Air Quality Report

Lost Hills/Route 101

Lost Hills Road Overcrossing Replacement & Interchange Modification Project

City of Calabasas in Los Angeles County

Caltrans District 7-US 101PM 31.9/32.3

Project ID 0700000419

October 2011

Caltrans

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October 2011

Prepared By: _____ Date: 10/13/11

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Summary

The California Department of Transportation – District 7 and the City of Calabasas proposes to improve the Lost Hills Road Interchange and replace a bridge at US Route 101 (US-101) in western Los Angeles County. The project would relieve congestion and improve operational efficiency on Lost Hills Road at US-101. The California Department of Transportation is the lead agency for compliance with the California Environmental Quality Act (CEQA). The city of Calabasas is the local agency sponsor and a Responsible Agency under CEQA.

The regional location and the project location are shown in Figures 1 and 2, respectively.

The purpose of this Air Quality Report is to evaluate potential short-term and long-term air quality impacts resulting from implementation of the proposed Lost Hills Road Interchange and Bridge Replacement Project. The Air Quality Report will analyze the regional transportation conformity but does not constitute a project-level air quality conformity analysis.

Table of Contents

Appendices

List of Tables

PAGE

List of Figures

PAGE

List of Abbreviated Terms

AB	Assembly Bill
$\mu g/m^3$	micrograms per cubic meter
AQMP	Air Quality Management Plan
AQR	Air Quality Report
Basin	South Coast Air Basin
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAT	Climate Action Team
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAP	Climate Change Action Plan
CCC	California Climate Change Center
CEQA	California Environmental Quality Act
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
DPM	diesel particulate matter
EPA	United States Environmental Protection Agency
FCAA	Federal Clean Air Act
FONSI	Finding of No Significant Impact
FHWA	Federal Highway Administration
FTIP	Federal Transportation Improvement Program
GHG	greenhouse gas
GVWR	gross vehicle weight rating
GWP	global warming potential
H&SC	Health and Safety Code
HFC	hydrofluorocarbon
IPCC	International Panel on Climate Change
ITS	intelligent transportation systems
LCFS	Low Carbon Fuel Standard
LOS	level of service
M	million
$MtCO_2e$	million tonnes of carbon dioxide equivalents
MSAT	Mobile Source Air Toxics
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NATA	National Air Toxics Assessment
NEPA	National Environmental Policy Act
NO	nitric oxide
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NO_X	nitrogen oxides
PEAR	Preliminary Environmental Analysis Report

List of Abbreviated Terms (cont)

PEIR	Program Environmental Impact Report
PERP	Portable Equipment Registration Program
PFC	perfluorocarbon
PM	particulate matter
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
POAQC	Project of Air Quality Concern
ppm	parts per million
PSR	Project Study Report
ROD	Record of Decision
ROG	reactive organic gases
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SER	Standard Environmental Reference
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SRA	source receptor area
Strategy	2009 California Climate Action Strategy
t	tonne (or metric ton)
tCO_2e	tonnes of carbon dioxide equivalent
TCWG	Transportation Conformity Working Group
UNFCCC	United Nations Framework Convention on Climate Change
VMT	vehicle miles travelled
VOC	volatile organic compounds

Chapter 1. Introduction

1.1. Purpose of the Air Quality Report

The purpose of this Air Quality Report (AQR) is to analyze the potential air quality impacts that would result from the Build Alternative for the Lost Hills Road Overcrossing project. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000 *et seq.*). The methodology follows the CEQA Air Quality Handbook prepared by the South Coast Air Quality Management District (SCAQMD) for quantification of emissions.

Air quality impacts associated with this project under the National Environmental Policy Act (NEPA) and the CEQA are evaluated in accordance to the State of California Department of Transportation (Caltrans) Standard Environmental Reference (SER) for Air Quality Section of the Environmental Assessment and Initial Study. It was determined in the Preliminary Environmental Analysis Report (PEAR) as presented in the Project Study Report (PSR) (Caltrans 2007) that the project is located in a nonattainment/maintenance area and is not exempt from project level or regional conformity and an air quality report would be required.

1.2. Project Purpose and Need

Caltrans proposes to replace the existing Lost Hills Road overcrossing bridge and interchange. It is currently inadequate due to closely spaced intersections in the vicinity of the overcrossing and the relatively high intersecting traffic flows, especially for the future growth conditions. The Proposed Project would increase roadway widths for the proper lane arrangements. In addition to the bridge inadequacies, the existing US-101 northbound and southbound ramps do not meet the current and future traffic demands. Without the Proposed Project, these conditions would continue to worsen as result of the continued population growth in the area.

Chapter 2. Project Description

2.1. Project Location

US-101 provides the primary regional access for the City of Calabasas and adjacent cities with the western part of Calabasas served by the interchanges at Lost Hills Road and Las Virgenes Road. Lost Hills Road is a north-south arterial street that extends from the Calabasas Landfill north of Canwood Street to its southerly termination at Las Virgenes Road. There are signalized intersections at the off and on-ramp locations for the existing diamond interchange. The regional location and the project location are shown in Figures 1 and 2, respectively.

2.2. No-Build Alternative

The No-Build Alternative considers no improvements to the Lost Hills Interchange by the year 2040. The existing features include a non-standard vertical clearance of the Lost Hills Road Overcrossing, with non-standard shoulders, an abrupt northbound merge on the bridge, and lack of left-turn storage. The existing bridge is approximately 39 feet wide with a 7 foot sidewalk and 32 feet of roadway. The existing north end of the bridge has two lanes, one in each direction, while the existing south end accommodates three lanes; two lanes entering northbound onto the bridge and one lane southbound. The two northbound lanes merge abruptly into one lane in the middle of the bridge. This alternative would not address the existing substandard design or accommodate the future growth in traffic in the region. Figure 3 illustrates the existing design of the Lost Hills Road Interchange.

2.3. Build Alternative

Under the Build Alternative, the project will:

