-term operation of the proposed project and project alternative, SCAQMD recommends that a health risk assessment (HRA) be conducted for projects that emit substantial diesel particulate emissions (e.g., truck stops and warehouse distribution facilities) or certain industrial projects that result in the emitting of acute and/or chronically hazardous TAC pollutants. Since both the proposed project and project alternative would operate CNG buses rather than diesel buses, and would not result in the emission of acute and/or chronically hazardous TAC pollutants, an air toxics HRA is not warranted. Potential project-generated air toxic impacts on surrounding land uses would be less than significant. No mitigation measures are necessary.

Table 6. Project Buildout (Year 2012)—Local Area Carbon Monoxide Dispersion Analysis

Intersection	Peak Period ^a	Maximum 1-Hour 2012 Base Concentration (ppm) ^b	Maximum 1-Hour 2012 w/ Project Concentration (ppm) ^c	Significant 1-Hour Concentration Impact? ^d	Maximum 8-Hour 2012 Base Concentration (ppm) ^e	Maximum 8-Hour 2012 w/ Project Concentration (ppm) ^f	Significant 8-Hour Concentration Impact? ^d
Alvarado @ 6th	AM	7.3	7.5	No	4.8	5.0	No
	PM	7.5	7.3	No	5.0	4.8	No
Alvarado @ Olympic	AM	7.6	7.7	No	5.0	5.1	No
	PM	7.9	8.0	No	5.3	5.3	No
Barrington @ Wilshire	AM	7.2	7.1	No	4.8	4.7	No
	PM	7.1	7.0	No	4.7	4.6	No
Beverly Glen @ Olympic	AM	8.7	8.7	No	5.8	5.8	No
	PM	8.6	8.7	No	5.7	5.8	No
Beverly Glen @ Santa Monica	AM	8.2	8.4	No	5.5	5.6	No
	PM	8.3	8.7	No	5.5	5.8	No
Bundy @ Olympic	AM	8.7	8.8	No	5.8	5.9	No
	PM	8.5	8.6	No	5.7	5.7	No
Bundy @ Wilshire	AM	7.3	7.3	No	4.8	4.8	No
	PM	7.5	7.5	No	5.0	5.0	No
Crenshaw @ Olympic	AM	8.5	8.6	No	5.7	5.7	No
	PM	8.3	8.3	No	5.5	5.5	No
Crenshaw @ Wilshire	AM	7.4	7.2	No	4.9	4.8	No
	PM	7.4	7.4	No	4.9	4.9	No
Fairfax @ 3rd	AM	7.9	7.9	No	5.3	5.3	No
	PM	7.8	7.7	No	5.2	5.1	No
Fairfax @ Olympic	AM	7.9	8.0	No	5.3	5.3	No
	PM	7.9	7.9	No	5.3	5.3	No
Fairfax @ San Vicente	AM	7.7	7.8	No	5.1	5.2	No
	PM	7.3	7.4	No	4.8	4.9	No
Fairfax @ Wilshire	AM	8.2	8.0	No	5.5	5.3	No
	PM	8.2	8.4	No	5.5	5.6	No
Federal @ Santa Monica	AM	6.5	6.6	No	4.3	4.3	No
	PM	6.4	6.4	No	4.2	4.2	No
Highland @ 3rd	AM	7.8	7.9	No	5.2	5.3	No
	PM	7.6	7.6	No	5.0	5.0	No
Highland @ Olympic	AM	7.5	7.5	No	5.0	5.0	No
	PM	7.6	7.6	No	5.0	5.0	No
Highland @ Wilshire	AM	7.9	7.7	No	5.3	5.1	No
	PM	7.8	7.6	No	5.2	5.0	No
I-405 SB Ramps @ Santa Monica	AM	7.4	7.4	No	4.9	4.9	No
	PM	7.4	7.4	No	4.9	4.9	No
La Brea @ 3rd	AM	8.3	8.3	No	5.5	5.5	No
	PM	7.8	7.8	No	5.2	5.2	No
La Brea @ Olympic	AM	8.4	8.4	No	5.6	5.6	No
	PM	8.6	8.6	No	5.7	5.7	No

Intersection	Peak Period ^a	Maximum 1-Hour 2012 Base Concentration (ppm) ^b	Maximum 1-Hour 2012 w/ Project Concentration (ppm) ^c	Significant 1-Hour Concentration Impact? ^d	Maximum 8-Hour 2012 Base Concentration (ppm) ^e	Maximum 8-Hour 2012 w/ Project Concentration (ppm) ^f	Significant 8-Hour Concentration Impact? ^d
La Brea @ Wilshire	AM	7.8	7.6	No	5.2	5.0	No
	PM	8.3	8.1	No	5.5	5.4	No
Overland @ Olympic	AM	7.9	7.9	No	5.3	5.3	No
	PM	8.4	8.6	No	5.6	5.7	No
Overland @ Pico	AM	8.7	8.6	No	5.8	5.7	No
	PM	8.8	8.8	No	5.9	5.9	No
Overland @ Santa Monica	AM	7.3	7.4	No	4.8	4.9	No
	PM	7.4	7.4	No	4.9	4.9	No
San Vicente @ Olympic	AM	8.4	8.4	No	5.6	5.6	No
	PM	7.9	7.9	No	5.3	5.3	No
San Vicente @ Wilshire	AM	8.4	8.3	No	5.6	5.5	No
	PM	8.8	8.7	No	5.9	5.8	No
Sepulveda @ Pico	AM	8.2	8.3	No	5.5	5.5	No
	PM	8.2	8.2	No	5.5	5.5	No
Vermont @ 8th	AM	7.2	7.2	No	4.8	4.8	No
	PM	7.8	7.8	No	5.2	5.2	No
Vermont @ Olympic	AM	8.1	8.1	No	5.4	5.4	No
	PM	8.4	8.4	No	5.6	5.6	No
Veteran @ Santa Monica	AM	7.3	7.3	No	4.8	4.8	No
	PM	7.4	7.4	No	4.9	4.9	No
Veteran @ Sunset	AM	7.5	7.6	No	5.0	5.0	No
	PM	7.1	7.1	No	4.7	4.7	No
Veteran @ Wilshire	AM	10.0	9.6	No	6.7	6.4	No
	PM	9.0	8.7	No	6.0	5.8	No
W Century Park @ Olympic	AM	8.5	8.5	No	5.7	5.7	No
	PM	7.7	7.8	No	5.1	5.2	No
Western @ 3rd	AM	7.6	7.7	No	5.0	5.1	No
	PM	7.7	7.7	No	5.1	5.1	No
Western @ Olympic	AM	8.0	8.1	No	5.3	5.4	No
	PM	8.1	8.2	No	5.4	5.5	No
Westwood @ Olympic	AM	8.1	8.1	No	5.4	5.4	No
	PM	9.3	9.3	No	6.2	6.2	No

Intersection	Peak Period ^a	Maximum	Maximum	Significant 1-Hour Concentration Impact? ^d	Maximum	Maximum	Significant 8-Hour Concentration Impact? ^d
		1-Hour 2012 Base Concentration (ppm) ^b	1-Hour 2012 w/ Project Concentration (ppm) ^c		8-Hour 2012 Base Concentration (ppm) ^e	8-Hour 2012 w/ Project Concentration (ppm) ^f	
Westwood @ Pico	AM	7.7	7.7	No	5.1	5.1	No
	PM	8.2	8.3	No	5.5	5.5	No
Westwood @ Santa Monica	AM	8.2	8.2	No	5.5	5.5	No
	PM	8.5	8.6	No	5.7	5.7	No

Notes:

CALINE4 dispersion model output sheets and Emfac2007 emission factors are provided in Appendix A.

ppm = parts per million

^aPeak hour traffic volumes are based on the *Wilshire Boulevard Bus Rapid Transit Project Traffic Impact Analysis* prepared for the project by Iteris, 2009.

^bSCAQMD 2012 1-hour ambient background concentration (4.4 ppm) + 2012 base traffic CO 1-hour contribution.

^cSCAQMD 2012 1-hour ambient background concentration (4.4 ppm) + 2012 with-project traffic CO 1-hour contribution.

^dThe State standard for the 1-hour average CO concentration is 20 ppm, and the 8-hour average concentration is 9.0 ppm.

^eSCAQMD 2012 8-hour ambient background concentration (2.8 ppm) + 2012 base traffic CO 8-hour contribution.

^fSCAQMD 2012 8-hour ambient background concentration (2.8 ppm) + 2012 with-project traffic CO 8-hour contribution.

Source: ICF International, January 2010.

Table 7. Alternative Buildout (Year 2012)—Local Area Carbon Monoxide Dispersion Analysis

Intersection	Peak Period ^a	Maximum	Maximum	Significant 1-Hour Concentration Impact? ^d	Maximum	Maximum	Significant 8-Hour Concentration Impact? ^d
		1-Hour 2012 Base Concentration (ppm) ^b	1-Hour 2012 w/ Alternative Concentration (ppm) ^c		8-Hour 2012 Base Concentration (ppm) ^e	8-Hour 2012 w/ Alternative Concentration (ppm) ^f	
Alvarado @ Olympic	AM	7.6	7.6	No	5.0	5.0	No
	PM	7.9	8.0	No	5.3	5.3	No
Alvarado @ Wilshire	AM	7.6	7.5	No	5.0	5.0	No
	PM	7.5	7.5	No	5.0	5.0	No
Barrington @ Wilshire	AM	7.2	7.2	No	4.8	4.8	No
	PM	7.1	7.0	No	4.7	4.6	No
Beverly Glen @ Olympic	AM	8.7	8.7	No	5.8	5.8	No
	PM	8.6	8.7	No	5.7	5.8	No
Beverly Glen @ Santa Monica	AM	8.4	8.4	No	5.6	5.6	No
	PM	8.3	8.4	No	5.5	5.6	No
Beverly Glen @ Wilshire	AM	8.1	7.8	No	5.4	5.2	No
	PM	8.0	7.7	No	5.3	5.1	No
Bundy @ Olympic	AM	8.7	8.8	No	5.8	5.9	No
	PM	8.5	8.6	No	5.7	5.7	No
Bundy @ Wilshire	AM	7.3	7.4	No	4.8	4.9	No
	PM	7.5	7.4	No	5.0	4.9	No
Crenshaw @ Olympic	AM	8.5	8.5	No	5.7	5.7	No
	PM	8.3	8.3	No	5.5	5.5	No

Intersection	Peak Period ^a	Maximum 1-Hour 2012 Base Concentration (ppm) ^b	Maximum 1-Hour 2012 w/ Alternative Concentration (ppm) ^c	Significant 1-Hour Concentration Impact? ^d	Maximum 8-Hour 2012 Base Concentration (ppm) ^e	Maximum 8-Hour 2012 w/ Alternative Concentration (ppm) ^f	Significant 8-Hour Concentration Impact? ^d
Crenshaw @ Wilshire	AM	7.4	7.2	No	4.9	4.8	No
	PM	7.5	7.2	No	5.0	4.8	No
E Century Park @ Olympic	AM	8.8	8.9	No	5.9	6.0	No
	PM	8.4	8.5	No	5.6	5.7	No
Fairfax @ Olympic	AM	7.9	7.9	No	5.3	5.3	No
	PM	7.9	7.9	No	5.3	5.3	No
Fairfax @ San Vicente	AM	7.7	7.9	No	5.1	5.3	No
	PM	7.3	7.4	No	4.8	4.9	No
Fairfax @ Wilshire	AM	8.2	8.0	No	5.5	5.3	No
	PM	8.2	8.4	No	5.5	5.6	No
Federal @ Santa Monica	AM	6.5	6.6	No	4.3	4.3	No
	PM	6.4	6.4	No	4.2	4.2	No
Highland @ 3rd	AM	7.8	7.9	No	5.2	5.3	No
	PM	7.6	7.7	No	5.0	5.1	No
Highland @ Olympic	AM	7.5	7.5	No	5.0	5.0	No
	PM	7.6	7.5	No	5.0	5.0	No
Highland @ Wilshire	AM	7.9	7.7	No	5.3	5.1	No
	PM	7.8	7.7	No	5.2	5.1	No
I-405 SB Ramps @ Santa Monica	AM	7.4	7.4	No	4.9	4.9	No
	PM	7.4	7.5	No	4.9	5.0	No
La Brea @ Olympic	AM	8.4	8.4	No	5.6	5.6	No
	PM	8.6	8.7	No	5.7	5.8	No
La Brea @ Wilshire	AM	7.8	8.1	No	5.2	5.4	No
	PM	8.3	8.1	No	5.5	5.4	No
Overland @ Olympic	AM	7.9	7.9	No	5.3	5.3	No
	PM	8.4	8.5	No	5.6	5.7	No
Overland @ Santa Monica	AM	7.3	7.3	No	4.8	4.8	No
	PM	7.4	7.4	No	4.9	4.9	No
San Vicente @ Wilshire	AM	8.4	8.4	No	5.6	5.6	No
	PM	8.8	8.7	No	5.9	5.8	No
Sepulveda @ Olympic	AM	8.2	8.2	No	5.5	5.5	No
	PM	8.8	8.8	No	5.9	5.9	No
Sepulveda @ Pico	AM	8.2	8.2	No	5.5	5.5	No
	PM	8.2	8.3	No	5.5	5.5	No
Vermont @ 6th	AM	7.8	7.8	No	5.2	5.2	No
	PM	8.4	8.4	No	5.6	5.6	No
Vermont @ 8th	AM	7.2	7.2	No	4.8	4.8	No
	PM	7.8	7.8	No	5.2	5.2	No
Vermont @ Olympic	AM	8.1	8.1	No	5.4	5.4	No
	PM	8.4	8.4	No	5.6	5.6	No
Veteran @ Pico	AM	7.0	7.1	No	4.6	4.7	No
	PM	7.3	7.3	No	4.8	4.8	No

Intersection	Peak Period ^a	Maximum	Maximum	Significant 1-Hour Concentration Impact? ^d	Maximum	Maximum	Significant 8-Hour Concentration Impact? ^d
		1-Hour 2012 Base Concentration (ppm) ^b	1-Hour 2012 w/ Alternative Concentration (ppm) ^c		8-Hour 2012 Base Concentration (ppm) ^e	8-Hour 2012 w/ Alternative Concentration (ppm) ^f	
Veteran @ Santa Monica	AM	7.3	7.3	No	4.8	4.8	No
	PM	7.3	7.4	No	4.8	4.9	No
W Century Park @ Olympic	AM	8.5	8.5	No	5.7	5.7	No
	PM	7.7	7.8	No	5.1	5.2	No
Western @ 3rd	AM	7.6	7.6	No	5.0	5.0	No
	PM	7.7	7.7	No	5.1	5.1	No
Western @ Olympic	AM	8.0	8.1	No	5.3	5.4	No
	PM	8.1	8.2	No	5.4	5.5	No
Westwood @ Olympic	AM	8.1	8.2	No	5.4	5.5	No
	PM	9.3	9.3	No	6.2	6.2	No
Westwood @ Pico	AM	7.7	7.8	No	5.1	5.2	No
	PM	8.2	8.3	No	5.5	5.5	No

Notes:

CALINE4 dispersion model output sheets and Emfac2007 emission factors are provided in Appendix A.

ppm = parts per million

^aPeak hour traffic volumes are based on the *Wilshire Boulevard Bus Rapid Transit Project Traffic Impact Analysis* prepared for the project by Iteris, 2009.

^bSCAQMD 2012 1-hour ambient background concentration (4.4 ppm) + 2012 base traffic CO 1-hour contribution.

^cSCAQMD 2012 1-hour ambient background concentration (4.4 ppm) + 2012 with-alternative traffic CO 1-hour contribution.

^dThe State standard for the 1-hour average CO concentration is 20 ppm, and the 8-hour average concentration is 9.0 ppm.

^eSCAQMD 2012 8-hour ambient background concentration (2.8 ppm) + 2012 base traffic CO 8-hour contribution.

^fSCAQMD 2012 8-hour ambient background concentration (2.8 ppm) + 2012 with-alternative traffic CO 8-hour contribution.

Source: ICF International, January 2010.

Table 8. Project Horizon (Year 2020)—Local Area Carbon Monoxide Dispersion Analysis

Intersection	Peak Period ^a	Maximum	Maximum	Significant 1-Hour Concentration Impact? ^d	Maximum	Maximum	Significant 8-Hour Concentration Impact? ^d
		1-Hour 2020 Base Concentration (ppm) ^b	1-Hour 2020 w/ Project Concentration (ppm) ^c		8-Hour 2020 Base Concentration (ppm) ^e	8-Hour 2020 w/ Project Concentration (ppm) ^f	
Alvarado @ 6th	AM	6.0	6.1	No	3.9	4.0	No
	PM	6.1	6.1	No	4.0	4.0	No
Alvarado @ Olympic	AM	6.2	6.1	No	4.1	4.0	No
	PM	6.3	6.3	No	4.1	4.1	No
Barrington @ Olympic	AM	6.4	6.4	No	4.2	4.2	No
	PM	6.6	6.6	No	4.3	4.3	No
Barrington @ Wilshire	AM	5.9	5.9	No	3.9	3.9	No
	PM	5.9	5.8	No	3.9	3.8	No
Beverly Glen @ Olympic	AM	6.7	6.7	No	4.4	4.4	No
	PM	6.7	6.7	No	4.4	4.4	No

Intersection	Peak Period ^a	Maximum 1-Hour 2020 Base Concentration (ppm) ^b	Maximum 1-Hour 2020 w/ Project Concentration (ppm) ^c	Significant 1-Hour Concentration Impact? ^d	Maximum 8-Hour 2020 Base Concentration (ppm) ^e	Maximum 8-Hour 2020 w/ Project Concentration (ppm) ^f	Significant 8-Hour Concentration Impact? ^d
Beverly Glen @ Santa Monica	AM	6.5	6.5	No	4.3	4.3	No
	PM	6.5	6.5	No	4.3	4.3	No
Bundy @ Wilshire	AM	6.0	5.9	No	3.9	3.9	No
	PM	6.0	6.0	No	3.9	3.9	No
Crenshaw @ Olympic	AM	6.6	6.6	No	4.3	4.3	No
	PM	6.5	6.5	No	4.3	4.3	No
Crenshaw @ Wilshire	AM	5.9	6.0	No	3.9	3.9	No
	PM	6.1	6.0	No	4.0	3.9	No
E Century Park @ Olympic	AM	6.8	6.9	No	4.5	4.6	No
	PM	6.6	6.6	No	4.3	4.3	No
Fairfax @ 3rd	AM	6.2	6.2	No	4.1	4.1	No
	PM	6.2	6.2	No	4.1	4.1	No
Fairfax @ Olympic	AM	6.9	6.3	No	4.6	4.1	No
	PM	6.3	6.3	No	4.1	4.1	No
Fairfax @ San Vicente	AM	6.2	6.3	No	4.1	4.1	No
	PM	5.9	6.0	No	3.9	3.9	No
Fairfax @ Wilshire	AM	6.4	6.3	No	4.2	4.1	No
	PM	6.6	6.5	No	4.3	4.3	No
Highland @ 3rd	AM	6.2	6.2	No	4.1	4.1	No
	PM	6.1	6.1	No	4.0	4.0	No
Highland @ 6th	AM	5.8	6.0	No	3.8	3.9	No
	PM	6.1	6.1	No	4.0	4.0	No
Highland @ Olympic	AM	6.1	6.0	No	4.0	3.9	No
	PM	6.1	6.1	No	4.0	4.0	No
Highland @ Wilshire	AM	6.3	6.1	No	4.1	4.0	No
	PM	6.2	6.2	No	4.1	4.1	No
La Brea @ 3rd	AM	6.5	6.5	No	4.3	4.3	No
	PM	6.3	6.3	No	4.1	4.1	No
La Brea @ Olympic	AM	6.5	6.6	No	4.3	4.3	No
	PM	6.7	6.6	No	4.4	4.3	No
La Brea @ Wilshire	AM	6.5	6.4	No	4.3	4.2	No
	PM	6.5	6.4	No	4.3	4.2	No
Overland @ Olympic	AM	6.3	6.3	No	4.1	4.1	No
	PM	6.6	6.6	No	4.3	4.3	No
Overland @ Pico	AM	6.7	6.7	No	4.4	4.4	No
	PM	6.7	6.7	No	4.4	4.4	No
Overland @ Santa Monica	AM	6.0	6.0	No	3.9	3.9	No
	PM	6.0	6.0	No	3.9	3.9	No
S. Beverly Glen @ Sunset	AM	5.9	5.9	No	3.9	3.9	No
	PM	5.9	5.9	No	3.9	3.9	No
San Vicente @ Olympic	AM	6.5	6.5	No	4.3	4.3	No
	PM	6.3	6.3	No	4.1	4.1	No

Intersection	Peak Period ^a	Maximum 1-Hour 2020 Base Concentration (ppm) ^b	Maximum 1-Hour 2020 w/ Project Concentration (ppm) ^c	Significant 1-Hour Concentration Impact? ^d	Maximum 8-Hour 2020 Base Concentration (ppm) ^e	Maximum 8-Hour 2020 w/ Project Concentration (ppm) ^f	Significant 8-Hour Concentration Impact? ^d
San Vicente @ Wilshire	AM	6.6	6.5	No	4.3	4.3	No
	PM	6.7	6.5	No	4.4	4.3	No
Sepulveda @ Olympic	AM	6.4	6.5	No	4.2	4.3	No
	PM	6.8	6.8	No	4.5	4.5	No
Sepulveda @ Pico	AM	6.4	6.5	No	4.2	4.3	No
	PM	6.4	6.4	No	4.2	4.2	No
Vermont @ 6th	AM	6.3	6.2	No	4.1	4.1	No
	PM	6.5	6.5	No	4.3	4.3	No
Vermont @ 8th	AM	5.9	5.9	No	3.9	3.9	No
	PM	6.2	6.2	No	4.1	4.1	No
Vermont @ Olympic	AM	6.4	6.4	No	4.2	4.2	No
	PM	6.5	6.5	No	4.3	4.3	No
Veteran @ Olympic	AM	6.1	6.1	No	4.0	4.0	No
	PM	6.4	6.4	No	4.2	4.2	No
Veteran @ Santa Monica	AM	5.9	6.0	No	3.9	3.9	No
	PM	6.0	6.0	No	3.9	3.9	No
Veteran @ Sunset	AM	6.1	6.1	No	4.0	4.0	No
	PM	5.9	5.9	No	3.9	3.9	No
Veteran @ Wilshire	AM	7.4	7.2	No	4.9	4.8	No
	PM	6.9	6.8	No	4.6	4.5	No
W Century Park @ Olympic	AM	6.6	6.6	No	4.3	4.3	No
	PM	6.2	6.2	No	4.1	4.1	No
Western @ 3rd	AM	6.1	6.1	No	4.0	4.0	No
	PM	6.1	6.2	No	4.0	4.1	No
Western @ 6th	AM	5.9	6.0	No	3.9	3.9	No
	PM	6.1	6.1	No	4.0	4.0	No
Western @ Olympic	AM	6.3	6.4	No	4.1	4.2	No
	PM	6.4	6.4	No	4.2	4.2	No
Westwood @ Olympic	AM	6.4	6.5	No	4.2	4.3	No
	PM	7.0	7.0	No	4.6	4.6	No
Westwood @ Pico	AM	6.2	6.2	No	4.1	4.1	No
	PM	6.5	6.5	No	4.3	4.3	No
Westwood @ Santa Monica	AM	6.4	6.5	No	4.2	4.3	No
	PM	6.5	6.6	No	4.3	4.3	No

Intersection	Peak Period ^a	Maximum 1-Hour 2020 Base Concentration (ppm) ^b	Maximum 1-Hour 2020 w/ Project Concentration (ppm) ^c	Significant 1-Hour Concentration Impact? ^d	Maximum 8-Hour 2020 Base Concentration (ppm) ^e	Maximum 8-Hour 2020 w/ Project Concentration (ppm) ^f	Significant 8-Hour Concentration Impact? ^d
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Notes:

CALINE4 dispersion model output sheets and Emfac2007 emission factors are provided in Appendix A.

ppm = parts per million

^aPeak hour traffic volumes are based on the *Wilshire Boulevard Bus Rapid Transit Project Traffic Impact Analysis* prepared for the project by Iteris, 2009.

^bSCAQMD 2020 1-hour ambient background concentration (4.4 ppm) + 2020 base traffic CO 1-hour contribution.

^cSCAQMD 2020 1-hour ambient background concentration (4.4 ppm) + 2020 with-project traffic CO 1-hour contribution.

^dThe State standard for the 1-hour average CO concentration is 20 ppm, and the 8-hour average concentration is 9.0 ppm.

^eSCAQMD 2020 8-hour ambient background concentration (2.8 ppm) + 2020 base traffic CO 8-hour contribution.

^fSCAQMD 2020 8-hour ambient background concentration (2.8 ppm) + 2020 with-project traffic CO 8-hour contribution.

Source: ICF International, January 2010.

Table 9. Alternative Horizon (Year 2020)—Local Area Carbon Monoxide Dispersion Analysis

Intersection	Peak Period ^a	Maximum 1-Hour 2020 Base Concentration (ppm) ^b	Maximum 1-Hour 2020 w/ Alternative Concentration (ppm) ^c	Significant 1-Hour Concentration Impact? ^d	Maximum 8-Hour 2020 Base Concentration (ppm) ^e	Maximum 8-Hour 2020 w/ Alternative Concentration (ppm) ^f	Significant 8-Hour Concentration Impact? ^d
Alvarado @ Olympic	AM	6.2	6.1	No	4.1	4.0	No
	PM	6.3	6.3	No	4.1	4.1	No
Alvarado @ Wilshire	AM	6.1	6.1	No	4.0	4.0	No
	PM	6.1	6.1	No	4.0	4.0	No
Barrington @ Wilshire	AM	5.9	5.9	No	3.9	3.9	No
	PM	5.9	5.8	No	3.9	3.8	No
Beverly Glen @ Olympic	AM	6.7	6.7	No	4.4	4.4	No
	PM	6.7	6.7	No	4.4	4.4	No
Beverly Glen @ Santa Monica	AM	6.5	6.5	No	4.3	4.3	No
	PM	6.5	6.2	No	4.3	4.1	No
Bundy @ Olympic	AM	6.7	6.7	No	4.4	4.4	No
	PM	6.6	6.6	No	4.3	4.3	No
Bundy @ Wilshire	AM	6.0	6.0	No	3.9	3.9	No
	PM	6.0	6.0	No	3.9	3.9	No
Century Park W @ Santa Monica	AM	6.2	6.2	No	4.1	4.1	No
	PM	6.0	6.0	No	3.9	3.9	No
Crenshaw @ Olympic	AM	6.6	6.6	No	4.3	4.3	No
	PM	6.5	6.5	No	4.3	4.3	No
Crenshaw @ Wilshire	AM	6.0	5.9	No	3.9	3.9	No
	PM	6.1	6.0	No	4.0	3.9	No
E Century Park @ Olympic	AM	6.8	6.9	No	4.5	4.6	No
	PM	6.6	6.6	No	4.3	4.3	No

Intersection	Peak Period ^a	Maximum 1-Hour 2020 Base Concentration (ppm) ^b	Maximum 1-Hour 2020 w/ Alternative Concentration (ppm) ^c	Significant 1-Hour Concentration Impact? ^d	Maximum 8-Hour 2020 Base Concentration (ppm) ^e	Maximum 8-Hour 2020 w/ Alternative Concentration (ppm) ^f	Significant 8-Hour Concentration Impact? ^d
Fairfax @ 3rd	AM	6.2	6.2	No	4.1	4.1	No
	PM	6.2	6.2	No	4.1	4.1	No
Fairfax @ Olympic	AM	6.9	6.3	No	4.6	4.1	No
	PM	6.3	6.3	No	4.1	4.1	No
Fairfax @ Wilshire	AM	6.4	6.3	No	4.2	4.1	No
	PM	6.6	6.5	No	4.3	4.3	No
Highland @ 6th	AM	5.8	6.1	No	3.8	4.0	No
	PM	6.1	6.1	No	4.0	4.0	No
Highland @ Olympic	AM	6.1	6.0	No	4.0	3.9	No
	PM	6.1	6.1	No	4.0	4.0	No
La Brea @ Olympic	AM	6.5	6.5	No	4.3	4.3	No
	PM	6.7	6.7	No	4.4	4.4	No
La Brea @ Wilshire	AM	6.5	6.4	No	4.3	4.2	No
	PM	6.5	6.4	No	4.3	4.2	No
Overland @ Olympic	AM	6.3	6.3	No	4.1	4.1	No
	PM	6.6	6.6	No	4.3	4.3	No
Overland @ Santa Monica	AM	6.0	6.0	No	3.9	3.9	No
	PM	6.0	6.0	No	3.9	3.9	No
S. Beverly Glen @ Sunset	AM	5.9	5.9	No	3.9	3.9	No
	PM	5.9	5.9	No	3.9	3.9	No
S. Beverly Glen @ Wilshire	AM	6.4	6.8	No	4.2	4.5	No
	PM	6.3	6.2	No	4.1	4.1	No
San Vicente @ Olympic	AM	6.5	6.6	No	4.3	4.3	No
	PM	6.3	6.3	No	4.1	4.1	No
Sepulveda @ Olympic	AM	6.4	6.4	No	4.2	4.2	No
	PM	6.8	6.8	No	4.5	4.5	No
Sepulveda @ Pico	AM	6.4	6.4	No	4.2	4.2	No
	PM	6.4	6.4	No	4.2	4.2	No
Sepulveda @ Santa Monica	AM	6.2	6.2	No	4.1	4.1	No
	PM	6.2	6.2	No	4.1	4.1	No
Vermont @ 6th	AM	6.3	6.2	No	4.1	4.1	No
	PM	6.5	6.5	No	4.3	4.3	No
Vermont @ 8th	AM	5.9	5.9	No	3.9	3.9	No
	PM	6.2	6.2	No	4.1	4.1	No
Veteran @ Olympic	AM	6.1	6.1	No	4.0	4.0	No
	PM	6.4	6.4	No	4.2	4.2	No
Veteran @ Sunset	AM	6.1	6.1	No	4.0	4.0	No
	PM	5.9	5.9	No	3.9	3.9	No
W Century Park @ Olympic	AM	6.6	6.6	No	4.3	4.3	No
	PM	6.2	6.2	No	4.1	4.1	No
Western @ 3rd	AM	6.1	6.1	No	4.0	4.0	No
	PM	6.1	6.2	No	4.0	4.1	No

Intersection	Peak Period ^a	Maximum 1-Hour 2020 Base Concentration (ppm) ^b	Maximum 1-Hour 2020 w/ Alternative Concentration (ppm) ^c	Significant 1-Hour Concentration Impact? ^d	Maximum 8-Hour 2020 Base Concentration (ppm) ^e	Maximum 8-Hour 2020 w/ Alternative Concentration (ppm) ^f	Significant 8-Hour Concentration Impact? ^d
Western @ 6th	AM	5.9	6.0	No	3.9	3.9	No
	PM	6.1	6.1	No	4.0	4.0	No
Western @ Olympic	AM	6.3	6.3	No	4.1	4.1	No
	PM	6.4	6.4	No	4.2	4.2	No
Westwood @ Olympic	AM	6.4	6.4	No	4.2	4.2	No
	PM	7.0	7.1	No	4.6	4.7	No
Westwood @ Pico	AM	6.2	6.2	No	4.1	4.1	No
	PM	6.5	6.5	No	4.3	4.3	No
Westwood @ Santa Monica	AM	6.4	6.4	No	4.2	4.2	No
	PM	6.5	6.6	No	4.3	4.3	No

Notes:

CALINE4 dispersion model output sheets and Emfac2007 emission factors are provided in Appendix A.

ppm = parts per million

^aPeak hour traffic volumes are based on the *Wilshire Boulevard Bus Rapid Transit Project Traffic Impact Analysis* prepared for the project by Iteris, 2009.