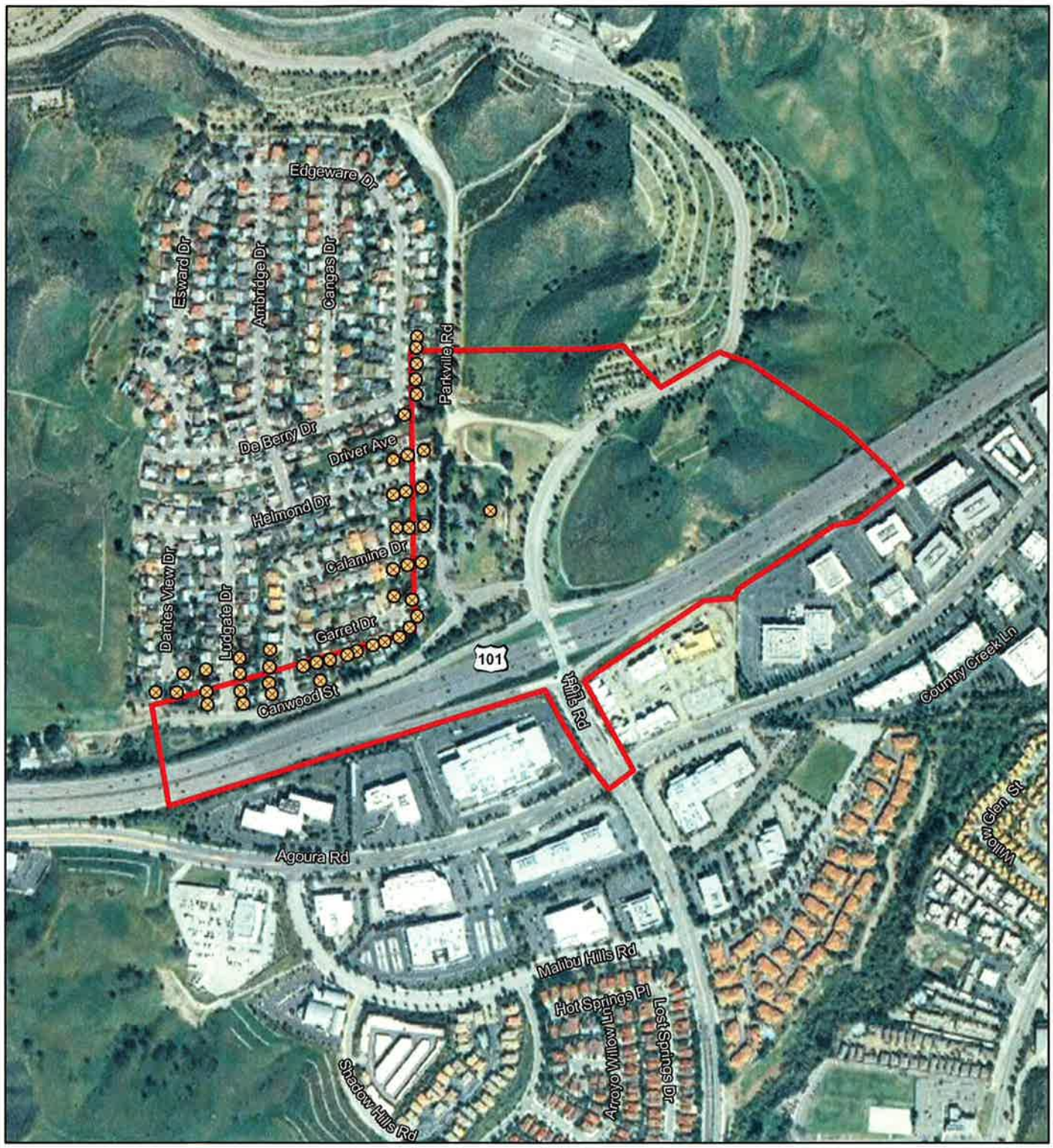
- Accommodate 10 lanes of traffic on the US-101 Freeway in accordance with the current Transportation Concept Report.
- The northbound off-ramp will be realigned to the north to allow construction of the new loop on-ramp.

This Alternative features a Cloverleaf interchange (on-and-off ramp) that replaces the existing northbound on- and off-ramp. This Alternative is designed as a Type L-7 one-quadrant Cloverleaf Interchange according to the Highway Design Manual section 502.2(c) with an on-ramp for northbound US-101, and the closure of the existing US-101

northbound on-ramp. The new cloverleaf northbound on-ramp would serve both northbound and southbound traffic on Lost Hills Road. Access to the residential community to the northwest of the interchange would remain at Canwood Street. Figure 4 illustrates the proposed design of the Build Alternative.

US 101/Lost Hills Road Interchange Project
City of Calabasas, CA
Project Location Map

Figure 1.



Legend

- Sensitive Land Use
- Project Area

N
W E
S

1:7,500

0 500 1,000

Feet

Figure 2
Sensitive Receptor Map
US 101 / Lost Hills Interchange
Improvement Project
City of Calabasas, CA

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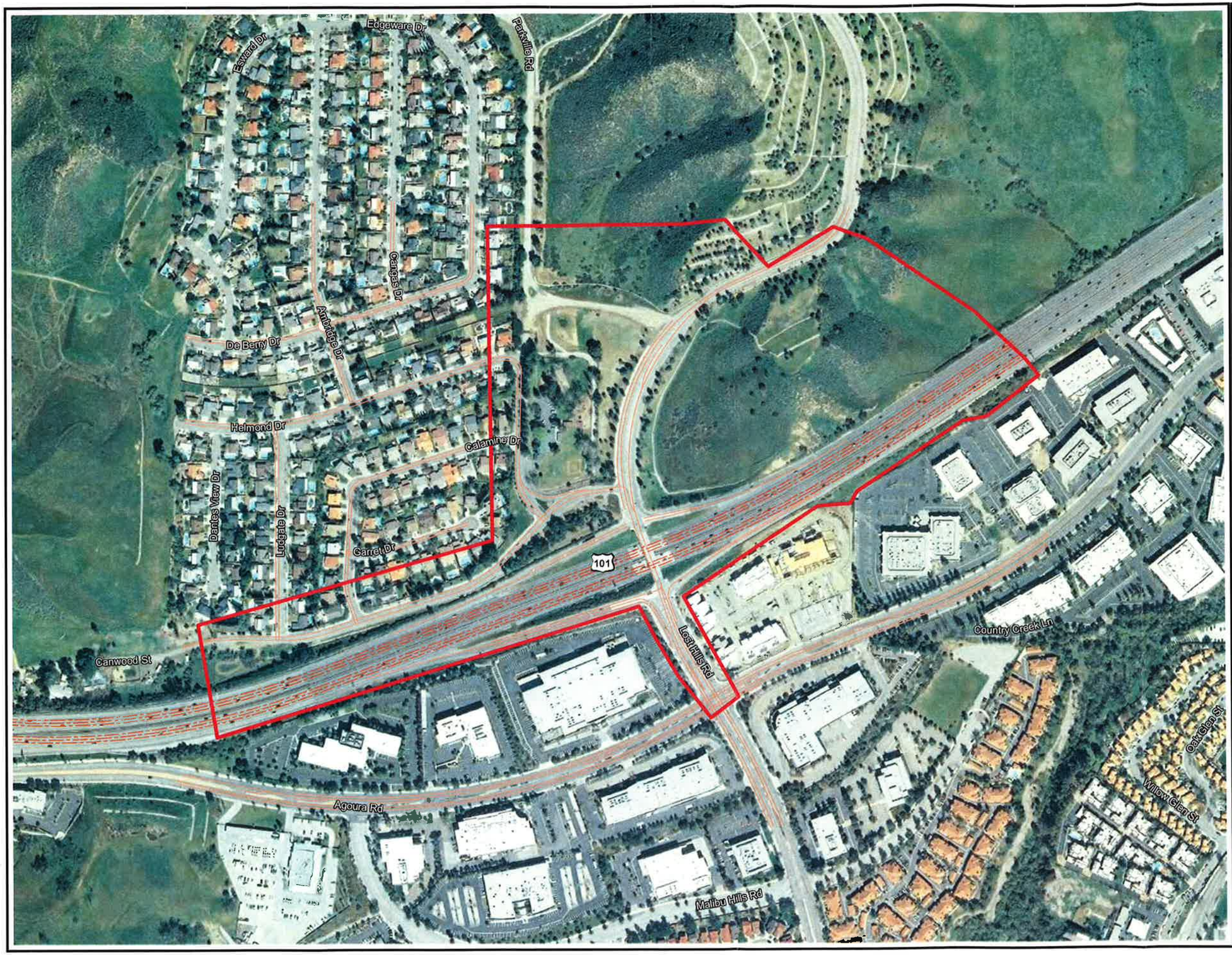