^bSCAQMD 2020 1-hour ambient background concentration (4.4 ppm) + 2020 base traffic CO 1-hour contribution.

^cSCAQMD 2020 1-hour ambient background concentration (4.4 ppm) + 2020 with-alternative traffic CO 1-hour contribution.

^dThe State standard for the 1-hour average CO concentration is 20 ppm, and the 8-hour average concentration is 9.0 ppm.

^eSCAQMD 2020 8-hour ambient background concentration (2.8 ppm) + 2020 base traffic CO 8-hour contribution.

^fSCAQMD 2020 8-hour ambient background concentration (2.8 ppm) + 2020 with-alternative traffic CO 8-hour contribution.

Source: ICF International, January 2010.

5.3 Climate Change/Greenhouse Gas Emissions

Global climate change is caused by combined worldwide greenhouse gas emissions, and mitigating global climate change will require worldwide solutions. GHGs play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which could have otherwise escaped to space. Prominent GHGs contributing to this process include water vapor, CO₂, N₂O, CH₄, O₃, and certain hydro- and fluorocarbons. This phenomenon, known as the "greenhouse effect", keeps the Earth's atmosphere near the surface warmer than it would be otherwise and allows for successful habitation by humans and other forms of life. Increases in these gases lead to more absorption of radiation and warm the lower atmosphere further, thereby increasing evaporation rates and temperatures near the surface. Emissions of GHGs in excess of natural ambient concentrations are thought to be responsible for the enhancement of the greenhouse effect and to contribute to what is termed "global warming," a trend of unnatural warming of the Earth's natural climate. Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as O₃ precursors) and TACs, which are pollutants of regional and local concern.

One of the main strategies to reduce California GHG emissions is to make California's transportation system more efficient. The California Department of Transportation (Caltrans) and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98% of California's GHG emissions are from the burning of fossil fuels and 40% of all human-made GHG emissions are from transportation, Caltrans has created and is implementing the *Climate Action Program at Caltrans* (December 2006).

Caltrans' primary strategy to reduce State GHG emissions is to make California's transportation system more efficient. The highest levels of CO₂ from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 mph and speeds over 55 mph). Relieving congestion by enhancing operations and improving travel times in high congestion travel corridors will lead to an overall reduction in GHG emissions. As the objective of the proposed project is to reduce congestion and improve operational efficiency within the immediate project vicinity, GHG emissions after completion of the proposed project would be reduced when compared to existing conditions.

During construction, existing ARB regulations (Title 13 of the California Code of Regulations, Sections 2480 and 2485), which limit idling of diesel-fueled commercial motor vehicles, would help to limit GHG emissions associated with project-related construction vehicles.

Table 10 presents an estimate of project-related GHG emissions of CO₂e. As shown therein, the proposed project's contribution to GHG emissions during short-term construction activities is estimated to be 62 metric tons (emissions would be less under the project alternative due to reduced construction activity). In an effort to put this number into perspective, statewide CO₂e emissions for year 2006 were estimated to be 479.8 million metric tons. As such, the relative amounts of GHG emissions associated with this project are negligible. The proposed project's amount of emissions, without considering other cumulative global emissions, would be insufficient to cause substantial climate change directly. Thus, project emissions, in isolation, are considered less than significant. However, climate change is a global cumulative impact, and the proper context for analysis of this issue is not a project's emissions in isolation, but rather as a contribution to cumulative GHG emissions.

Because quantitative GHG guidelines, including relevant thresholds, have not been developed by the SCAQMD, these emissions are provided for information purposes only. According to a recent white paper by the Association of Environmental Professionals, "an individual project does not generate enough GHG emissions to significantly influence global climate change. Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHG emissions." Project-related impacts are expected to be less than significant because climate change would not occur directly from project emissions. Nevertheless, mitigation measures to reduce project-related GHG emissions by the greatest extent feasible are prescribed below.

Table 10. Estimate of Project-related Greenhouse Gas Emissions (Metric Tons per Year)^a

	CO ₂ e
California State-wide Average Daily Emissions (year 2006)	479,800,000
Project Emissions	
Construction-period Emissions (2010)	62
SCAQMD Daily Significance Threshold	N/A
Exceed Significance Threshold?	NA

Notes:
^a URBEMIS 2007 output and energy emissions calculation worksheets are provided in the Air Quality Appendix.
Source: ICF International, August 2008.

Mitigation Measures

- AQ-1** To the extent applicable and practicable, minimize, reuse, and recycle construction-related waste.
- AQ-2** Minimize grading, earth-moving, and other energy-intensive construction practices.
- AQ-3** To the extent applicable and practicable, replacement trees or landscaping shall be provided.
- AQ-4** To the extent applicable and practicable, use solar power or electricity from power poles rather than temporary diesel power generators.

Residual Impacts

As described above, the proposed project would serve to reduce GHG emissions, in comparison to existing conditions, by improving existing traffic circulation and relieving existing local congestion. Implementation of prescribed mitigation measures during construction would further reduce the proposed project's GHG emissions. As such, the proposed project would not conflict with the State's goal of reducing GHG emissions to 1990 levels by 2020. Project impacts relative to GHG emissions and climate change would be less than significant.

6.0 Project Consistency with Regional AQMP

SCAQMD is required, pursuant to the CAA, to reduce emissions of criteria pollutants for which the Basin is in non-attainment (i.e., O₃, PM₁₀, and PM_{2.5}). The proposed project would be subject to SCAQMD's AQMP. The AQMP contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are

developed, in part, based on regional population, housing, and employment projections prepared by SCAG.

The proposed project is consistent with the all local general plans. The proposed project would be compatible with the surrounding uses.

Because the proposed project is consistent with the local general plan, pursuant to SCAQMD guidelines, the proposed project is considered consistent with the region's AQMP. As such, project-related emissions are accounted for in the AQMP, which is crafted to bring the Basin into attainment for all criteria pollutants. Accordingly, the proposed project would be consistent with the projections in the AQMP, thus resulting in a less-than-significant impact.

The SCAQMD is required, pursuant to the Clean Air Act, to reduce emissions of criteria pollutants for which the Basin is in non-attainment (i.e., O₃, PM₁₀, and PM_{2.5}). The project would be subject to the SCAQMD's AQMP. The AQMP contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by SCAG.

7.0 Cumulative Impacts

The SCAQMD's approach for assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and State Clean Air Acts. As previously discussed, the proposed project would be consistent with the AQMP, which is intended to bring the Basin into attainment for all criteria pollutants.²⁷

In addition, the mass regional emissions calculated for the proposed project and presented earlier in Table 4 (regional construction emissions) would not exceed applicable SCAQMD daily significance thresholds, which are designed to assist the region in attaining the applicable state and national ambient air quality standards. Both the proposed project and project alternative would comply with the SCAQMD's Rule 403 (fugitive dust control) during construction, as well as all other adopted AQMP emissions control measures. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions control measures) would also be imposed on all projects Basin-

²⁷ CEQA Guidelines Section 15064(h)(3) states "A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g. water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency."

wide, which would include all related projects. As such, cumulative impacts with respect to criteria pollutant emissions would be less than significant.

With regard to climate change and GHG emissions, the amounts of construction- and operations-period GHG emissions that would result from development of the proposed project and project alternative are negligible. The proposed project's amount of emissions, without considering other cumulative global emissions, would be insufficient to cause climate change. The proposed project would be consistent with the State's goals of reducing GHG emissions to 1990 levels by 2020. As such, the proposed project's contribution to climate change/worldwide GHG emissions would be less than significant.

8.0 Transportation Conformity Determination (NEPA)

The concept of transportation conformity was introduced in the 1977 federal CAA, which includes a provision to ensure that federal transportation investments conform to the State Implementation Plan (SIP) for meeting the NAAQS. Conformity requirements were made substantially more rigorous in the federal CAA amendments of 1990, and the transportation conformity regulation that details implementation of the conformity requirements was first issued in November 1993, though the requirements have been amended many times. The most recent complete set of amendments to the Transportation Conformity Rule is found at 40 Code of Federal Regulations (CFR) parts 51 and 93 (August 15, 1997).

The proposed project is included in the Southern California Association of Governments (SCAG) Final 2008 Regional Transportation Plan (RTP) and SCAG Final Adopted 2008 Regional Transportation Improvement Program (RTIP) including Amendment 1-32, under project identification number LA29202W. The Final 2008 RTP and Final 2008 RTIP were found to be conforming by Federal Highway Administration (FHWA) on June 6, 2008 and November 17, 2008, respectively. The project design concept and scope as described in this Air Quality Report is consistent with the project description in the currently conforming RTP and RTIP. As such, the project's operational emissions, which include the ozone (O₃) precursors reactive organic gases (ROG) and nitrogen oxides (NO_x), meet regional transportation conformity determination requirements imposed by the U.S. Environmental Protection Agency (EPA). In addition, the project qualifies for an exemption from the requirement to determine conformity per 23 CFR 93.126. As such, the project does not require a project-level conformity analysis.

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10.0 List of Preparers

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Appendix A Air Quality Worksheets

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: G:\Los Angeles\3_Projects_Air Quality_Metro\Wilshire Bus Lane\Impact Analysis\URBEMIS\WilshireBRT.urb924

Project Name: Wilshire BRT

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (lbs/day unmitigated)	3.00	16.47	10.93	0.00	0.76	1.35	1.39	0.16	1.24	1.25	1,581.72

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 4/1/2010-4/30/2010 Active	1.25	8.71	6.10	0.00	<u>0.76</u>	0.63	<u>1.39</u>	<u>0.16</u>	0.58	0.74	956.70
Days: 22											
Demolition 04/01/2010-04/30/2010	1.25	8.71	6.10	0.00	0.76	0.63	1.39	0.16	0.58	0.74	956.70
Fugitive Dust	0.00	0.00	0.00	0.00	0.75	0.00	0.75	0.16	0.00	0.16	0.00
Demo Off Road Diesel	1.14	7.68	4.68	0.00	0.00	0.59	0.59	0.00	0.54	0.54	700.30
Demo On Road Diesel	0.07	0.97	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	132.01
Demo Worker Trips	0.03	0.06	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 5/3/2010-7/30/2010 Active	<u>3.00</u>	<u>16.47</u>	<u>10.93</u>	<u>0.00</u>	0.02	<u>1.35</u>	1.37	0.01	<u>1.24</u>	<u>1.25</u>	<u>1,581.72</u>
Days: 65											
Asphalt 05/01/2010-07/30/2010	3.00	16.47	10.93	0.00	0.02	1.35	1.37	0.01	1.24	1.25	1,581.72
Paving Off-Gas	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	14.87	8.27	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,131.92
Paving On Road Diesel	0.11	1.48	0.57	0.00	0.01	0.06	0.07	0.00	0.06	0.06	201.02
Paving Worker Trips	0.07	0.12	2.10	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79

Phase Assumptions

Phase: Demolition 4/1/2010 - 4/30/2010 - Default Demolition Description

Building Volume Total (cubic feet): 35880

Building Volume Daily (cubic feet): 1794

On Road Truck Travel (VMT): 31.15

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Paving 5/1/2010 - 7/30/2010 - Default Paving Description

Acres to be Paved: 8.72

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: G:\Los Angeles\3_Projects_Air Quality_Metro\Wilshire Bus Lane\Impact Analysis\URBEMIS\WilshireBRT.urb924

Project Name: Wilshire BRT

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (tons/year unmitigated)	0.11	0.63	0.42	0.00	0.01	0.05	0.06	0.00	0.05	0.05	61.93

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010	0.11	0.63	0.42	0.00	0.01	0.05	0.06	0.00	0.05	0.05	61.93
Demolition 04/01/2010-04/30/2010	0.01	0.10	0.07	0.00	0.01	0.01	0.02	0.00	0.01	0.01	10.52
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.01	0.08	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	7.70
Demo On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.45
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37
Asphalt 05/01/2010-07/30/2010	0.10	0.54	0.36	0.00	0.00	0.04	0.04	0.00	0.04	0.04	51.41
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.08	0.48	0.27	0.00	0.00	0.04	0.04	0.00	0.04	0.04	36.79
Paving On Road Diesel	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.53
Paving Worker Trips	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.09

Phase Assumptions

Page: 1

1/20/2010 02:01:48 PM

Phase: Demolition 4/1/2010 - 4/30/2010 - Default Demolition Description

Building Volume Total (cubic feet): 35880

Building Volume Daily (cubic feet): 1794

On Road Truck Travel (VMT): 31.15

Off-Road Equipment:

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Phase: Paving 5/1/2010 - 7/30/2010 - Default Paving Description

Acres to be Paved: 8.72

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

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2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Title : Los Angeles County Avg Annual CYrs 2012 and 2020 Default Title
 Version : Emfac2007 V2.3 Nov 1 2006
 Run Date : 2010/01/15 12:10:52
 Scen Year: 2012 -- All model years in the range 1968 to 2012 selected
 Season : Annual
 Area : Los Angeles

 Year: 2012 -- Model Years 1968 to 2012 Inclusive -- Annual
 Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average Los Angeles County Average

Table 1: Running Exhaust Emissions (grams/mile)

Pollutant Name: Carbon Monoxide Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	ALL
3	3.564	7.023	5.094	7.055	16.073	8.471	11.718	23.803	8.693	28.937	31.587	21.361	43.451	5.703
4	3.45	6.715	4.935	6.775	16.073	8.471	11.718	23.803	8.693	28.937	31.587	21.361	43.451	5.558
5	3.344	6.432	4.786	6.516	16.073	8.471	11.718	23.803	8.693	28.937	31.587	21.361	43.451	5.423
6	3.243	6.166	4.645	6.275	14.754	7.785	10.797	22.162	7.998	26.411	30.346	19.66	39.877	5.188
7	3.148	5.921	4.511	6.05	13.572	7.169	9.969	20.633	7.374	24.162	29.208	18.132	36.677	4.971
8	3.058	5.693	4.385	5.841	12.513	6.616	9.223	19.21	6.813	22.156	28.165	16.758	33.808	4.77
9	2.974	5.482	4.266	5.646	11.562	6.119	8.55	17.885	6.307	20.364	27.209	15.519	31.232	4.583
10	2.894	5.285	4.152	5.463	10.706	5.671	7.942	16.653	5.852	18.76	26.334	14.402	28.916	4.409
11	2.818	5.103	4.044	5.293	9.936	5.268	7.393	15.509	5.44	17.322	25.533	13.394	26.83	4.247
12	2.746	4.932	3.942	5.133	9.241	4.903	6.895	14.45	5.068	16.032	24.801	12.481	24.95	4.096
13	2.678	4.773	3.844	4.982	8.613	4.574	6.443	13.47	4.732	14.873	24.133	11.655	23.252	3.956
14	2.613	4.624	3.751	4.841	8.046	4.276	6.033	12.568	4.427	13.829	23.525	10.905	21.718	3.825
15	2.551	4.484	3.663	4.708	7.533	4.006	5.661	11.739	4.15	12.888	22.972	10.225	20.329	3.702
16	2.492	4.354	3.578	4.582	7.067	3.76	5.322	10.981	3.898	12.039	22.472	9.608	19.072	3.588
17	2.436	4.231	3.497	4.464	6.645	3.538	5.014	10.293	3.67	11.272	22.022	9.046	17.931	3.481
18	2.382	4.116	3.42	4.353	6.262	3.336	4.732	9.672	3.462	10.579	21.618	8.534	16.896	3.381
19	2.331	4.008	3.346	4.247	5.914	3.152	4.476	9.096	3.272	9.951	21.259	8.068	15.955	3.287
20	2.282	3.907	3.275	4.147	5.598	2.984	4.242	8.753	3.1	9.381	20.943	7.643	15.1	3.203
21	2.235	3.811	3.208	4.053	5.31	2.831	4.028	8.429	2.942	8.865	20.667	7.256	14.322	3.125
22	2.19	3.722	3.143	3.964	5.047	2.692	3.833	8.123	2.798	8.397	20.431	6.902	13.614	3.05
23	2.147	3.637	3.081	3.879	4.809	2.566	3.654	7.833	2.667	7.971	20.233	6.579	12.97	2.98
24	2.105	3.557	3.021	3.799	4.591	2.45	3.491	7.559	2.547	7.585	20.073	6.284	12.383	2.913
25	2.066	3.482	2.964	3.722	4.393	2.345	3.341	7.299	2.438	7.234	19.949	6.014	11.849	2.851
26	2.028	3.412	2.909	3.65	4.213	2.248	3.205	7.053	2.338	6.915	19.86	5.768	11.363	2.791
27	1.992	3.345	2.856	3.582	4.049	2.161	3.08	6.821	2.247	6.625	19.808	5.544	10.921	2.735
28	1.957	3.282	2.806	3.517	3.9	2.081	2.966	6.601	2.164	6.362	19.791	5.339	10.519	2.682
29	1.923	3.224	2.757	3.455	3.765	2.009	2.862	6.394	2.089	6.124	19.811	5.152	10.154	2.632
30	1.891	3.168	2.71	3.397	3.642	1.943	2.767	6.198	2.02	5.908	19.866	4.982	9.823	2.584
31	1.861	3.116	2.666	3.342	3.531	1.883	2.68	6.013	1.957	5.713	19.958	4.827	9.524	2.539
32	1.831	3.068	2.623	3.29	3.431	1.829	2.602	5.839	1.901	5.537	20.088	4.687	9.254	2.497
33	1.803	3.022	2.582	3.241	3.341	1.781	2.531	5.676	1.849	5.378	20.257	4.56	9.012	2.457
34	1.776	2.98	2.542	3.194	3.26	1.737	2.466	5.523	1.803	5.236	20.466	4.446	8.796	2.42
35	1.75	2.94	2.504	3.15	3.189	1.698	2.408	5.379	1.762	5.11	20.716	4.344	8.603	2.385
36	1.725	2.904	2.468	3.109	3.125	1.664	2.356	5.246	1.725	4.998	21.01	4.252	8.434	2.352
37	1.701	2.87	2.433	3.071	3.07	1.633	2.31	5.122	1.693	4.9	21.349	4.172	8.285	2.321
38	1.679	2.839	2.4	3.035	3.022	1.607	2.27	5.007	1.664	4.814	21.737	4.101	8.158	2.293
39	1.657	2.811	2.368	3.001	2.982	1.584	2.234	4.901	1.64	4.741	22.175	4.039	8.05	2.267
40	1.637	2.785	2.338	2.97	2.949	1.565	2.204	4.805	1.619	4.68	22.668	3.987	7.96	2.242

Title : Los Angeles County Avg Annual CYrs 2012 and 2020 Default Title

Version : Emfac2007 V2.3 Nov 1 2006

Run Date : 2010/01/15 12:10:52

Scen Year: 2020 -- All model years in the range 1976 to 2020 selected

Season : Annual

Area : Los Angeles

Year: 2020 -- Model Years 1976 to 2020 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

County Average Los Angeles County Average

Table 1: Running Exhaust Emissions (grams/mile)

Pollutant Name: Carbon Monoxide Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	ALL
3	1.679	2.718	3.052	4.018	6.974	3.292	6.594	10.538	5.749	21.491	25.073	15.342	7.94	2.941
4	1.64	2.643	2.978	3.894	6.974	3.292	6.594	10.538	5.749	21.491	25.073	15.342	7.94	2.887
5	1.603	2.572	2.907	3.777	6.974	3.292	6.594	10.538	5.749	21.491	25.073	15.342	7.94	2.835
6	1.567	2.503	2.839	3.667	6.404	3.031	6.087	9.68	5.301	19.616	24.176	14.139	7.288	2.727
7	1.533	2.438	2.774	3.564	5.894	2.796	5.63	8.882	4.897	17.947	23.349	13.056	6.705	2.626
8	1.5	2.375	2.711	3.466	5.435	2.584	5.217	8.142	4.533	16.458	22.586	12.08	6.181	2.531
9	1.467	2.316	2.651	3.373	5.024	2.394	4.844	7.456	4.204	15.127	21.884	11.2	5.711	2.443
10	1.437	2.259	2.592	3.285	4.654	2.222	4.506	6.823	3.907	13.937	21.237	10.405	5.289	2.36
11	1.407	2.205	2.536	3.201	4.32	2.067	4.2	6.242	3.638	12.87	20.641	9.685	4.908	2.283
12	1.378	2.153	2.482	3.122	4.019	1.926	3.922	5.71	3.395	11.912	20.092	9.034	4.565	2.21
13	1.35	2.103	2.43	3.047	3.747	1.799	3.67	5.227	3.174	11.051	19.587	8.443	4.255	2.143
14	1.323	2.056	2.38	2.975	3.501	1.684	3.44	4.792	2.973	10.276	19.124	7.906	3.974	2.079
15	1.297	2.01	2.331	2.906	3.278	1.579	3.231	4.403	2.79	9.577	18.699	7.419	3.721	2.02
16	1.272	1.967	2.284	2.841	3.077	1.484	3.04	4.059	2.624	8.947	18.311	6.975	3.491	1.964
17	1.247	1.925	2.239	2.778	2.893	1.397	2.867	3.76	2.473	8.377	17.957	6.571	3.282	1.912
18	1.223	1.884	2.195	2.719	2.727	1.318	2.708	3.505	2.335	7.862	17.635	6.203	3.093	1.863
19	1.2	1.846	2.153	2.661	2.576	1.246	2.563	3.28	2.209	7.396	17.345	5.867	2.921	1.817
20	1.178	1.808	2.112	2.607	2.438	1.181	2.43	3.179	2.094	6.973	17.084	5.561	2.765	1.777
21	1.157	1.772	2.072	2.554	2.313	1.121	2.309	3.085	1.988	6.59	16.851	5.281	2.623	1.739
22	1.136	1.738	2.034	2.504	2.199	1.066	2.198	2.997	1.892	6.242	16.646	5.025	2.493	1.702
23	1.115	1.705	1.997	2.455	2.095	1.016	2.096	2.914	1.804	5.926	16.468	4.791	2.375	1.668
24	1.096	1.673	1.961	2.409	2.001	0.971	2.003	2.836	1.724	5.639	16.315	4.576	2.268	1.634
25	1.077	1.642	1.926	2.365	1.914	0.929	1.917	2.764	1.65	5.378	16.188	4.381	2.17	1.603
26	1.058	1.612	1.892	2.322	1.836	0.891	1.839	2.696	1.583	5.141	16.086	4.202	2.081	1.573
27	1.04	1.584	1.859	2.281	1.764	0.857	1.768	2.633	1.521	4.926	16.008	4.038	2	1.544
28	1.022	1.556	1.828	2.241	1.699	0.825	1.702	2.574	1.465	4.731	15.956	3.888	1.926	1.516
29	1.006	1.529	1.797	2.203	1.64	0.796	1.642	2.519	1.413	4.554	15.928	3.752	1.859	1.49
30	0.989	1.504	1.767	2.167	1.587	0.77	1.587	2.469	1.366	4.393	15.925	3.627	1.799	1.465
31	0.973	1.479	1.738	2.132	1.538	0.746	1.537	2.421	1.323	4.248	15.948	3.514	1.744	1.441
32	0.957	1.455	1.71	2.098	1.495	0.724	1.491	2.378	1.284	4.117	15.997	3.411	1.695	1.418
33	0.942	1.432	1.683	2.066	1.455	0.704	1.449	2.338	1.249	4	16.073	3.317	1.65	1.397
34	0.928	1.41	1.657	2.035	1.42	0.687	1.412	2.301	1.217	3.894	16.176	3.233	1.61	1.376
35	0.913	1.388	1.631	2.005	1.388	0.671	1.378	2.268	1.188	3.8	16.308	3.157	1.575	1.356
36	0.9	1.368	1.606	1.977	1.361	0.657	1.347	2.238	1.162	3.717	16.469	3.089	1.544	1.338
37	0.886	1.348	1.582	1.949	1.336	0.644	1.319	2.211	1.139	3.644	16.662	3.028	1.516	1.32
38	0.873	1.329	1.559	1.923	1.315	0.633	1.295	2.187	1.119	3.581	16.888	2.974	1.493	1.303
39	0.86	1.31	1.537	1.898	1.297	0.624	1.273	2.167	1.101	3.527	17.148	2.928	1.473	1.287
40	0.848	1.292	1.515	1.874	1.283	0.615	1.255	2.149	1.085	3.481	17.445	2.888	1.457	1.272

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: BUNDY DR AND OLYMPIC BLVD PMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	1821	2.6	.0	10.5
B. NA	2	-150	2	0	AG	1639	5.7	.0	9.9
C. ND	2	0	2	150	AG	1922	5.7	.0	9.9
D. NE	2	150	2	450	AG	1922	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	973	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	852	5.7	.0	9.9
G. SD	-2	0	-2	-150	AG	1379	5.7	.0	9.9
H. SE	-2	-150	-2	-450	AG	1379	2.6	.0	10.5
I. WF	450	2	150	2	AG	1917	2.6	.0	10.5
J. WA	150	2	0	2	AG	1634	5.7	.0	9.9
K. WD	0	2	-150	2	AG	1709	4.0	.0	9.9
L. WE	-150	2	-450	2	AG	1709	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	2186	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	1932	5.7	.0	9.9
O. ED	0	-2	150	-2	AG	1887	4.0	.0	9.9
P. EE	150	-2	450	-2	AG	1887	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	182	4.6	.0	9.9
R. SL	0	0	-2	150	AG	121	4.6	.0	9.9
S. WL	0	0	150	2	AG	283	4.0	.0	9.9
T. EL	0	0	-150	-2	AG	254	4.0	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)				
						D	E	F	G	H
1. NE3	185.	4.1	.0	1.7	.3	.0	.0	.0	.7	.1
2. SE3	275.	4.2	.0	.7	.0	.0	.0	.0	.4	.0
3. SW3	84.	3.9	.0	.5	.0	.0	.0	.0	.6	.0
4. NW3	175.	3.8	.1	.8	.0	.0	.0	.1	1.4	.0

RECEPTOR	* I	* J	* K	* L	* M	* N	* O	* P	* Q	* R	* S	* T
1. NE3	.0	.7	.0	.0	.0	.0	.4	.0	.1	.0	.0	.0
2. SE3	.0	.0	.6	.1	.0	1.9	.2	.0	.0	.0	.0	.2
3. SW3	.0	.8	.0	.0	.0	.3	1.3	.0	.0	.0	.2	.0
4. NW3	.0	.0	.5	.0	.0	.6	.0	.0	.1	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: BUNDY DR AND WILSHIRE BLVD PMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	1273	2.6	.0	10.5
B. NA	2	-150	2	0	AG	1065	5.7	.0	9.9
C. ND	2	0	2	150	AG	1192	5.7	.0	9.9
D. NE	2	150	2	450	AG	1192	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	689	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	556	5.6	.0	9.9
G. SD	-2	0	-2	-150	AG	690	4.6	.0	9.9
H. SE	-2	-150	-2	-450	AG	690	2.6	.0	10.5
I. WF	450	2	150	2	AG	1585	2.6	.0	10.5
J. WA	150	2	0	2	AG	1442	5.7	.0	9.9
K. WD	0	2	-150	2	AG	1616	4.0	.0	9.9
L. WE	-150	2	-450	2	AG	1616	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	1327	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	1190	5.7	.0	9.9
O. ED	0	-2	150	-2	AG	1376	4.0	.0	9.9
P. EE	150	-2	450	-2	AG	1376	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	208	4.6	.0	9.9
R. SL	0	0	-2	150	AG	133	4.6	.0	9.9
S. WL	0	0	150	2	AG	143	3.8	.0	9.9
T. EL	0	0	-150	-2	AG	137	3.8	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)						
						D	E	F	G	H		
1. NE3	265.	3.0	.0	.0	.5	.0	.0	.2	.0	.0		
2. SE3	275.	2.9	.0	.4	.0	.0	.0	.0	.2	.0		
3. SW3	84.	2.8	.0	.3	.0	.0	.0	.0	.2	.0		
4. NW3	95.	3.1	.0	.0	.4	.0	.0	.2	.0	.0		