Figure 3

No-Build Alternative

Legend

Project Area

US 101 / Lost Hills Interchange
Improvement Project
City of Calabasas, CA

0 100 200 400
Feet

1:4,500

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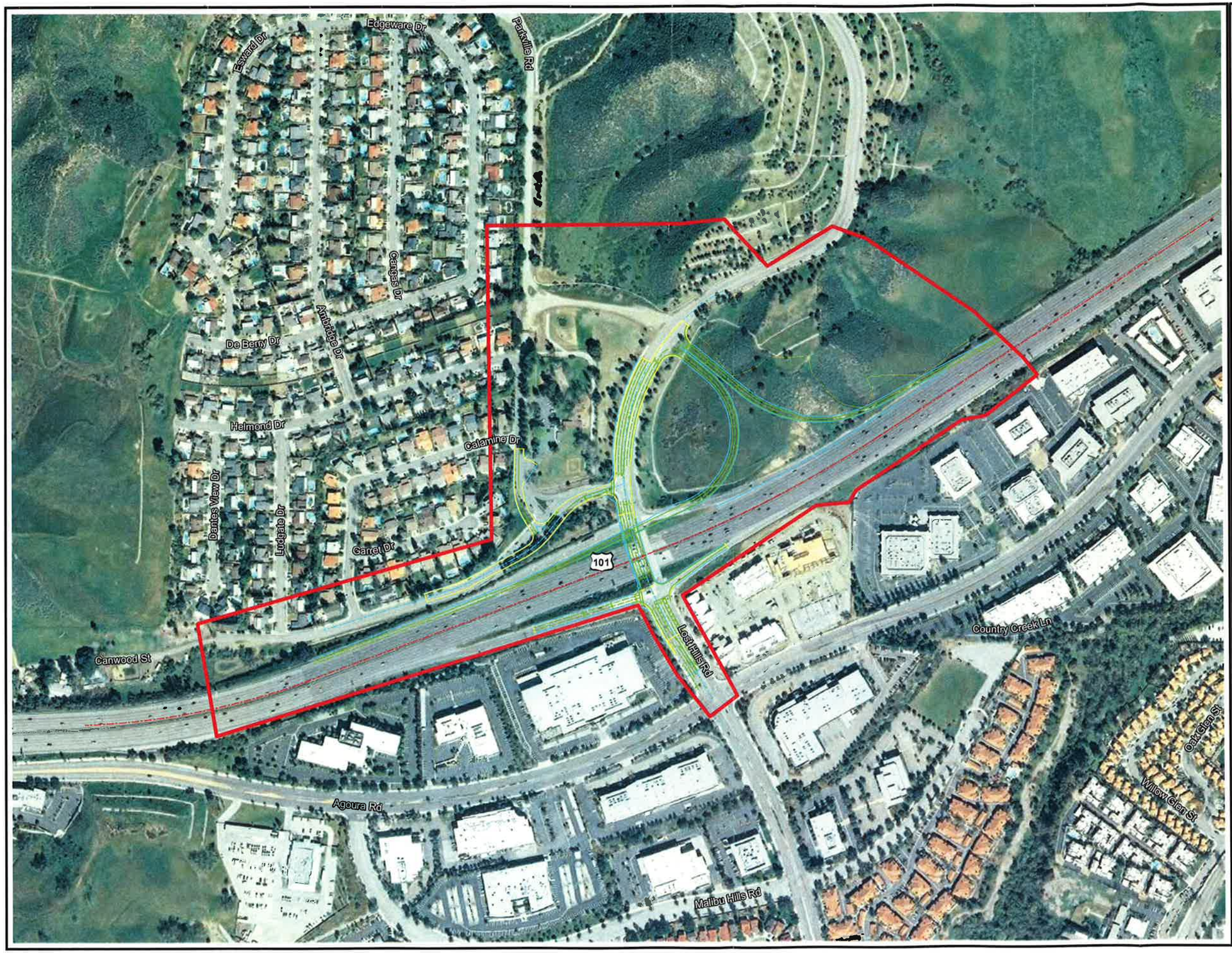

Figure 4

Build Alternative

Legend

Project Area

US 101 / Lost Hills Interchange
Improvement Project
City of Calabasas, CA

0 100 200 400
Feet

N
W E
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1:4,500

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Chapter 3. Affected Environment

The project is located in City of Calabasas in Los Angeles County. This region is located within the South Coast Air Basin (Basin) that includes all of Orange County as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Basin is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The Basin is bounded on the west by the Pacific Ocean and on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains.

3.1. Climate/Meteorology

Meteorology is the study of weather and climate. Weather refers to the state of the atmosphere at a given time and place relating to temperature, air pressure, humidity, cloudiness, and precipitation. Weather refers to conditions over short periods; conditions over long periods, generally at least 30 to 50 years, are referred to as climate. Climate in a narrow sense is usually defined as the "average weather," or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period ranging from months to thousands or millions of years.

The general 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. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station located nearest to the site is at the Canoga Park Pierce College Data from the Western Regional Climate Center (WRCC 2009). During the period of record for the station (1949 to 2006), Canoga Park Pierce College station reported an annual average maximum temperature of 80.4 °F. The annual average minimum temperature was reported at 47.3 °F. The highest monthly average maximum temperature was 95.4 °F in August and the lowest monthly average minimum temperature was 38.8 °F in December.

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. The climatological data shows that during the period of record the

Canoga Park Pierce College station averaged 16.86 inches per year, with approximately 93 percent of that rainfall occurring between December and April.

Although the Basin has a semi-arid climate, the air near the surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by off shore winds, the ocean effect is dominant.

Wind patterns across the south coastal region are characterized by westerly and southwesterly onshore winds during the day and easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season. In the morning and evening in the Project area, there are often strong breezes.

In conjunction with the characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are similar patterns that control the vertical depth through which pollutants are mixed called inversions[1]. The vertical mixing of air pollutants is limited by the presence of persistent temperature inversions. The height of the base of the inversion at any given time is known as the "mixing height". This mixing height can change under conditions when the top of the inversion does not change. The combination of winds and inversions are critical determinants for air quality in the Project area.

3.2. Baseline Atmospheric Environment

The following characterization of the baseline atmospheric environment includes an evaluation of the ambient air quality and applicable rules, regulations, and standards for the area. Because the Project has the ability to release gaseous emissions of criteria pollutants and dust into the ambient air, it falls under the ambient air quality standards promulgated on the local, state, and federal levels.

3.2.1. Air Quality Issues

The proposed Project site is subject to the rules and regulations imposed by the SCAQMD; however, the SCAQMD reports to the California Air Resources Board (CARB). Therefore, all emissions are also governed by the California Ambient Air

[1] A temperature inversion is a meteorological phenomenon where air temperature increases with height. Usually, within the lower atmosphere (the troposphere) the air near the surface of the Earth is warmer than the air above it, largely because the atmosphere is heated from below by solar radiation absorbed at the surface. Sometimes the gradient is inverted, so that the air gets colder nearer the surface of the Earth: this is a temperature inversion.

Quality Standards (CAAQS) as well as the National Ambient Air Quality Standards (NAAQS).

Topographical features that affect the transport and diffusion of pollutants in the project area include the mountain ranges to the northeast that prevent the transport of pollutants. Air quality in the Basin generally ranges from fair to poor and is similar to air quality in most of coastal Southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

Pollutants emitted into the air from stationary and mobile sources affect the ambient air quality. Stationary sources can be divided into two major subcategories: point sources and area sources. Point sources consist of one or more emission sources at a facility with an identified location and are usually associated with manufacturing and industrial processing plants. Area sources are widely distributed and produce many small emissions, such as residential water heaters.

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources are a combination of emissions from automobiles, trucks, and indirect sources. Indirect sources are sources that by themselves may not emit air contaminants; however, they indirectly cause the generation of air pollutants by attracting vehicle trips or consuming energy. Examples of indirect sources include an office complex or commercial center that generates commuter trips and consumes energy resources through the use of natural gas for space and water heating. Indirect sources also include actions proposed by local governments, such as redevelopment districts and private projects involving the development of either large buildings or tracts. In addition, indirect sources include those emissions created by the distance vehicles travel. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment.

3.2.2. Pollutants of Concern

Federal and State laws regulate the air pollutants emitted into the ambient air by stationary and mobile sources. 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 (SO_2), and most fine particulate matter (PM_{10}, $PM_{2.5}$) including lead and fugitive dust; are primary air pollutants. Of these CO, SO_2, PM_{10}, 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 reaction in the atmosphere. Ozone and nitrogen dioxide (NO_2) are the principal secondary pollutants.

Presented below is a description of each pollutant of concern in the Basin and their known health effects.