RECEPTOR	I	J	K	L	M	CONC/LINK (PPM)						
						N	O	P	Q	R	S	T
1. NE3	.0	.2	1.2	.0	.1	.6	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.5	.1	.0	1.3	.1	.0	.0	.0	.0	.0
3. SW3	.0	.8	.0	.0	.0	.2	1.0	.0	.0	.0	.0	.0
4. NW3	.0	1.5	.2	.0	.0	.0	.5	.1	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: CRENSHAW BLVD AND WILSHIRE BLVD PMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	1253	2.6	.0	10.5
B. NA	2	-150	2	0	AG	624	5.7	.0	9.9
C. ND	2	0	2	150	AG	0	3.1	.0	9.9
D. NE	2	150	2	450	AG	0	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	0	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	0	4.8	.0	9.9
G. SD	-2	0	-2	-150	AG	846	5.7	.0	9.9
H. SE	-2	-150	-2	-450	AG	846	2.6	.0	10.5
I. WF	450	2	150	2	AG	1269	2.6	.0	10.5
J. WA	150	2	0	2	AG	941	4.6	.0	9.9
K. WD	0	2	-150	2	AG	1570	3.2	.0	9.9
L. WE	-150	2	-450	2	AG	1570	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	1559	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	1559	5.2	.0	9.9
O. ED	0	-2	150	-2	AG	1665	3.2	.0	9.9
P. EE	150	-2	450	-2	AG	1665	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	629	5.7	.0	9.9
R. SL	0	0	-2	150	AG	0	4.8	.0	9.9
S. WL	0	0	150	2	AG	328	3.6	.0	9.9
T. EL	0	0	-150	-2	AG	0	3.6	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)								
						D	E	F	G	H				
1. NE3	185.	2.5	.0	.7	.0	.0	.0	.0	.5	.0				
2. SE3	275.	3.0	.0	.3	.0	.0	.0	.0	.3	.0				
3. SW3	85.	2.7	.0	.2	.0	.0	.0	.0	.3	.0				
4. NW3	175.	2.7	.1	.4	.0	.0	.0	.0	.9	.0				

RECEPTOR	I	J	K	L	M	CONC/LINK (PPM)								
						N	O	P	Q	R	S	T		
1. NE3	.0	.3	.0	.0	.0	.0	.3	.0	.5	.0	.0	.0		
2. SE3	.0	.0	.4	.1	.0	1.5	.1	.0	.2	.0	.0	.0		
3. SW3	.1	.4	.0	.0	.0	.2	.9	.0	.2	.0	.2	.0		
4. NW3	.0	.0	.4	.0	.0	.4	.0	.0	.5	.0	.0	.0		

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: OVERLAND AVE AND OLYMPIC BLVD PMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	657	2.6	.0	10.5
B. NA	2	-150	2	0	AG	557	5.7	.0	9.9
C. ND	2	0	2	150	AG	492	5.7	.0	9.9
D. NE	2	150	2	450	AG	492	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	625	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	447	5.7	.0	9.9
G. SD	-2	0	-2	-150	AG	842	5.7	.0	9.9
H. SE	-2	-150	-2	-450	AG	842	2.6	.0	10.5
I. WF	450	2	150	2	AG	3447	2.6	.0	10.5
J. WA	150	2	0	2	AG	3118	5.0	.0	9.9
K. WD	0	2	-150	2	AG	3210	3.1	.0	9.9
L. WE	-150	2	-450	2	AG	3210	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	2136	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	2097	5.0	.0	9.9
O. ED	0	-2	150	-2	AG	2321	3.1	.0	9.9
P. EE	150	-2	450	-2	AG	2321	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	100	5.4	.0	9.9
R. SL	0	0	-2	150	AG	178	5.4	.0	9.9
S. WL	0	0	150	2	AG	329	3.6	.0	9.9
T. EL	0	0	-150	-2	AG	39	3.5	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)						
						D	E	F	G	H		
1. NE3	95.	3.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	275.	3.5	.0	.2	.0	.0	.0	.0	.0	.3	.0	.0
3. SW3	84.	3.6	.0	.2	.0	.0	.0	.0	.0	.3	.0	.0
4. NW3	95.	4.2	.0	.0	.2	.0	.0	.0	.2	.0	.0	.0

RECEPTOR	I	J	K	L	M	CONC/LINK (PPM)						
						N	O	P	Q	R	S	T
1. NE3	.2	2.9	.0	.0	.0	.0	.5	.2	.0	.0	.2	.0
2. SE3	.0	.0	.7	.2	.0	1.8	.2	.0	.0	.0	.0	.0
3. SW3	.1	1.2	.0	.0	.0	.3	1.2	.0	.0	.0	.2	.0
4. NW3	.1	2.5	.3	.0	.0	.0	.5	.2	.0	.0	.2	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: W CENTURY PARK AND OLYMPIC BLVD AMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	0	2.6	.0	10.5
B. NA	2	-150	2	0	AG	0	5.7	.0	9.9
C. ND	2	0	2	150	AG	1112	5.7	.0	9.9
D. NE	2	150	2	450	AG	1112	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	250	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	98	5.7	.0	9.9
G. SD	-2	0	-2	-150	AG	0	5.7	.0	9.9
H. SE	-2	-150	-2	-450	AG	0	2.6	.0	10.5
I. WF	450	2	150	2	AG	2360	2.6	.0	10.5
J. WA	150	2	0	2	AG	2360	5.0	.0	9.9
K. WD	0	2	-150	2	AG	2250	3.1	.0	9.9
L. WE	-150	2	-450	2	AG	2250	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	3778	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	2874	5.0	.0	9.9
O. ED	0	-2	150	-2	AG	3026	3.1	.0	9.9
P. EE	150	-2	450	-2	AG	3026	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	0	5.7	.0	9.9
R. SL	0	0	-2	150	AG	152	5.7	.0	9.9
S. WL	0	0	150	2	AG	0	3.5	.0	9.9
T. EL	0	0	-150	-2	AG	904	4.6	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	D	E	F	G	H
1. NE3	264.	3.9	.0	.0	.4	.0	.0	.0	.0	.0
2. SE3	275.	3.9	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	275.	4.1	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	95.	3.5	.0	.0	.3	.0	.0	.0	.0	.0

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.3	1.1	.0	.2	1.1	.0	.0	.0	.0	.0	.6
2. SE3	.0	.0	.5	.2	.2	2.3	.2	.0	.0	.0	.0	.6
3. SW3	.0	.0	.5	.2	.2	2.7	.0	.0	.0	.0	.0	.6
4. NW3	.1	1.9	.2	.0	.0	.0	.7	.2	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: W CENTURY PARK AND OLYMPIC BLVD PMNP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	0	2.6	.0	10.5
B. NA	2	-150	2	0	AG	0	5.7	.0	9.9
C. ND	2	0	2	150	AG	265	5.2	.0	9.9
D. NE	2	150	2	450	AG	265	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	860	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	698	5.7	.0	9.9
G. SD	-2	0	-2	-150	AG	0	4.1	.0	9.9
H. SE	-2	-150	-2	-450	AG	0	2.6	.0	10.5
I. WF	450	2	150	2	AG	2293	2.6	.0	10.5
J. WA	150	2	0	2	AG	2293	5.0	.0	9.9
K. WD	0	2	-150	2	AG	2931	3.1	.0	9.9
L. WE	-150	2	-450	2	AG	2931	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	2175	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	1970	5.0	.0	9.9
O. ED	0	-2	150	-2	AG	2132	3.1	.0	9.9
P. EE	150	-2	450	-2	AG	2132	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	0	5.7	.0	9.9
R. SL	0	0	-2	150	AG	162	5.7	.0	9.9
S. WL	0	0	150	2	AG	0	3.5	.0	9.9
T. EL	0	0	-150	-2	AG	205	3.5	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)					
						D	E	F	G	H	
1. NE3	265.	3.3	.0	.0	.0	.0	.0	.2	.0	.0	
2. SE3	275.	2.9	.0	.0	.0	.0	.0	.0	.0	.0	
3. SW3	275.	3.0	.0	.0	.0	.0	.0	.0	.0	.0	
4. NW3	95.	3.3	.0	.0	.0	.0	.0	.3	.0	.0	

RECEPTOR	CONC/LINK (PPM)											
	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.3	1.5	.1	.2	.8	.0	.0	.0	.0	.0	.1
2. SE3	.0	.0	.6	.2	.0	1.7	.2	.0	.0	.0	.0	.1
3. SW3	.0	.0	.6	.2	.1	1.9	.0	.0	.0	.0	.0	.1
4. NW3	.1	1.9	.2	.0	.0	.0	.5	.2	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: CRENSHAW BLVD AND OLYMPIC BLVD AMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	1225	2.6	.0	10.5
B. NA	2	-150	2	0	AG	1076	5.7	.0	9.9
C. ND	2	0	2	150	AG	1165	5.7	.0	9.9
D. NE	2	150	2	450	AG	1165	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	1188	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	1121	5.7	.0	9.9
G. SD	-2	0	-2	-150	AG	1168	5.7	.0	9.9
H. SE	-2	-150	-2	-450	AG	1168	2.6	.0	10.5
I. WF	450	2	150	2	AG	2629	2.6	.0	10.5
J. WA	150	2	0	2	AG	2476	5.6	.0	9.9
K. WD	0	2	-150	2	AG	2675	3.7	.0	9.9
L. WE	-150	2	-450	2	AG	2675	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	1472	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	1402	5.6	.0	9.9
O. ED	0	-2	150	-2	AG	1506	3.7	.0	9.9
P. EE	150	-2	450	-2	AG	1506	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	149	4.6	.0	9.9
R. SL	0	0	-2	150	AG	67	4.6	.0	9.9
S. WL	0	0	150	2	AG	153	3.7	.0	9.9
T. EL	0	0	-150	-2	AG	70	3.7	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	D	E	F	G	H
1. NE3	264.	3.7	.0	.0	.5	.0	.0	.3	.0	.0
2. SE3	275.	3.4	.0	.4	.0	.0	.0	.0	.4	.0
3. SW3	84.	3.4	.0	.3	.0	.0	.0	.0	.5	.0
4. NW3	95.	4.1	.0	.0	.4	.0	.0	.5	.0	.0

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.4	1.6	.0	.0	.7	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.7	.2	.0	1.4	.1	.0	.0	.0	.0	.0
3. SW3	.1	1.1	.0	.0	.0	.2	1.0	.0	.0	.0	.1	.0
4. NW3	.1	2.3	.3	.0	.0	.0	.5	.1	.0	.0	.1	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: CRENSHAW BLVD AND WILSHIRE BLVD PMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	1167	2.6	.0	10.5
B. NA	2	-150	2	0	AG	568	5.7	.0	9.9
C. ND	2	0	2	150	AG	0	3.1	.0	9.9
D. NE	2	150	2	450	AG	0	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	0	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	0	5.0	.0	9.9
G. SD	-2	0	-2	-150	AG	813	5.7	.0	9.9
H. SE	-2	-150	-2	-450	AG	813	2.6	.0	10.5
I. WF	450	2	150	2	AG	1297	2.6	.0	10.5
J. WA	150	2	0	2	AG	981	5.0	.0	9.9
K. WD	0	2	-150	2	AG	1580	3.1	.0	9.9
L. WE	-150	2	-450	2	AG	1580	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	1531	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	1531	5.0	.0	9.9
O. ED	0	-2	150	-2	AG	1602	3.1	.0	9.9
P. EE	150	-2	450	-2	AG	1602	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	599	5.7	.0	9.9
R. SL	0	0	-2	150	AG	0	5.0	.0	9.9
S. WL	0	0	150	2	AG	316	3.6	.0	9.9
T. EL	0	0	-150	-2	AG	0	3.5	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)				
						D	E	F	G	H
1. NE3	185.	2.4	.0	.7	.0	.0	.0	.0	.4	.0
2. SE3	275.	2.8	.0	.2	.0	.0	.0	.0	.2	.0
3. SW3	85.	2.6	.0	.2	.0	.0	.0	.0	.3	.0
4. NW3	175.	2.6	.1	.3	.0	.0	.0	.0	.9	.0

RECEPTOR	CONC/LINK (PPM)											
	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.3	.0	.0	.0	.0	.3	.0	.5	.0	.0	.0
2. SE3	.0	.0	.4	.1	.0	1.4	.1	.0	.2	.0	.0	.0
3. SW3	.1	.5	.0	.0	.0	.2	.9	.0	.2	.0	.2	.0
4. NW3	.0	.0	.3	.0	.0	.4	.0	.0	.5	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: E CENTURY PARK AND OLYMPIC BLVD AMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	889	2.6	.0	10.5
B. NA	2	-150	2	0	AG	496	5.7	.0	9.9
C. ND	2	0	2	150	AG	607	5.2	.0	9.9
D. NE	2	150	2	450	AG	607	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	1459	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	998	5.7	.0	9.9
G. SD	-2	0	-2	-150	AG	659	5.6	.0	9.9
H. SE	-2	-150	-2	-450	AG	659	2.6	.0	10.5
I. WF	450	2	150	2	AG	3150	2.6	.0	10.5
J. WA	150	2	0	2	AG	3150	5.2	.0	9.9
K. WD	0	2	-150	2	AG	3789	3.2	.0	9.9
L. WE	-150	2	-450	2	AG	3789	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	2076	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	2076	5.2	.0	9.9
O. ED	0	-2	150	-2	AG	2519	3.2	.0	9.9
P. EE	150	-2	450	-2	AG	2519	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	393	5.4	.0	9.9
R. SL	0	0	-2	150	AG	461	5.7	.0	9.9
S. WL	0	0	0	2	AG	0	3.6	.0	9.9
T. EL	0	0	-150	-2	AG	0	3.6	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)						
						D	E	F	G	H		
1. NE3	265.	4.2	.0	.0	.2	.0	.0	.3	.0	.0		
2. SE3	275.	3.8	.0	.2	.0	.0	.0	.0	.2	.0		
3. SW3	84.	3.6	.0	.2	.0	.0	.0	.0	.3	.0		
4. NW3	95.	4.5	.0	.0	.2	.0	.0	.4	.0	.0		

RECEPTOR	I	J	K	L	M	CONC/LINK (PPM)						
						N	O	P	Q	R	S	T
1. NE3	.0	.4	1.9	.2	.2	.8	.0	.0	.0	.2	.0	.0
2. SE3	.0	.0	.9	.2	.0	1.8	.2	.0	.1	.0	.0	.0
3. SW3	.1	1.3	.0	.0	.0	.3	1.3	.0	.1	.0	.0	.0
4. NW3	.1	2.6	.3	.0	.0	.0	.6	.2	.0	.2	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: HIGHLAND AVE AND WILSHIRE BLVD PMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	* AG	1032	2.6	.0	10.5
B. NA	2	-150	2	0	* AG	1032	5.7	.0	9.9
C. ND	2	0	2	150	* AG	1333	5.4	.0	9.9
D. NE	2	150	2	450	* AG	1333	2.6	.0	10.5
E. SF	-2	450	-2	150	* AG	1379	2.6	.0	10.5
F. SA	-2	150	-2	0	* AG	1279	5.7	.0	9.9
G. SD	-2	0	-2	-150	* AG	1003	5.4	.0	9.9
H. SE	-2	-150	-2	-450	* AG	1003	2.6	.0	10.5
I. WF	450	2	150	2	* AG	1259	2.6	.0	10.5
J. WA	150	2	0	2	* AG	1167	5.7	.0	9.9
K. WD	0	2	-150	2	* AG	1450	4.6	.0	9.9
L. WE	-150	2	-450	2	* AG	1450	2.6	.0	10.5
M. EF	-450	-2	-150	-2	* AG	1426	2.6	.0	10.5
N. EA	-150	-2	0	-2	* AG	1150	5.7	.0	9.9
O. ED	0	-2	150	-2	* AG	1310	4.6	.0	9.9
P. EE	150	-2	450	-2	* AG	1310	2.6	.0	10.5
Q. NL	0	0	2	-150	* AG	0	4.3	.0	9.9
R. SL	0	0	-2	150	* AG	100	4.3	.0	9.9
S. WL	0	0	150	2	* AG	92	4.1	.0	9.9
T. EL	0	0	-150	-2	* AG	276	4.3	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	* A	* B	* C	CONC/LINK (PPM)						
						D	E	F	G	H		
1. NE3	265.	3.3	.0	.0	.5	.0	.0	.4	.0	.0		
2. SE3	355.	3.2	.0	.2	1.3	.0	.1	.6	.0	.0		
3. SW3	5.	3.3	.0	.0	.6	.1	.0	1.4	.1	.0		
4. NW3	95.	3.1	.0	.0	.4	.0	.0	.5	.0	.0		

RECEPTOR	* I	* J	* K	* L	* M	* N	* O	* P	* Q	* R	* S	* T
1. NE3	.0	.2	1.2	.0	.1	.6	.0	.0	.0	.0	.0	.2
2. SE3	.0	.4	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0
3. SW3	.0	.0	.3	.0	.0	.5	.0	.0	.0	.0	.0	.0
4. NW3	.0	1.3	.2	.0	.0	.0	.5	.1	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: LA BREA AVE AND OLYPMIC BLVD AMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	1606	2.6	.0	10.5
B. NA	2	-150	2	0	AG	1453	5.7	.0	9.9
C. ND	2	0	2	150	AG	1560	4.8	.0	9.9
D. NE	2	150	2	450	AG	1560	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	1856	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	1739	5.7	.0	9.9
G. SD	-2	0	-2	-150	AG	1692	4.8	.0	9.9
H. SE	-2	-150	-2	-450	AG	1692	2.6	.0	10.5
I. WF	450	2	150	2	AG	1749	2.6	.0	10.5
J. WA	150	2	0	2	AG	1662	5.7	.0	9.9
K. WD	0	2	-150	2	AG	1948	5.2	.0	9.9
L. WE	-150	2	-450	2	AG	1948	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	1399	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	1338	5.7	.0	9.9
O. ED	0	-2	150	-2	AG	1410	5.2	.0	9.9
P. EE	150	-2	450	-2	AG	1410	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	153	4.1	.0	9.9
R. SL	0	0	-2	150	AG	117	4.1	.0	9.9
S. WL	0	0	150	2	AG	87	4.3	.0	9.9
T. EL	0	0	-150	-2	AG	61	4.3	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	* A	B	C	CONC/LINK (PPM)						
						D	E	F	G	H		
1. NE3	265.	4.0	.0	.0	.5	.0	.0	.5	.0	.0		
2. SE3	354.	3.7	.0	.2	1.3	.0	.0	.9	.0	.0		
3. SW3	5.	4.0	.0	.0	.6	.1	.0	1.7	.2	.0		
4. NW3	95.	4.0	.0	.0	.4	.0	.0	.7	.0	.0		

RECEPTOR	* I	J	K	L	M	CONC/LINK (PPM)						
						N	O	P	Q	R	S	T
1. NE3	.0	.2	1.7	.0	.1	.7	.0	.0	.0	.0	.0	.0
2. SE3	.0	.5	.0	.0	.0	.0	.5	.0	.0	.0	.0	.0
3. SW3	.0	.0	.5	.0	.0	.5	.0	.0	.0	.0	.0	.0
4. NW3	.0	1.7	.3	.0	.0	.0	.6	.1	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: VETERAN AVE AND PICO BLVD PMNP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	0	2.6	.0	10.5
B. NA	2	-150	2	0	AG	0	5.7	.0	9.9
C. ND	2	0	2	150	AG	222	5.4	.0	9.9
D. NE	2	150	2	450	AG	222	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	501	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	296	5.7	.0	9.9
G. SD	-2	0	-2	-150	AG	0	5.4	.0	9.9
H. SE	-2	-150	-2	-450	AG	0	2.6	.0	10.5
I. WF	450	2	150	2	AG	2057	2.6	.0	10.5
J. WA	150	2	0	2	AG	2057	5.0	.0	9.9
K. WD	0	2	-150	2	AG	2260	3.1	.0	9.9
L. WE	-150	2	-450	2	AG	2260	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	1737	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	1608	5.0	.0	9.9
O. ED	0	-2	150	-2	AG	1813	3.1	.0	9.9
P. EE	150	-2	450	-2	AG	1813	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	0	5.7	.0	9.9
R. SL	0	0	-2	150	AG	205	5.7	.0	9.9
S. WL	0	0	150	2	AG	0	3.5	.0	9.9
T. EL	0	0	-150	-2	AG	129	3.5	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	D	E	F	G	H
1. NE3	265.	2.7	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	275.	2.4	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	275.	2.5	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	95.	2.9	.0	.0	.0	.0	.0	.1	.0	.0

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.3	1.2	.1	.1	.7	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.5	.2	.0	1.4	.1	.0	.0	.0	.0	.0
3. SW3	.0	.0	.5	.2	.1	1.6	.0	.0	.0	.0	.0	.0
4. NW3	.0	1.7	.2	.0	.0	.0	.5	.1	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: VETERAN AVE AND PICO BLVD PMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	0	2.6	.0	10.5
B. NA	2	-150	2	0	AG	0	5.7	.0	9.9
C. ND	2	0	2	150	AG	252	5.7	.0	9.9
D. NE	2	150	2	450	AG	252	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	515	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	296	5.7	.0	9.9
G. SD	-2	0	-2	-150	AG	0	5.4	.0	9.9
H. SE	-2	-150	-2	-450	AG	0	2.6	.0	10.5
I. WF	450	2	150	2	AG	2128	2.6	.0	10.5
J. WA	150	2	0	2	AG	2128	5.0	.0	9.9
K. WD	0	2	-150	2	AG	2312	3.1	.0	9.9
L. WE	-150	2	-450	2	AG	2312	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	1740	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	1600	5.0	.0	9.9
O. ED	0	-2	150	-2	AG	1819	3.1	.0	9.9
P. EE	150	-2	450	-2	AG	1819	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	0	5.7	.0	9.9
R. SL	0	0	-2	150	AG	219	5.7	.0	9.9
S. WL	0	0	150	2	AG	0	3.5	.0	9.9
T. EL	0	0	-150	-2	AG	140	3.5	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)								
						D	E	F	G	H				
1. NE3	265.	2.7	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	275.	2.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW3	275.	2.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	95.	2.9	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0

RECEPTOR	I	J	K	L	M	CONC/LINK (PPM)								
						N	O	P	Q	R	S	T		
1. NE3	.0	.3	1.2	.1	.1	.7	.0	.0	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.5	.2	.0	1.4	.1	.0	.0	.0	.0	.0	.0	.0
3. SW3	.0	.0	.5	.2	.1	1.6	.0	.0	.0	.0	.0	.0	.0	.0
4. NW3	.0	1.8	.2	.0	.0	.0	.5	.1	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: W CENTURY PARK AND OLYMPIC BLVD PMNP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	0	2.6	.0	10.5
B. NA	2	-150	2	0	AG	0	5.7	.0	9.9
C. ND	2	0	2	150	AG	265	5.2	.0	9.9
D. NE	2	150	2	450	AG	265	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	860	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	698	5.7	.0	9.9
G. SD	-2	0	-2	-150	AG	0	4.1	.0	9.9
H. SE	-2	-150	-2	-450	AG	0	2.6	.0	10.5
I. WF	450	2	150	2	AG	2293	2.6	.0	10.5
J. WA	150	2	0	2	AG	2293	5.0	.0	9.9
K. WD	0	2	-150	2	AG	2931	3.1	.0	9.9
L. WE	-150	2	-450	2	AG	2931	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	2175	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	1970	5.0	.0	9.9
O. ED	0	-2	150	-2	AG	2132	3.1	.0	9.9
P. EE	150	-2	450	-2	AG	2132	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	0	5.7	.0	9.9
R. SL	0	0	-2	150	AG	162	5.7	.0	9.9
S. WL	0	0	150	2	AG	0	3.5	.0	9.9
T. EL	0	0	-150	-2	AG	205	3.5	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)					
						D	E	F	G	H	
1. NE3	265.	3.3	.0	.0	.0	.0	.0	.2	.0	.0	
2. SE3	275.	2.9	.0	.0	.0	.0	.0	.0	.0	.0	
3. SW3	275.	3.0	.0	.0	.0	.0	.0	.0	.0	.0	
4. NW3	95.	3.3	.0	.0	.0	.0	.0	.3	.0	.0	

RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.3	1.5	.1	.2	.8	.0	.0	.0	.0	.0	.1
2. SE3	.0	.0	.6	.2	.0	1.7	.2	.0	.0	.0	.0	.1
3. SW3	.0	.0	.6	.2	.1	1.9	.0	.0	.0	.0	.0	.1
4. NW3	.1	1.9	.2	.0	.0	.0	.5	.2	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: W CENTURY PARK AND OLYMPIC BLVD PMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	0	2.6	.0	10.5
B. NA	2	-150	2	0	AG	0	5.7	.0	9.9
C. ND	2	0	2	150	AG	269	5.2	.0	9.9
D. NE	2	150	2	450	AG	269	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	871	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	722	5.7	.0	9.9
G. SD	-2	0	-2	-150	AG	0	4.1	.0	9.9
H. SE	-2	-150	-2	-450	AG	0	2.6	.0	10.5
I. WF	450	2	150	2	AG	2371	2.6	.0	10.5
J. WA	150	2	0	2	AG	2371	5.0	.0	9.9
K. WD	0	2	-150	2	AG	3035	3.1	.0	9.9
L. WE	-150	2	-450	2	AG	3035	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	2158	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	1947	5.0	.0	9.9
O. ED	0	-2	150	-2	AG	2096	3.1	.0	9.9
P. EE	150	-2	450	-2	AG	2096	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	0	5.7	.0	9.9
R. SL	0	0	-2	150	AG	149	5.7	.0	9.9
S. WL	0	0	150	2	AG	0	3.5	.0	9.9
T. EL	0	0	-150	-2	AG	211	3.5	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)					
						D	E	F	G	H	
1. NE3	265.	3.3	.0	.0	.0	.0	.0	.2	.0	.0	
2. SE3	275.	2.9	.0	.0	.0	.0	.0	.0	.0	.0	
3. SW3	275.	3.0	.0	.0	.0	.0	.0	.0	.0	.0	
4. NW3	95.	3.4	.0	.0	.0	.0	.0	.3	.0	.0	

RECEPTOR	I	J	K	L	M	CONC/LINK (PPM)						
						N	O	P	Q	R	S	T
1. NE3	.0	.3	1.5	.1	.2	.8	.0	.0	.0	.0	.0	.1
2. SE3	.0	.0	.7	.2	.0	1.7	.2	.0	.0	.0	.0	.1
3. SW3	.0	.0	.6	.2	.1	1.9	.0	.0	.0	.0	.0	.1
4. NW3	.1	1.9	.2	.0	.0	.0	.5	.2	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: WESTWOOD BLVD AND PICO BLVD PMNP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	874	2.6	.0	10.5
B. NA	2	-150	2	0	AG	719	5.7	.0	9.9
C. ND	2	0	2	150	AG	1105	5.7	.0	9.9
D. NE	2	150	2	450	AG	1105	2.6	.0	10.5
E. SF	-2	450	-2	150	AG	1272	2.6	.0	10.5
F. SA	-2	150	-2	0	AG	1082	5.7	.0	9.9
G. SD	-2	0	-2	-150	AG	1423	5.7	.0	9.9
H. SE	-2	-150	-2	-450	AG	1423	2.6	.0	10.5
I. WF	450	2	150	2	AG	2431	2.6	.0	10.5
J. WA	150	2	0	2	AG	2090	5.4	.0	9.9
K. WD	0	2	-150	2	AG	2099	3.4	.0	9.9
L. WE	-150	2	-450	2	AG	2099	2.6	.0	10.5
M. EF	-450	-2	-150	-2	AG	1793	2.6	.0	10.5
N. EA	-150	-2	0	-2	AG	1600	5.4	.0	9.9
O. ED	0	-2	150	-2	AG	1743	3.4	.0	9.9
P. EE	150	-2	450	-2	AG	1743	2.6	.0	10.5
Q. NL	0	0	2	-150	AG	155	4.8	.0	9.9
R. SL	0	0	-2	150	AG	190	4.8	.0	9.9
S. WL	0	0	150	2	AG	341	3.7	.0	9.9
T. EL	0	0	-150	-2	AG	193	3.6	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	* A	B	C	CONC/LINK (PPM)					
						D	E	F	G	H	
1. NE3	264.	3.4	.0	.0	.4	.0	.0	.3	.0	.0	
2. SE3	355.	3.3	.0	.1	1.2	.0	.1	.6	.0	.0	
3. SW3	84.	3.4	.0	.2	.0	.0	.0	.0	.6	.0	
4. NW3	95.	3.8	.0	.0	.3	.0	.0	.4	.0	.0	

RECEPTOR	* I	J	K	L	M	CONC/LINK (PPM)						
						N	O	P	Q	R	S	T
1. NE3	.0	.3	1.2	.0	.0	.8	.0	.0	.0	.0	.0	.1
2. SE3	.0	.6	.0	.0	.0	.0	.4	.0	.0	.1	.0	.0
3. SW3	.1	1.0	.0	.0	.0	.3	1.0	.0	.0	.0	.2	.0
4. NW3	.1	1.9	.2	.0	.0	.0	.5	.1	.0	.0	.2	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: CRENSHAW BLVD AND WILSHIRE BLVD AMNP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	1195	1.5	.0	10.5
B. NA	2	-150	2	0	AG	438	2.9	.0	9.9
C. ND	2	0	2	150	AG	0	1.8	.0	9.9
D. NE	2	150	2	450	AG	0	1.5	.0	10.5
E. SF	-2	450	-2	150	AG	0	1.5	.0	10.5
F. SA	-2	150	-2	0	AG	0	2.7	.0	9.9
G. SD	-2	0	-2	-150	AG	849	2.9	.0	9.9
H. SE	-2	-150	-2	-450	AG	849	1.5	.0	10.5
I. WF	450	2	150	2	AG	1988	1.5	.0	10.5
J. WA	150	2	0	2	AG	1539	2.6	.0	9.9
K. WD	0	2	-150	2	AG	2296	1.7	.0	9.9
L. WE	-150	2	-450	2	AG	2296	1.5	.0	10.5
M. EF	-450	-2	-150	-2	AG	1585	1.5	.0	10.5
N. EA	-150	-2	0	-2	AG	1585	2.6	.0	9.9
O. ED	0	-2	150	-2	AG	1623	1.7	.0	9.9
P. EE	150	-2	450	-2	AG	1623	1.5	.0	10.5
Q. NL	0	0	2	-150	AG	757	2.9	.0	9.9
R. SL	0	0	-2	150	AG	0	2.7	.0	9.9
S. WL	0	0	150	2	AG	449	2.0	.0	9.9
T. EL	0	0	-150	-2	AG	0	1.9	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)					
						D	E	F	G	H	
1. NE3	185.	1.4	.0	.3	.0	.0	.0	.0	.2	.0	
2. SE3	275.	1.6	.0	.0	.0	.0	.0	.0	.1	.0	
3. SW3	85.	1.6	.0	.0	.0	.0	.0	.0	.2	.0	
4. NW3	175.	1.5	.0	.1	.0	.0	.0	.0	.5	.0	