Carbon monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances (e.g., gasoline or diesel fuel). The primary adverse health effect associated with CO is the interference of normal oxygen transfer to the blood, which may result in tissue oxygen deprivation. According to the 2008 Estimated Annual Average Emissions (CARB 2009b), the major sources of CO in Los Angeles County were on-road motor vehicles (66% of the total CO), and off-road vehicles and equipment (30%).

Reactive organic gases (ROGs) are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions. ROGs consist of non-methane hydrocarbons and oxygenated hydrocarbons. Hydrocarbons are organic compounds that contain only hydrogen and carbon atoms. Non-methane hydrocarbons are hydrocarbons that do not contain the un-reactive hydrocarbon, methane. Oxygenated hydrocarbons are hydrocarbons with oxygenated functional groups attached.

It should be noted that there are no state or national ambient air quality standard for ROGs because they are not classified as criteria pollutants. They are regulated, however, because a reduction in ROGs emissions reduces certain chemical reactions that contribute to the formulation of ozone. ROGs are also transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility. Although health-based standards have not been established for ROGs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. The major sources of ROGs in Los Angeles County in 2008 were on-road motor vehicles (35% of the total ROG), other mobile sources (23%), and solvent evaporation (22%).

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 NO_2. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 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. NO_X is also an ozone precursor. A precursor is a directly emitted air contaminant that, when released

into the atmosphere, forms, causes to be formed, or contributes to the formation of a secondary air contaminant for which an AAQS has been adopted, or whose presence in the atmosphere will contribute to the violation of one or more AAQSs. When NO_X and ROGs are released in the atmosphere, they can chemically react with one another in the presence of sunlight to form ozone. The major sources of NO_X in Los Angeles County in 2008 were on-road vehicles (50% of the total NO_X) and other mobile sources (40%).

Ozone is one of a number of substances called photochemical oxidants that are formed when ROGs and NO_X react with sunlight. Ozone is present in relatively high concentrations in the Basin but somewhat less present nearer to the coast. Ozone may pose a health threat to those who already suffer from respiratory diseases as well as healthy people. Additionally, ozone has been tied to crop damage, typically in the form of stunted growth and pre-mature death. Ozone can also act as a corrosive resulting in property damage such as the embitterment of rubber products.

Particulate Matter consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulate are now recognized. Course inhalable particles, or PM_{10}, that include that portion of the particulate matter with an aerodynamic diameter of 10 microns (i.e., ten one-millionths of a meter or 0.0004 inch) or less. Fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns that is 2.5 one-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 action on the arid landscape also contributes substantially to the local particulate loading. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems. The SCAQMD recently promulgated both regional and localized emissions thresholds for $PM_{2.5}$. These are based on the proposed United States Environmental Protection Agency (EPA) standard of 10 tons per year as included in the Federal Register, September 8, 2005.

The major sources of PM_{10} in Los Angeles County in 2008 were paved road dust (38% of the total PM_{10}) and construction and demolition (14%). Since $PM_{2.5}$ is more a result of combustion than PM_{10}, the major sources of $PM_{2.5}$ in Los Angeles County in 2008 were more diverse. Most of the $PM_{2.5}$ was a result of paved road dust (16% of the total $PM_{2.5}$), construction and demolition (4% of the total $PM_{2.5}$), on-road motor vehicles (17%), and off-road equipment (10%).

Naturally occurring asbestos (NOA) is present in certain rock formations such as serpentinite and/or ultramafic rocks. Crushing or breaking these rocks, through construction or other means, can release the asbestos fibers into the air. Rock formations that contain NOA are known to be present in 44 of California's 58 counties, including Sonoma County. Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest and abdominal cavity), and asbestosis (a non-cancerous lung disease which causes scarring of the lungs).

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere, analogous to the way a greenhouse retains heat. The accumulation of greenhouse gases in the atmosphere regulates the earth's temperature to be suitable for life. However, human activities have increased the amount of greenhouse gases in the atmosphere. Some greenhouse gases can remain in the atmosphere for hundreds of years. The following is a brief description of the most common greenhouse gases.

- Carbon dioxide (CO_2) is an odorless, colorless natural greenhouse gas. CO_2 is emitted from natural and anthropogenic (man-made) sources. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
- Methane (CH_4) is a flammable greenhouse gas. A natural source of methane is from the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain methane, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and ruminants such as cattle.
- Nitrous oxide (N_2O), also known as laughing gas, is a colorless greenhouse gas. N_2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load.
- Chlorofluorocarbons (CFCs) are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. CFCs destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol in 1987. The project would not emit CFCs.
- Hydrofluorocarbons (HFCs) are synthetic chemicals that are used as a substitute for CFCs. Of all the greenhouse gases, HFCs are one of three groups (the other two are

perfluorocarbons and sulfur hexafluoride) with the highest global warming potential. The global warming potential is the potential of a gas to contribute to global warming; it is based on a reference scale with CO_2 at one. HFCs are human-made for applications such as air conditioners and refrigerants. It is not anticipated that the project would emit HFCs.

- Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere; therefore, PFCs have long atmospheric lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture. It is not anticipated that the project would emit PFCs.
- Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest global warming potential of any gas evaluated. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection. It is not anticipated that the project would emit SF_6.

3.3. Regulatory Agencies

3.3.1. Environmental Protection Agency (EPA)

The EPA is the federal agency responsible for overseeing state air programs as they relate to the Federal Clean Air Act (FCAA), approving State Implementation Plans (SIP), establishing NAAQSs and setting emission standards for mobile sources under federal jurisdiction. The EPA has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

3.3.2. California Air Resources Board (CARB)

The CARB is the state agency responsible for establishing CAAQS, adopting and enforcing emission standards for various sources including mobile sources (except where federal law preempts their authority), fuels, consumer products, and toxic air contaminants. The CARB is also responsible for providing technical support to California's 35 local air districts, which are organized at the county or regional level, overseeing local air district compliance with State and federal law, approving local air plans and submitting the SIP to the EPA. The CARB also regulates mobile emission sources in California, such as construction equipment, trucks, and automobiles.

3.3.3. South Coast Air Quality Management District (SCAQMD)

The county or regional air districts are primarily responsible for regulating stationary emission sources at industrial and commercial facilities within their geographic area and for preparing the air quality plans that are required under the FCAA and California Clean Air Act (CCAA). The SCAQMD is the air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties. This area of 10,743 square miles is home to over 16.7 million people - about half the population of the whole state of California. It is the second most populated urban area in the United States and one of the smoggiest.

3.4. Governing Statutes – National

3.4.1. Federal Clean Air Act (FCAA)

The FCAA was enacted in 1970 and last amended in 1990 (42 USC 7401, *et seq.*) with the purpose of controlling air pollution and providing a framework for national, state, and local air pollution control efforts. Basic components of the FCAA and its amendments include NAAQS for major air pollutants, hazardous air pollutants standards, SIP requirements, motor vehicle emissions standards, and enforcement provisions. The FCAA was enacted for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity.

3.4.2. National Ambient Air Quality Standards

As required by the FCAA, the EPA has identified criteria pollutants and established NAAQS to protect public health and welfare. NAAQS have been established for ozone, CO, nitrogen dioxide, sulfur dioxide, particulate matter, and lead. For some of the pollutants, the EPA and states have identified air quality standards expressed in more than one averaging time in order to address the typical exposures found in the environment. For example, CO is expressed as a one-hour averaging time and an eight-hour averaging time. Federal regulations set NAAQS limits in parts per million or micrograms per cubic meter. Regulation of air pollution is achieved through both national and State ambient air quality standards and emission limits for individual sources of air pollutants, as shown in Table 1.