RECEPTOR	CONC/LINK (PPM)											
	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.3	.0	.0	.0	.0	.1	.0	.3	.0	.0	.0
2. SE3	.0	.0	.3	.0	.0	.7	.0	.0	.1	.0	.0	.0
3. SW3	.0	.3	.0	.0	.0	.1	.5	.0	.1	.0	.1	.0
4. NW3	.0	.0	.3	.0	.0	.2	.0	.0	.3	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: W CENTURY PARK AND OLYMPIC BLVD AMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	0	1.5	.0	10.5
B. NA	2	-150	2	0	AG	0	2.9	.0	9.9
C. ND	2	0	2	150	AG	1125	2.9	.0	9.9
D. NE	2	150	2	450	AG	1125	1.5	.0	10.5
E. SF	-2	450	-2	150	AG	267	1.5	.0	10.5
F. SA	-2	150	-2	0	AG	100	2.9	.0	9.9
G. SD	-2	0	-2	-150	AG	0	2.9	.0	9.9
H. SE	-2	-150	-2	-450	AG	0	1.5	.0	10.5
I. WF	450	2	150	2	AG	2409	1.5	.0	10.5
J. WA	150	2	0	2	AG	2409	2.6	.0	9.9
K. WD	0	2	-150	2	AG	2285	1.7	.0	9.9
L. WE	-150	2	-450	2	AG	2285	1.5	.0	10.5
M. EF	-450	-2	-150	-2	AG	3806	1.5	.0	10.5
N. EA	-150	-2	0	-2	AG	2905	2.6	.0	9.9
O. ED	0	-2	150	-2	AG	3072	1.7	.0	9.9
P. EE	150	-2	450	-2	AG	3072	1.5	.0	10.5
Q. NL	0	0	2	-150	AG	0	2.9	.0	9.9
R. SL	0	0	-2	150	AG	167	2.9	.0	9.9
S. WL	0	0	150	2	AG	0	1.9	.0	9.9
T. EL	0	0	-150	-2	AG	901	2.4	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)					
						D	E	F	G	H	
1. NE3	264.	2.1	.0	.0	.2	.0	.0	.0	.0	.0	
2. SE3	275.	2.1	.0	.0	.0	.0	.0	.0	.0	.0	
3. SW3	275.	2.2	.0	.0	.0	.0	.0	.0	.0	.0	
4. NW3	95.	1.9	.0	.0	.2	.0	.0	.0	.0	.0	

RECEPTOR	I	J	K	L	M	CONC/LINK (PPM)						
						N	O	P	Q	R	S	T
1. NE3	.0	.2	.6	.0	.0	.6	.0	.0	.0	.0	.0	.3
2. SE3	.0	.0	.3	.0	.0	1.2	.1	.0	.0	.0	.0	.3
3. SW3	.0	.0	.3	.1	.1	1.4	.0	.0	.0	.0	.0	.3
4. NW3	.0	1.0	.1	.0	.0	.0	.4	.1	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: W CENTURY PARK AND OLYMPIC BLVD PMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	AG	0	1.5	.0	10.5
B. NA	2	-150	2	0	AG	0	2.9	.0	9.9
C. ND	2	0	2	150	AG	279	2.7	.0	9.9
D. NE	2	150	2	450	AG	279	1.5	.0	10.5
E. SF	-2	450	-2	150	AG	886	1.5	.0	10.5
F. SA	-2	150	-2	0	AG	723	2.9	.0	9.9
G. SD	-2	0	-2	-150	AG	0	2.2	.0	9.9
H. SE	-2	-150	-2	-450	AG	0	1.5	.0	10.5
I. WF	450	2	150	2	AG	2409	1.5	.0	10.5
J. WA	150	2	0	2	AG	2409	2.6	.0	9.9
K. WD	0	2	-150	2	AG	3068	1.7	.0	9.9
L. WE	-150	2	-450	2	AG	3068	1.5	.0	10.5
M. EF	-450	-2	-150	-2	AG	2203	1.5	.0	10.5
N. EA	-150	-2	0	-2	AG	1988	2.6	.0	9.9
O. ED	0	-2	150	-2	AG	2151	1.7	.0	9.9
P. EE	150	-2	450	-2	AG	2151	1.5	.0	10.5
Q. NL	0	0	2	-150	AG	0	2.9	.0	9.9
R. SL	0	0	-2	150	AG	163	2.9	.0	9.9
S. WL	0	0	150	2	AG	0	1.9	.0	9.9
T. EL	0	0	-150	-2	AG	215	1.9	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)					
						D	E	F	G	H	
1. NE3	265.	1.8	.0	.0	.0	.0	.0	.1	.0	.0	
2. SE3	275.	1.6	.0	.0	.0	.0	.0	.0	.0	.0	
3. SW3	275.	1.6	.0	.0	.0	.0	.0	.0	.0	.0	
4. NW3	95.	1.8	.0	.0	.0	.0	.0	.1	.0	.0	

RECEPTOR	CONC/LINK (PPM)											
	I	J	K	L	M	N	O	P	Q	R	S	T
1. NE3	.0	.2	.8	.0	.0	.4	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.4	.1	.0	.9	.0	.0	.0	.0	.0	.0
3. SW3	.0	.0	.3	.1	.0	1.0	.0	.0	.0	.0	.0	.0
4. NW3	.0	1.0	.1	.0	.0	.0	.3	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: ALVARADO ST AND OLYMPIC BLVD PMNP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	* AG	1136	1.5	.0	10.5
B. NA	2	-150	2	0	* AG	1041	2.9	.0	9.9
C. ND	2	0	2	150	* AG	1257	2.9	.0	9.9
D. NE	2	150	2	450	* AG	1257	1.5	.0	10.5
E. SF	-2	450	-2	150	* AG	1220	1.5	.0	10.5
F. SA	-2	150	-2	0	* AG	1076	2.9	.0	9.9
G. SD	-2	0	-2	-150	* AG	1014	2.9	.0	9.9
H. SE	-2	-150	-2	-450	* AG	1014	1.5	.0	10.5
I. WF	450	2	150	2	* AG	1866	1.5	.0	10.5
J. WA	150	2	0	2	* AG	1755	2.9	.0	9.9
K. WD	0	2	-150	2	* AG	1979	2.1	.0	9.9
L. WE	-150	2	-450	2	* AG	1979	1.5	.0	10.5
M. EF	-450	-2	-150	-2	* AG	1575	1.5	.0	10.5
N. EA	-150	-2	0	-2	* AG	1372	2.9	.0	9.9
O. ED	0	-2	150	-2	* AG	1547	2.1	.0	9.9
P. EE	150	-2	450	-2	* AG	1547	1.5	.0	10.5
Q. NL	0	0	2	-150	* AG	95	2.4	.0	9.9
R. SL	0	0	-2	150	* AG	144	2.4	.0	9.9
S. WL	0	0	150	2	* AG	111	2.1	.0	9.9
T. EL	0	0	-150	-2	* AG	203	2.1	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)						
						D	E	F	G	H		
1. NE3	265.	1.8	.0	.0	.3	.0	.0	.2	.0	.0		
2. SE3	355.	1.7	.0	.0	.7	.0	.0	.3	.0	.0		
3. SW3	85.	1.7	.0	.2	.0	.0	.0	.0	.2	.0		
4. NW3	95.	1.9	.0	.0	.2	.0	.0	.2	.0	.0		

RECEPTOR	I	J	K	L	M	CONC/LINK (PPM)						
						N	O	P	Q	R	S	T
1. NE3	.0	.1	.7	.0	.0	.3	.0	.0	.0	.0	.0	.0
2. SE3	.0	.3	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
3. SW3	.0	.4	.0	.0	.0	.1	.6	.0	.0	.0	.0	.0
4. NW3	.0	.9	.1	.0	.0	.0	.3	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: E CENTURY PARK AND OLYMPIC BLVD PMWP
 RUN: Hour 1 (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= .0 CM/S
 CLAS= 7 (G) VS= .0 CM/S
 MIXH= 1000. M AMB= .0 PPM
 SIGTH= 5. DEGREES TEMP= 15.6 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	* X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NF	2	-450	2	-150	* AG	837	1.5	.0	10.5
B. NA	2	-150	2	0	* AG	761	2.9	.0	9.9
C. ND	2	0	2	150	* AG	966	2.9	.0	9.9
D. NE	2	150	2	450	* AG	966	1.5	.0	10.5
E. SF	-2	450	-2	150	* AG	935	1.5	.0	10.5
F. SA	-2	150	-2	0	* AG	688	2.9	.0	9.9
G. SD	-2	0	-2	-150	* AG	1004	2.9	.0	9.9
H. SE	-2	-150	-2	-450	* AG	1004	1.5	.0	10.5
I. WF	450	2	150	2	* AG	2932	1.5	.0	10.5
J. WA	150	2	0	2	* AG	2932	2.6	.0	9.9
K. WD	0	2	-150	2	* AG	2913	1.7	.0	9.9
L. WE	-150	2	-450	2	* AG	2913	1.5	.0	10.5
M. EF	-450	-2	-150	-2	* AG	3001	1.5	.0	10.5
N. EA	-150	-2	0	-2	* AG	3001	2.6	.0	9.9
O. ED	0	-2	150	-2	* AG	2822	1.7	.0	9.9
P. EE	150	-2	450	-2	* AG	2822	1.5	.0	10.5
Q. NL	0	0	2	-150	* AG	76	2.7	.0	9.9
R. SL	0	0	-2	150	* AG	247	2.7	.0	9.9
S. WL	0	0	150	2	* AG	0	1.9	.0	9.9
T. EL	0	0	-150	-2	* AG	0	1.9	.0	9.9

III. RECEPTOR LOCATIONS

RECEPTOR	* X	Y	Z
1. NE3	8	8	1.8
2. SE3	8	-8	1.8
3. SW3	-8	-8	1.8
4. NW3	-8	8	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	* BRG (DEG)	* PRED CONC (PPM)	A	B	C	CONC/LINK (PPM)						
						D	E	F	G	H		
1. NE3	264.	2.1	.0	.0	.2	.0	.0	.1	.0	.0		
2. SE3	275.	2.2	.0	.2	.0	.0	.0	.0	.2	.0		
3. SW3	84.	2.0	.0	.1	.0	.0	.0	.0	.2	.0		
4. NW3	95.	2.2	.0	.0	.1	.0	.0	.1	.0	.0		

RECEPTOR	I	J	K	L	M	CONC/LINK (PPM)						
						N	O	P	Q	R	S	T
1. NE3	.0	.2	.8	.0	.0	.6	.0	.0	.0	.0	.0	.0
2. SE3	.0	.0	.4	.1	.0	1.2	.1	.0	.0	.0	.0	.0
3. SW3	.0	.6	.0	.0	.0	.2	.8	.0	.0	.0	.0	.0
4. NW3	.0	1.2	.1	.0	.0	.0	.3	.1	.0	.0	.0	.0



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Quality Assurance
Site Information for Los Angeles-North Main Street

This page last reviewed on May 15, 2008



AIRS Number	ARB Number	Site Start Date	Reporting Agency and Agency Code
060371103	70087	3/1/78	South Coast AQMD (061)

Site Address	County	Air Basin	Latitude	Longitude	Elevation
1630 North Main Street, Los Angeles CA 90012	Los Angeles	South Coast	34° 3' 59"	118° 13' 36"	87

Pollutants Monitored (click on parameter link for real-time data)	
CO , SO₂ , NO₂ , O₃ , Total NMHC , PM₁₀ , BAM_{PM10} , BAM_{PM2.5} , PM_{2.5} , TSP , Toxics , Cr⁶⁺ , Relative Humidity , Wind Direction , Horizontal Wind Speed , Solar Radiation	

Site Photos	Photo Sequences	Site Surveys
--Select Photos-- <input type="button" value=""/>	--Select Position And Direction-- <input type="button" value=""/>	--Select Survey-- <input type="button" value=""/>

Other ARB Database Information	Real-Time Met Data	Aerial Photos and Topo Maps Of Site
--Select Database-- <input type="button" value=""/>	--Select Data Server-- <input type="button" value=""/>	--Select External Map-- <input type="button" value=""/>

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For real-time air quality data visit: [Air Quality and Meteorological Information System \(AQMIS\)](#)

For further information contact:

[Merrin Wright](#), Manager
 Quality Assurance Section

A department of the California Environmental Protection Agency



Air Resources Board



Highest 4 Daily Maximum Hourly Ozone Measurements

Los Angeles-North Main Street

[FAQs](#)

Year:	2006		2007		2008	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Jul 22	0.108	Sep 3	0.115	May 18	0.109
Second High:	Jul 23	0.108	Sep 2	0.111	Jun 21	0.103
Third High:	Jun 3	0.103	Sep 1	0.099	May 17	0.095
Fourth High:	Jul 24	0.100	Aug 19	0.093	Jun 22	0.090
# Days Above State Standard:	8		3		3	
California Designation Value:	0.11		0.11		0.11	
Expected Peak Day Conc.:	0.111		0.108		0.107	
<i># Days Above Nat'l Standard:</i>	0		0		0	
<i>National Design Value:</i>	0.108		0.111		0.108	
Year Coverage:	98		97		96	
Go Backward One Year		New Top 4 Summary		Go Forward One Year		

Notes: All concentrations are expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics*.

State exceedances are shown in **yellow**. Exceedances of the revoked national 1-hour standard are shown in *orange*.

An exceedance is not necessarily a violation.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* There was insufficient (or no) data available to determine the value.

Switch:	8-Hour Ozone	PM2.5	PM10	Carbon Monoxide	Nitrogen Dioxide	Sulfur Dioxide	Hydrogen Sulfide
Go to:	Data Statistics Home Page			Top 4 Summaries Start Page			



Air Resources Board



Highest 4 Daily Maximum 8-Hour Ozone Averages

Los Angeles-North Main Street

[FAQs](#)

Year:	2006		2007		2008	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Jul 15	0.079	Sep 2	0.102	May 18	0.090
Second High:	Jul 22	0.077	Sep 3	0.093	Jun 21	0.081
Third High:	Sep 3	0.076	Aug 19	0.078	May 17	0.076
Fourth High:	Jun 3	0.075	May 19	0.072	Jun 15	0.073
California:						
First High:	Jul 15	0.079	Sep 2	0.103	May 18	0.090
Second High:	Jul 22	0.077	Sep 3	0.094	Jun 21	0.081
Third High:	Sep 3	0.077	Aug 19	0.079	May 17	0.076
Fourth High:	Jun 3	0.076	May 19	0.073	Jun 15	0.074
National:						
# Days Above '08 Nat'l Std.:	3		3		3	
'08 Nat'l Std. Design Value:	0.074		0.072		0.073	
National Year Coverage:	97		96		95	
California:						
# Days Above State Standard:	7		6		6	
California Designation Value:	0.085		0.085		0.081	
Expected Peak Day Conc.:	0.087		0.085		0.085	
California Year Coverage:	97		96		94	
Go Backward One Year		New Top 4 Summary			Go Forward One Year	

Notes: All averages are expressed in parts per million.
 National exceedances are shown in **orange**. State exceedances are shown in **yellow**.
 An exceedance is not necessarily a violation.
 Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
 * There was insufficient (or no) data available to determine the value.

Switch:	Hourly Ozone	PM2.5	PM10	Carbon Monoxide	Nitrogen Dioxide	Sulfur Dioxide	Hydrogen Sulfide
Go to:	Data Statistics Home Page			Top 4 Summaries Start Page			



Air Resources Board



Highest 4 Daily 24-Hour PM10 Averages

Los Angeles-North Main Street

[FAQs](#)

Year:	2006		2007		2008	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Feb 4	59.0	Apr 12	78.0	Nov 20	66.0
Second High:	May 11	55.0	Nov 20	77.0	Dec 2	65.0
Third High:	May 17	55.0	Oct 21	63.0	Oct 21	50.0
Fourth High:	Feb 10	48.0	Oct 27	58.0	Oct 27	49.0
California:						
First High:	Feb 4	58.0	Apr 12	77.0	Nov 20	64.0
Second High:	May 11	55.0	Nov 20	76.0	Dec 2	63.0
Third High:	May 17	54.0	Oct 21	62.0	Oct 21	49.0
Fourth High:	Feb 10	48.0	Oct 27	57.0	Nov 14	48.0
Measured:						
# Days Above Nat'l Standard:	0		0		0	
# Days Above State Standard:	3		5		2	
Estimated:						
3-Yr Avg # Days Above Nat'l Std:	0.0		0.0		*	
# Days Above Nat'l Standard:	0.0		0.0		*	
# Days Above State Standard:	18.1		31.0		*	
State 3-Yr Maximum Average:	32		33		33	
State Annual Average:	30.1		33.0		*	
National 3-Year Average:	31		31		29	
National Annual Average:	30.1		33.3		24.0	
Year Coverage:	95		93		79	
Go Backward One Year		New Top 4 Summary			Go Forward One Year	

Notes: All concentrations are expressed in micrograms per cubic meter.
 The national annual average PM10 standard was revoked in December 2006 and is no longer in effect.
 Statistics related to the revoked standard are shown in *italics* or *italics* .
 National exceedances are shown in **orange** . State exceedances are shown in **yellow** .
 An exceedance is not necessarily a violation.
 Statistics may include data that are related to an [exceptional event](#).
 State and national statistics may differ for the following reasons:
 State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods.
 State and national statistics may therefore be based on different samplers.
 State statistics for 1998 and later are based on *local* conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on *local* conditions).
 National statistics are based on *standard* conditions.
 State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
 Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.
 3-Year statistics represent the listed year and the 2 years before the listed year.
 Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
 * There was insufficient (or no) data available to determine the value.

Switch:	Hourly Ozone	8-Hour Ozone	PM2.5	Carbon Monoxide	Nitrogen Dioxide	Sulfur Dioxide	Hydrogen Sulfide
Go to:	Data Statistics Home Page			Top 4 Summaries Start Page			



Air Resources Board



Highest 4 Daily 24-Hour PM2.5 Averages

Los Angeles-North Main Street

[FAQs](#)

Year:	2006		2007		2008	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Feb 4	56.2	Nov 18	64.1	Nov 16	78.3
Second High:	Nov 24	45.7	Nov 20	61.1	Dec 3	59.9
Third High:	Feb 11	43.2	Nov 19	60.4	Dec 2	54.5
Fourth High:	Oct 25	42.0	Nov 21	56.7	Nov 23	50.0
California:						
First High:	Feb 4	56.2	Nov 18	64.1	Nov 16	78.3
Second High:	Nov 24	45.7	Nov 20	62.0	Dec 3	59.9
Third High:	Feb 11	43.2	Nov 19	60.4	Jul 4	54.6
Fourth High:	Oct 25	42.0	Nov 21	56.7	Dec 2	54.5
Estimated Days > Nat'l 24-Hr Std:		11.7		*		11.3
Measured Days > Nat'l 24-Hr Std:		11		20		10
Nat'l 24-Hr Std Design Value:		49		48		43
Nat'l 24-Hr Std 98th Percentile:		38.9		51.2		40.3
National Annual Std Design Value:		17.7		16.7		16.1
National Annual Average:		15.5		16.7		15.9
State Ann'l Std Designation Value:		18		18		16
State Annual Average:		16.0		*		16.2
Year Coverage:		90		86		88
Go Backward One Year		New Top 4 Summary		Go Forward One Year		

Notes: All concentrations are expressed in micrograms per cubic meter. National exceedances are shown in **orange**. State exceedances are shown in **yellow**. An exceedance is not necessarily a violation. State and national statistics may differ for the following reasons:
 State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria. Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
 * There was insufficient (or no) data available to determine the value.

Switch:	Hourly Ozone	8-Hour Ozone	PM10	Carbon Monoxide	Nitrogen Dioxide	Sulfur Dioxide	Hydrogen Sulfide
Go to:	Data Statistics Home Page			Top 4 Summaries Start Page			



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Quality Assurance
Site Information for Los Angeles - VA Hospital

This page last reviewed on May 15, 2008



AIRS Number	ARB Number	Site Start Date	Reporting Agency and Agency Code
060370113	70091	3/1/93	South Coast AQMD (061)

Site Address	County	Air Basin	Latitude	Longitude	Elevation
Wilsire Bl & Sawtelle, Los Angeles CA 90025	Los Angeles	South Coast	34° 3' 2"	118° 27' 24"	61

Pollutants Monitored (click on parameter link for real-time data)
CO , NO₂ , O₃ , TSP, Wind Direction, Horizontal Wind Speed

Site Photos	Photo Sequences	Site Surveys
--Select Photos-- <input type="button" value=""/>	--Select Position And Direction-- <input type="button" value=""/>	--Select Survey-- <input type="button" value=""/>

Other ARB Database Information	Real-Time Met Data	Aerial Photos and Topo Maps Of Site
--Select Database-- <input type="button" value=""/>	--Select Data Server-- <input type="button" value=""/>	--Select External Map-- <input type="button" value=""/>

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For real-time air quality data visit: [Air Quality and Meteorological Information System \(AQMIS\)](#)

For further information contact:

[Merrin Wright](#), Manager
 Quality Assurance Section

A department of the California Environmental Protection Agency



Air Resources Board



Highest 4 Daily Maximum Hourly Ozone Measurements

West Los Angeles-VA Hospital

[FAQs](#)

Year:	2006		2007		2008	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Jul 15	0.099	Sep 3	0.117	May 18	0.111
Second High:	Jun 3	0.098	Sep 2	0.105	Apr 28	0.101
Third High:	Sep 5	0.097	Aug 19	0.090	Oct 27	0.098
Fourth High:	Aug 23	0.093	Jul 26	0.085	Oct 1	0.093
# Days Above State Standard:	3		2		3	
California Designation Value:	0.11		0.10		0.10	
Expected Peak Day Conc.:	0.107		0.103		0.100	
<i># Days Above Nat'l Standard:</i>	0		0		0	
<i>National Design Value:</i>	0.107		0.109		0.101	
Year Coverage:	98		98		96	
Go Backward One Year		New Top 4 Summary		Go Forward One Year		

Notes: All concentrations are expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics*.

State exceedances are shown in **yellow**. Exceedances of the revoked national 1-hour standard are shown in *orange*.

An exceedance is not necessarily a violation.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* There was insufficient (or no) data available to determine the value.

Switch:	8-Hour Ozone	PM2.5	PM10	Carbon Monoxide	Nitrogen Dioxide	Sulfur Dioxide	Hydrogen Sulfide
Go to:	Data Statistics Home Page			Top 4 Summaries Start Page			



Air Resources Board



Highest 4 Daily Maximum 8-Hour Ozone Averages

West Los Angeles-VA Hospital

[FAQs](#)

Year:	2006		2007		2008	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	May 14	0.074	Sep 2	0.087	May 18	0.096
Second High:	Sep 18	0.074	Sep 3	0.083	Apr 28	0.082
Third High:	Jun 3	0.069	Aug 19	0.069	Apr 27	0.075
Fourth High:	Aug 23	0.068	May 19	0.067	Jun 21	0.073
California:						
First High:	May 14	0.074	Sep 2	0.088	May 18	0.097
Second High:	Sep 18	0.074	Sep 3	0.084	Apr 28	0.082
Third High:	Jun 3	0.069	Aug 19	0.070	Apr 27	0.075
Fourth High:	Aug 23	0.068	May 19	0.068	Jun 21	0.074
National:						
# Days Above '08 Nat'l Std.:	0		2		2	
'08 Nat'l Std. Design Value:	0.073		0.070		0.069	
National Year Coverage:	98		98		96	
California:						
# Days Above State Standard:	2		2		8	
California Designation Value:	0.084		0.077		0.075	
Expected Peak Day Conc.:	0.084		0.081		0.079	
California Year Coverage:	98		97		96	
Go Backward One Year		New Top 4 Summary			Go Forward One Year	

Notes: All averages are expressed in parts per million.
 National exceedances are shown in **orange**. State exceedances are shown in **yellow**.
 An exceedance is not necessarily a violation.
 Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
 * There was insufficient (or no) data available to determine the value.

Switch:	Hourly Ozone	PM2.5	PM10	Carbon Monoxide	Nitrogen Dioxide	Sulfur Dioxide	Hydrogen Sulfide
Go to:	Data Statistics Home Page			Top 4 Summaries Start Page			

LOS ANGELES CIVIC CENTE, CALIFORNIA (045115)

Period of Record Monthly Climate Summary

Period of Record : 1/ 1/1914 to 12/31/2005

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	66.4	67.4	68.8	71.1	73.1	77.1	82.4	83.2	81.8	77.5	72.9	67.6	74.1
Average Min. Temperature (F)	48.4	49.7	51.2	53.5	56.6	59.8	63.1	64.0	62.7	58.8	53.3	49.3	55.9
Average Total Precipitation (in.)	3.18	3.44	2.45	1.04	0.26	0.06	0.01	0.06	0.28	0.44	1.30	2.37	14.91
Average Total SnowFall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.

Max. Temp.: 99.5% Min. Temp.: 99.5% Precipitation: 99.5% Snowfall: 41.6% Snow Depth: 41.6%

Check [Station Metadata](#) or [Metadata graphics](#) for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

U C L A, CALIFORNIA (049152)

Period of Record Monthly Climate Summary

Period of Record : 7/ 1/1948 to 12/31/2005

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	65.7	66.4	66.5	68.4	69.3	72.2	76.7	77.8	77.7	74.9	71.0	66.6	71.1
Average Min. Temperature (F)	49.9	50.4	50.4	52.5	55.1	57.9	61.0	61.9	61.3	58.4	54.4	50.7	55.3
Average Total Precipitation (in.)	4.05	4.35	2.74	1.11	0.28	0.08	0.01	0.11	0.22	0.49	1.81	2.41	17.64
Average Total SnowFall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.

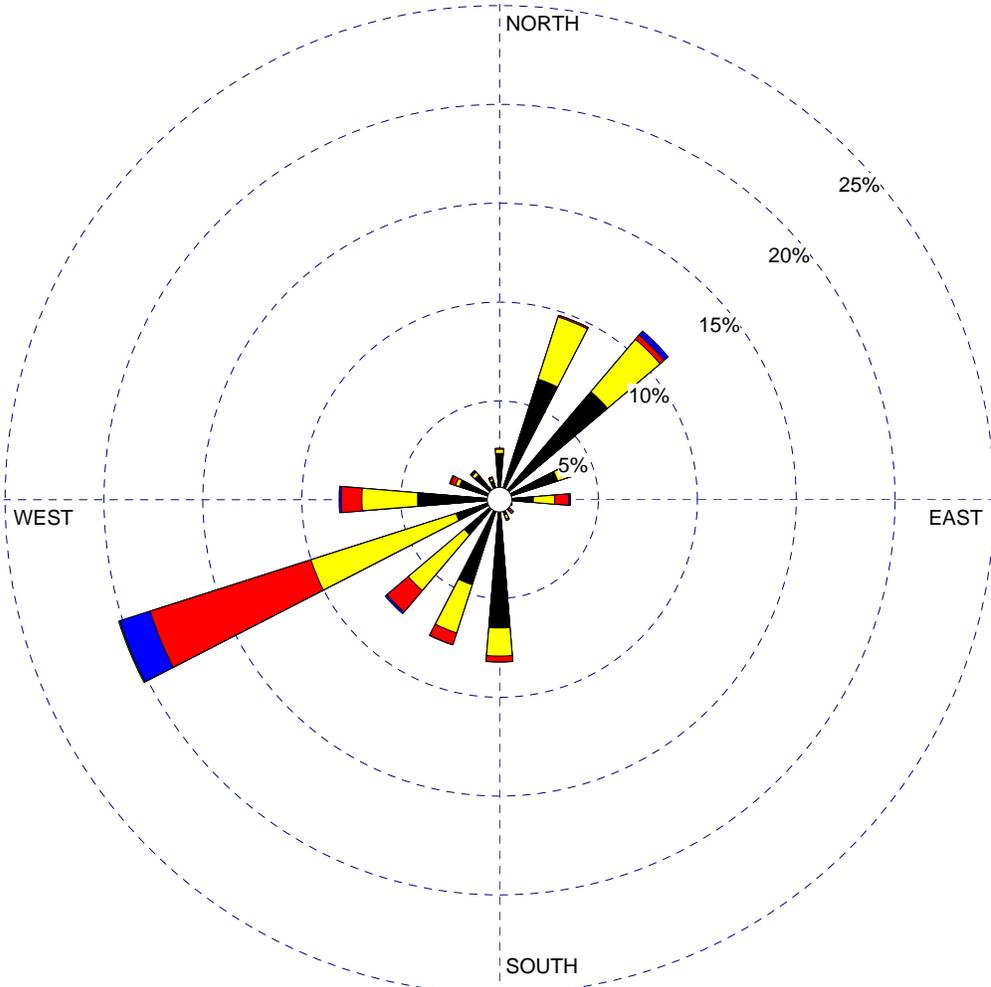
Max. Temp.: 98.5% Min. Temp.: 98.5% Precipitation: 98.6% Snowfall: 98.6% Snow Depth: 98.6%

Check [Station Metadata](#) or [Metadata graphics](#) for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

WIND ROSE PLOT:
Station #52075

DISPLAY:
Wind Speed
Direction (blowing from)



WIND SPEED
(m/s)

- >= 11.1
- 8.8 - 11.1
- 5.7 - 8.8
- 3.6 - 5.7
- 2.1 - 3.6
- 0.5 - 2.1

Calms: 7.90%

COMMENTS: Downtown Los Angeles	DATA PERIOD: 1981 Jan 1 - Dec 31 00:00 - 23:00	COMPANY NAME: ICF Jones & Stokes	
	CALM WINDS: 7.90%	MODELER: Victor Ortiz	
	AVG. WIND SPEED: 2.21 m/s	TOTAL COUNT: 8760 hrs.	
	DATE: 12/1/2008	PROJECT NO.: 00629.08	