Table 1 – National and State Ambient Air Quality Standards

Air Pollutant	Averaging Time	California Standard	National Standard
Ozone	1 hour	0.09 ppm	—
	8 hour	0.070 ppm	0.075 ppm
Respirable particulate matter (PM_{10})	24 hour	50 $\mu g/m^3$	150 $\mu g/m^3$
	Mean	20 $\mu g/m^3$	—
Fine particulate matter ($PM_{2.5}$)	24 hour	—	35 $\mu g/m^3$
	Mean	12 $\mu g/m^3$	15.0 $\mu g/m^3$
Carbon monoxide (CO)	1 hour	20 ppm	35 ppm
	8 hour	9.0 ppm	9 ppm
Nitrogen dioxide (NO_2)	1 hour	0.18 ppm	0.100 ppm [1]
	Mean	0.030 ppm	0.053 ppm [2]
Sulfur dioxide (SO_2)	1 hour	0.25 ppm	0.075 ppm [3]
	24 hour	0.04 ppm	—
Lead	30-day	1.5 $\mu g/m^3$	—
	Rolling 3-month	—	0.15 $\mu g/m^3$
	Quarter	—	1.5 $\mu g/m^3$
Sulfates	24 hour	25 $\mu g/m^3$	**No Federal Standard**
Hydrogen sulfide	1 hour	0.03 ppm	
Vinyl chloride**	24 hour	0.01 ppm	
Visibility-reducing particles	8 hour	Extinction coefficient of 0.23 per kilometer, visibility of ten miles or more due to particles when relative humidity is less than 70%.	

Abbreviations:
ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
30-day = 30-day average
Quarter = Calendar quarter
Mean = Annual Arithmetic Mean

** The CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[1] The new 1-hour NO_2 standard, that was effective January 22, 2010, is in parts per billion (ppb) but in order to compare national and California standards directly, it has been converted to ppm, i.e. 100 ppb = 0.100 ppm.

[2] The new average annual mean NO_2 standard, that was also effective January 22, 2010, is in ppb but in order to compare national and California standards directly, it has been converted to ppm, i.e. 53 ppb = 0.053 ppm.

[3] The new 1-hour SO_2 standard, that was effective August 23, 2010, is in ppb but in order to compare national and California standards directly, it has been converted to ppm, i.e. 75 ppb = 0.075 ppm.

Source: CARB 2011.

NAAQS Attainment Status

EPA has identified nonattainment and attainment areas for each criteria air pollutant. Under amendments to the FCAA, the EPA has classified air basins or portions thereof as "attainment," "nonattainment," or "unclassifiable," based on whether or not the national standards have been achieved. The EPA uses two categories to designate areas with respect to $PM_{2.5}$ and NO_2, which include (1) does not meet the standard (nonattainment) and (2) cannot be classified or better than national standards (unclassifiable/attainment). The EPA uses four categories to designate for SO_2 but the only two that are applicable in California are nonattainment or unclassifiable. The EPA uses three categories to designate for PM_{10}: attainment, nonattainment, and unclassifiable. The FCAA uses the classification system to design clean-up requirements appropriate for the severity of the pollution and set realistic deadlines for reaching clean-up goals.

If an air basin is not in federal attainment (that is, it does not meet federal standards) for a particular pollutant, the basin is classified as a marginal, moderate, serious, severe, or extreme nonattainment area, based on the estimated time it would take to reach attainment. Nonattainment areas must take steps towards attainment by a specific timeline. The SCAQMD was an Extreme area for prior 1-hour ozone standard but was classified as Severe-17 for the 8-hour standard. Additionally they are classified as a Serious area for PM_{10}. Even though EPA wants nonattainment areas to achieve the primary standard "as expeditiously as practicable", a Severe-17 classification regulates the SCAQMD to attain no later than 17 years after enactment. The SCAQMD has requested a "bump-up" to Extreme for ozone (EPA 2009), which would extend attainment date to 20 years after enactment. Attainment designations and classifications in the affected area are listed in Table 2.

Finally, when an area has documented data proving no violations of the standard and petition the EPA to redesignate to attainment, the agency has an obligation to provide a maintenance plan that would provide for continued maintenance of a NAAQS within former nonattainment areas.

Table 2 – Designations/Classifications for the Basin

Pollutant	State Designation	Federal Designation (Classification)
Ozone	Nonattainment	Nonattainment (Extreme)[1]
PM_{10}	Nonattainment	Nonattainment (Serious)
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Maintenance[2]
NO_2	Attainment	Maintenance[3]
Lead	Nonattainment	Nonattainment[4]

Source: CARB 2010.

[1] Effective June 4, 2010, EPA granted the SCAQMD's petition for the SCAB to be redesignated to Extreme for the federal 1-hour ozone standard, with the exception of tribal areas.

[2] On April 24, 2007, EPA's Regional Administrator signed a final rule to approve the South Coast Maintenance Plan and Redesignation Request for Carbon Monoxide.

[3] On January 15, 2009, EPA's Regional Administrator signed a final rule to approve in part and disapprove in part the South Coast 2003 1-hour ozone plan and the NO_2 maintenance plan. The parts of the plan, prepared by the SCAQMD and the CARB, which EPA approved, strengthen the SIP.

[4] Only the Los Angeles County portion of the SCAB is designated nonattainment for 2008 lead standards.

Federal clean air laws require areas with unhealthy levels of ozone, CO, NO_2, SO_2, and PM_{10} to develop plans, known as SIPs, describing how they will attain NAAQS. The SIP consists of a number of documents that set forth the State's and local agencies' strategies for achieving federal air quality standards. The Code of Federal Regulations (CFR Title 40, Chapter I, Part 52, Subpart F, Section 52.220) lists all of the items that are included in the California SIP. The SIP includes new and previously submitted plans, programs (monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. Many of California's SIPs detail control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. Local air districts and other agencies, such as the Bureau of Automotive Repair, prepare SIP elements and submit them to the CARB for review and approval. State law makes the CARB the lead agency for all purposes related to the SIP.

3.4.3. Conformity

Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to State Implementation Plan for achieving the goals of the Clean Air Act requirements. Conformity with the Clean Air Act takes place on two levels—first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved.

Regional level conformity in California is concerned with how well the region is meeting the standards set for CO, NO_2, ozone, lead, and particulate matter. California is in attainment for the other criteria pollutants. At the regional level, Regional Transportation Plans (RTP) are developed that include all of the transportation projects planned for a region over a period of years, usually at least 20. Based on the projects included in the RTP, an air quality model is run to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that attainment requirements of the FCAA are met. If the conformity analysis is successful, the regional planning organization, such as Southern California Association of Governments (SCAG) for Basin and the appropriate federal agencies, such as the Federal Highway Administration (FHWA), make the determination that the RTP is in conformity with the State Implementation Plan for achieving the goals of the FCAA. Otherwise, the projects in the RTP must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as described in the RTP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires "hot spot" analysis if an area is "nonattainment" or "maintenance" for CO and/or particulate matter. A region is a "nonattainment" area if one or more monitoring stations in the region fail to attain the relevant standard. Areas that were previously designated as nonattainment areas but have recently met the standard are called "maintenance" areas. "Hot spot" analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA purposes. Conformity does include some specific standards for projects that require a hot spot analysis. In general, projects must not cause the CO standard to be violated, and in "nonattainment" areas the project must not cause any increase in the number and severity of violations. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

3.4.4. Federal Emission Standards for Nonroad Diesel Engines

To reduce emissions from nonroad diesel equipment, the EPA in 1998 established a series of cleaner emission standards for new nonroad diesel engines. Tier 1 standards were phased in from 1996 to 2000 (year of manufacture), depending on the engine horsepower category. Tier 2 standards were phased in from 2001 to 2006. Tier 3 standards were phased in from 2006 to 2008. The Clean Air Nonroad Diesel Rule (EPA 2004) also established Tier 4 standards. Beginning in 2008, the new Tier 4 engine

standards for five power categories for engines from under 25 horsepower to above 750 horsepower were phased in. These standards apply to construction equipment.

3.4.5. Federal Greenhouse Gas and Climate Change Issues

International and federal legislation have been enacted to deal with global climate change issues. In 1988, the United Nations and the World Meteorological Organization established the International Panel on Climate Change (IPCC) to assess the scientific, technical, and socioeconomic information relevant to understanding the scientific basis for human-induced climate change, its potential impacts, and options for adaptation and mitigation. The most recent reports of the IPCC have emphasized the scientific consensus that real and measurable changes to the climate are occurring, that they are caused by human activity, and that significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable.

In October 1993, President Clinton announced his Climate Change Action Plan (CCAP), which had a goal of returning GHG emissions to 1990 levels by the year 2000. This was to be accomplished through 50 initiatives that relied on innovative voluntary partnerships between the private sector and government aimed at producing cost effective reductions in GHG emissions. On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments agreed to gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of global climate change. In 2007, the United States Supreme Court declared in the court case of Massachusetts et al. vs. the EPA et al., 549 C.S. 497 that the EPA does have the ability to regulate GHG emissions. In addition to the national and international efforts described above, many local jurisdictions have adopted climate change policies and programs.

Proposed Endangerment Finding

On April 17, 2009, EPA issued its proposed endangerment finding for GHG emissions. EPA is proposing to find that greenhouse gases in the atmosphere endanger the public health and welfare of current and future generations. Concentrations of greenhouse gases are at unprecedented levels compared to the recent and distant past. EPA has stated that these high atmospheric levels are the unambiguous result of human emissions, and are very likely the cause of the observed increase in average temperatures and other climatic changes. The effects of climate change observed to date and projected to occur in the

future – including but not limited to the increased likelihood of more frequent and intense heat waves, more wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea level rise, more intense storms, harm to water resources, harm to agriculture, and harm to wildlife and ecosystems – are effects on public health and welfare within the meaning of the Clean Air Act.

Mandatory GHG Reporting Rule

On September 22, 2009, in response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), EPA promulgated a rule that requires mandatory reporting of GHG emissions greater than 25,000 metric tons per year from large sources in the United States. The new rule would collect accurate and comprehensive emissions data to inform future policy decisions.

Corporate Average Fuel Economy Standards

The federal Corporate Average Fuel Economy (CAFE) standard determines the fuel efficiency of certain vehicle classes in the United States. In 2007, as part of the Energy and Security Act of 2007, CAFE standards were increased for new light-duty vehicles to 35 miles per gallon by 2020. In May 2009, President Obama announced plans to increase CAFE standards to require light-duty vehicles to meet an average fuel economy of 35.5 miles per gallon by 2016.

3.5. Governing Statutes – State

3.5.1. California Clean Air Act

The CARB, which became part of the California Environmental Protection Agency (Cal-EPA) in 1991, is responsible for responding to the FCAA, regulating emissions from motor vehicles and consumer products, and implementing the CCAA. The CCAA outlines a program to attain the CAAQSs for ozone, NO_2, SO_2, and CO by the earliest practical date. Since CAAQSs are more stringent than NAAQSs in most cases, attainment of the CAAQS will require more emissions reductions than what would be required to show attainment of the NAAQS. Similar to the federal system, the state requirements and compliance dates are based upon the severity of the ambient air quality standard violation within a region.

3.5.2. California Ambient Air Quality Standards

The Health and Safety Code (H&SC) Section 39607(e) requires the CARB to establish and periodically review area designation criteria. These designation criteria provide the basis for the Board to designate areas of California as attainment, nonattainment, or unclassified for the state standards.

In addition, H&SC Section 39608 requires the CARB to use the designation criteria to designate areas of California and to review those area designations annually. The CARB makes area designations for 10 pollutants: ozone, suspended particulate matter (PM_{10} and $PM_{2.5}$), CO, NO_2, SO_2, sulfates, lead, hydrogen sulfide, and visibility-reducing particles. Each year, the CARB reviews the area designations and updates them as appropriate, based on the three most recent complete and validated calendar years of air quality data. CAAQSs are listed in Table 2.

CAAQS Attainment Status

The last published Area Designations and Maps from the CARB was in 2006. The area designations are made on a pollutant-by-pollutant basis, for all pollutants listed above. In April 2005, the CARB reaffirmed the existing 1-hour State ozone standard and adopted a new State 8-hour ozone standard. The 8-hour standard of 0.070 parts per million (ppm) became effective on May 17, 2006. This year's review of the State area designations was the first to consider the State 8-hour ozone standard and, because the 8-hour standard is more health-protective than the 1-hour standard, there was a change in area designation for a number of areas.

The state designation criteria specify four categories: nonattainment, nonattainment-transitional, attainment, and unclassified. A nonattainment designation indicates one or more violations of the state standard have occurred. A nonattainment-transitional designation is a subcategory of nonattainment that indicates improving air quality, with only occasional violations or exceedances of the State standard. In contrast, an attainment designation indicates no violations of the State standard have occurred in any site within the area. Finally, an unclassified designation indicates either no air quality data or an incomplete set of air quality data. Attainment designations in the affected area are listed in Table 2.

3.5.3. California Diesel Regulations

The CARB is responsible for developing statewide programs and strategies to reduce the emission of smog-forming pollutants and toxics by diesel-fueled mobile sources. The identification of diesel particulate matter (DPM) as a toxic air contaminant in 1998 led the CARB to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in 2000 (CARB 2000). Included here are some of the resultant regulations that may be pertinent to this project.

California Diesel Fuel Regulations

This rule sets sulfur limitations for diesel fuel sold in California for use in on-road and off-road motor vehicles (CARB 2007). Under this rule, diesel fuel used in motor vehicles had been limited to 500 ppm sulfur since 1993. The sulfur limit was reduced to 15 ppm beginning in September 1, 2006. (A federal diesel rule similarly limits sulfur content nationwide for on-road vehicles to 15 ppm, which began on October 15, 2006).

California In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, the CARB adopted a regulation to reduce DPM and NO_X emissions from in-use (existing) off-road heavy-duty diesel vehicles in California (CARB 2007). Any person, business, or government agency that owns or operates diesel-powered off-road vehicles in California (except for agricultural or personal use, or for use at ports or intermodal railyards) with engines with maximum power of 25 horsepower or greater are subject to the regulation. The regulation applies to vehicles commonly used in construction, mining, rental, airport ground support, and other industries. Out-of-state companies doing business in California are also subject to the regulation.

California On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation

In 2008, the CARB approved a regulation (CARB 2000b) to reduce emissions from existing trucks and buses operating in California significantly. Affected vehicles include on-road, heavy-duty, diesel-fueled vehicles with a gross vehicle weight rating (GVWR) greater than 14,000 pounds; yard trucks with off-road certified engines; and diesel-fueled shuttle vehicles of any GVWR. Out-of-state trucks and buses that operate in California are also subject to the regulation. Approximately 170,000 businesses in nearly all industry sectors in California, and almost a million vehicles that operate on California roads each year, are affected. Some common industry sectors that operate vehicles subject to the regulation include for-hire transportation; construction, manufacturing, retail, and wholesale trade; vehicle leasing and rental; bus lines; and agriculture.

3.5.4. Statewide Portable Equipment Registration Program (PERP)

The Portable Equipment Registration Program (PERP) (CARB 2007b) is a voluntary statewide program to register portable equipment such as air compressors, generators, concrete pumps, tub grinders, wood chippers, water pumps, drill rigs, pile drivers, rock drills, abrasive blasters, aggregate screening and crushing plants, concrete batch plants, and welders. Portable equipment registered in PERP may operate throughout the State without obtaining permits from any of California's 35 air quality management or air pollution control districts (air districts). The PERP establishes a uniform program to regulate portable engines and portable engine-driven equipment units. Once registered in

the PERP, engines and equipment units may operate throughout California without the need to obtain individual permits from local air districts. The PERP generally would apply to proposed dredging and barge equipment.

3.5.5. Naturally Occurring Asbestos (NOA)

In July 2002, the CARB approved an Air Toxic Control Measure for construction, grading, quarrying and surface mining operations to minimize NOA emissions. (CARB 2007c) The regulation requires application of best management practices to control fugitive dust in areas known to have NOA, and it requires notification to the local air district prior to commencement of ground-disturbing activities.

3.5.6. California Greenhouse Gas and Climate Change Issues

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's IPCC, the efforts devoted to GHG emissions reduction and climate change research and policy have increased dramatically in recent years.

Climate change is a change in the average weather of the earth that may be measured by changes in wind patterns, storms, precipitation, and temperature. According to the California Climate Change Center's (CCC) 2006 report "Our Changing Climate, Assessing the Risks to California," climate change effects in California may result in consequences such as loss of snow-pack, increased risk of large wildfires, and reductions in the quality and quantity of certain agricultural products (CCC 2006).

Individual GHG compounds have varying global warming potentials (GWP) and atmospheric lifetimes. The reference gas for the GWP is CO_2; CO_2 has a GWP of one. The calculation of the CO_2e is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent metric. Methane's warming potential of 21 indicates that methane has a 21 times greater warming affect than CO_2 on a molecule per molecule basis. A CO_2e is the mass emissions of an individual GHG multiplied by its GWP. GHGs are often presented in units called tonnes (t) (i.e. metric tons) of CO_2e (tCO_2e).

In 2004, total worldwide GHG emissions were estimated to be 20,135 million (M) tonnes of CO_2e ($MtCO_2e$), excluding emissions/removals from land use, land use change, and forestry. In 2004, GHG emissions in the U.S. were 7,074 $MtCO_2e$. In 2004, California emitted 500 $MtCO_2e$, including imported electricity and excluding combustion of international fuels and carbon sinks or storage. The major source of GHGs in California is transportation, contributing 41 percent of the state's total GHG emissions. Electricity

generation is the second largest source, contributing 22 percent of the state's GHG emissions.

3.5.7. California Climate Change Regulations

Executive Order S-3-05

On June 1, 2005, the Governor issued EO S 3-05 which set the following GHG emission reduction targets:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels;
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

To meet these targets, the Climate Action Team (CAT) prepared a report to the Governor in 2006 that contains recommendations and strategies to help ensure the targets in EO S-3-05 are met. The GHG emissions for this year will be estimated in 2011 to demonstrate if the first target was reached.

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

In 2006, the California State Legislature enacted the California Global Warming Solutions Act of 2006, also known as AB 32. AB 32 focuses on reducing GHG emissions in California. GHGs, as defined under AB 32, include CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. The CARB is the state agency charged with monitoring and regulating sources of emissions of GHGs that cause global warming in order to reduce emissions of GHGs. AB 32 also requires that by January 1, 2008, the CARB must determine what the statewide GHG emissions level was in 1990, and it must approve a statewide GHG emissions limit so it may be applied to the 2020 benchmark. The CARB approved a 1990 GHG emissions level of 427 $MtCO_2e$, on December 6, 2007 in its Staff Report. Therefore, in 2020, emissions in California are required to be at or below 427 $MtCO_2e$.

Under the current "business as usual" scenario, statewide emissions are increasing at a rate of approximately 1 percent per year as noted below. Also shown are the average reductions needed from all statewide sources (including all existing sources) to reduce GHG emissions back to 1990 levels.

- 1990: 427 $MtCO_2e$
- 2004: 480 $MtCO_2e$ (an average 11-percent reduction needed to achieve 1990 base)

- 2008: 495 $MtCO_2e$ (an average 14-percent reduction needed to achieve 1990 base)
- 2020: 596 $MtCO_2e$ "Business As Usual" (an average 28-percent reduction needed to achieve 1990 base).

State Legislation Addressing Vehicular Emissions

California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB would apply to 2009 and later model year vehicles. CARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030.

Executive Order S-01-07 was enacted by the Governor on January 18, 2007. Essentially, the order mandates the following: 1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and 2) that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California. It is assumed that the effects of the LCFS would be a 10 percent reduction in GHG emissions from fuel use by 2020. On April 23, 2009, CARB adopted regulations to implement the LCFS.

3.6. 2007 Air Quality Management Plan (AQMP)

To ensure continued progress toward clean air and comply with State and federal requirements, the SCAQMD, in conjunction with the CARB and SCAG, prepared the 2007 revision to its AQMP. The 2007 AQMP employs up-to-date science and analytical tools and incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources.

The 2007 AQMP demonstrates attainment with the federal 8-hour ozone standard and for $PM_{2.5}$, replaces the 2003 attainment demonstration for the federal CO standard, and maintenance plan for CO for the future; and updates the maintenance plan for the federal NO_2 standard that the Basin has met since 1992.

The 2007 AQMP also addresses several State and 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 is consistent with and builds upon the approaches taken

in the 2003 and 1997 AQMP and the 1999 Amendments to the SIP for the Basin for the attainment of the federal ozone air quality standard. However, this revision points to the urgent need for additional emission reductions (beyond those incorporated in the 1997/99 Plan) to offset increased emission estimates from mobile sources and meet all federal criteria pollutant standards within the time frames allowed under the FCAA.

Each revision of the AQMP represents a snapshot in time, based on the best available information. The 2007 AQMP generally is very similar to the structure of the 2003 AQMP, 1997 AQMP, and the 1999 Amendments to the ozone SIP, but like all new editions includes significant enhancements. The key updates incorporated in the 2007 AQMP are summarized as follows:

- Revised emissions inventory projections using 2002 as the base year, the CARB on-road motor vehicle emissions model EMFAC2007, and SCAG 2004 RTP forecast assumptions;
- Revised control strategy that updates remaining control measures from the 2003 AQMP, 1997/1999 SIP, and incorporation of new control measures toward attainment of the federal 8-hour ozone and $PM_{2.5}$ standards based on current technology assessments;
- Reliance on updated modeling tools for attainment demonstration relative to ozone, PM_{10} and $PM_{2.5}$; and
- Attainment demonstration of the federal 8-hour ozone and $PM_{2.5}$ standards.

The 2007 AQMP employs up-to-date science and analytical tools and incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on-road and off-road mobile sources, and area sources. While many technical tasks are still underway to complete the Plan revision, there is sufficient information to begin framing policy discussions on clean air strategies. Hence, the Draft Plan has been prepared and is being released for early public review and participation.

The 2007 AQMP proposes attainment demonstration of the federal $PM_{2.5}$ standards through a more focused control of SO_X, directly emitted $PM_{2.5}$, and NO_X supplemented with volatile organic compounds[2] (VOC) by 2014. The 8-hour ozone control strategy builds upon the $PM_{2.5}$ strategy, augmented with additional VOC reductions to meet the standard by 2020. An extended attainment date (i.e., additional 3 years) is allowed under

[2] Volatile organic compounds are considered synonymous with reactive organic gases

the Clean Air Act if a "bump-up" request is made by the state showing the need for such extension.

The 2007 AQMP proposes policies and measures currently contemplated by responsible agencies to achieve federal standards for healthful air quality in the Basin. The 2007 AQMP also 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.

3.7. Standard Conditions and Uniform Codes

All projects constructed in the Basin are subject to Standard Conditions and Uniform Codes. Compliance with these provisions is mandatory and as such, does not constitute mitigation under CEQA. Those conditions specific to air quality are included below:

- Adherence to SCAQMD Rule 403, which sets requirements for dust control associated with grading and construction activities;
- Adherence to SCAQMD Rules 431.1 and 431.2, which require the use of low sulfur fuel for stationary construction equipment; and
- Adherence to SCAQMD Rule 1108, which sets limitations on ROG content in asphalt.

During construction, the project would be subject to SCAQMD Rule 403 (fugitive dust). SCAQMD Rule 403 does not require a permit for construction activities, *per se*, but rather, sets forth general and specific requirements for all construction sites (as well as other fugitive dust sources) in the Basin. The general requirement prohibits a person from causing or allowing emissions of fugitive dust from construction (or other fugitive dust source) such that the presence of such dust remains visible in the atmosphere beyond the property line of the emissions source. SCAQMD Rule 403 also prohibits a construction site from causing an incremental PM_{10} concentration impact at the property line of more than 50 micrograms per cubic meter as determined through PM_{10} high-volume sampling, but the concentration standard and associated PM_{10} sampling do not apply if specific measures identified in the rule are implemented and appropriately documented.

In accordance with Rule 403, the SCAQMD requires that contractors implement applicable best available control measures included in Table 1 of Rule 403. Note that these measures are regulatory requirements.

3.8. Baseline Air Quality

Existing levels of ambient air quality and historical trends and projections of air quality in the project area are best documented from measurements made near the project site. Existing air quality within the vicinity of the project has been monitored by the SCAQMD. The SCAQMD has an extensive air-monitoring network that measures levels of several air pollutants throughout the Basin. The SCAQMD has subdivided the Basin into 38 Source-Receptor Areas (SRA), each containing one or more monitoring stations. These SRAs provide a general representation of the local meteorological and air quality conditions within the particular area. The project is located within SRA 6, West San Fernando Valley of Los Angeles County. The nearest monitoring station to the proposed site is in Reseda on Reseda Blvd, approximately 10 miles east northeast of the Project. The Reseda station monitors ozone, CO and $PM_{2.5}$. Since the Reseda Station does not measure PM_{10}, a "surrogate" monitor in required. The nearest Station that most closely would represent similar ambient data would be the Burbank Station located on West Palm Avenue. Table 3 summarizes 2007 through 2009 published monitoring data from the CARB's Aerometric Data Analysis and Management System for the Reseda Station.

Table 3 – Air Quality Monitoring Summary

Air Pollutant	2007	2008	2009
Ozone – Reseda Station			
Max 1 Hour (ppm)	0.129	0.123	0.115
Days > CAAQS (0.09 ppm)	21	23	15
Max 8 Hour (ppm)	0.105	0.103	0.100
Days > NAAQS (0.08 ppm[1])	28	25	19
Days > CAAQS (0.070 ppm)	43	39	31
Carbon Monoxide – Reseda Station			
Max 8 Hour (ppm)	2.76	2.88	2.84
Days > NAAQS (9 ppm)	0	0	0
Days > CAAQS (9.0 ppm)	0	0	0
Particulate Matter (PM_{10}) – Burbank Station			
Max Daily 24 hour Measurement	107	61	76
Days > NAAQS (35 $\mu g/m^3$)	0	0	0
Days > CAAQS (35 $\mu g/m^3$)	5	5	10
Particulate Matter ($PM_{2.5}$) – Reseda Station			
Max Daily 24 hour Measurement	43.3	50.5	39.9
Days > NAAQS (35 $\mu g/m^3$)	1	2	1

Abbreviations:
> = exceed ppm = parts per million $\mu g/m^3$ = micrograms per cubic meter
CAAQS = California Ambient Air Quality Standard NAAQS = National Ambient Air Quality Standard
1. Days above the 1997 Standard
Source: CARB 2010b

As shown in Table 3, ambient air pollution concentrations in the Reseda area have not exceeded any CO standard in the last three years. The Reseda Station did exceed the state 1-hour ozone standard, both state and federal 8-hour ozone standards, and the federal 24-hour $PM_{2.5}$ standard in all three years. Additionally, the Burbank Station exceeded the State PM_{10} standard but not the federal PM_{10} standard for all three years.

Chapter 4. Environmental Consequences

This section analyzes the potential impacts of the proposed project on the air quality in the area surrounding the site. It calculates the expected emissions from the construction and operation of the project as a necessary requisite to assist the assessment of regulatory significance of project emissions on a local and regional level and contains an analysis of the criteria in the CEQA guidelines regarding air quality as well as an assessment of project conformity with the General Plan.

4.1. Assessment Methodology

The proposed project would generate construction-related and operational emissions. The methodology used to evaluate construction and operational effects is described below.

Construction-Period Impact Assessment Methodology

Under NEPA, construction impacts to air quality are considered temporary and there is no requirement to quantify emissions. This is not the case under CEQA. Therefore, to provide the quantified data necessary to assist in CEQA determinations, construction-period emissions are quantified as recommended by the SCAQMD in its *CEQA Air Quality Handbook (SCAQMD 1993)* (as updated per the SCAQMD website) guidance document.

Operational-Period Impact Assessment Methodology

Because the Basin is in nonattainment, serious nonattainment, and/or attainment/ maintenance for ozone 1-hour, ozone 8-hour, PM_{10}, $PM_{2.5}$, CO, and NO_2, the following analyses were conducted for the proposed project:

- CO hot-spot analysis
- PM_{10} and $PM_{2.5}$ hot-spot analysis
- Mobile Source Air Toxics (MSAT) emissions analysis

With respect to localized emissions, the primary pollutants of concern are CO and particulates ($PM_{2.5}$ and PM_{10}). The effects of CO emissions were evaluated using the Caltrans' CO protocol (Garza et al. 1997). The effects of $PM_{2.5}$, PM_{10}, and ozone precursors were evaluated through the conformity process described below.

4.2. Short-Term Construction Impacts

Construction is a source of fugitive dust and exhaust emissions that can have substantial temporary impacts on local air quality (i.e., exceed state air quality standards for $PM_{2.5}$ and PM_{10}). Construction emissions are caused by onsite or offsite activities. Onsite emissions principally consist of exhaust emissions (NO_X, CO, VOC, PM_{10}, and $PM_{2.5}$) from heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Offsite emissions are caused by motor vehicle exhaust from delivery vehicles, as well as worker traffic, but also include road dust (PM_{10}). Major construction-related activities for this project include the following:

- Grading/clearing, including the excavation;
- Excavation and earth moving for infrastructure construction of the utilities, both on and offsite; and
- Asphalt paving.

Construction equipment such as scrapers, dozers, graders, trenchers, excavators, water trucks, and signal boards are expected to be used on the project site and will result in exhaust emissions consisting of CO, NO_X, VOC, PM_{10}, and $PM_{2.5}$. During the finishing phase, paving operations will release VOC emissions and paving equipment will result in exhaust emissions consisting of CO, NO_X, VOC, PM_{10}, and $PM_{2.5}$. Construction emission can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Equipment usage was generated by the Sacramento Metropolitan Air Quality Management District' (SMAQMD) Road Construction Emissions Model (SMAQMD 2009). It was assumed that construction equipment activities would be confined to 7:00 a.m. to 4:00 p.m., Monday through Friday and the entire construction period would last for approximately 18 months.

4.2.1. No Build Alternative – Construction Emissions

If the Proposed Project were not built, there would be no alterations to the existing bridge and interchange. There would be no changes to the physical environment. Thus, no construction impacts would occur.

4.2.2. Build Alternative – Construction Emissions

Methodology

The construction emission estimates for the expanded interchange and replacement bridge overcrossing were estimated using the SMAQMD's Road Construction Model

(SMAQMD 2009). While the model was developed for Sacramento conditions in terms of fleet emission factors, silt loading, and other modeling assumptions it is considered adequate for estimating road construction emissions by the San Joaquin Valley Air Pollution Control District under its Indirect Source regulations and the South Coast Air Quality Management District in its CEQA guidance, and is used for that purpose in this project analysis. (See Appendix A for construction emission calculations).

It was assumed that approximately 33 acres of land would be disturbed modifying the interchange and 0.43 acres would be disturbed replacing the bridge overcrossing, with no more than 7 acres disturbed per any one day. Also assumed was an estimated export of 200 yd^3 of dirt per day. It is estimated that the Build Alternative would take 18 months to complete.

Impacts

The emissions estimated using the Roadway Model incorporates four phases; grubbing and land clearing; grading and excavation; drainage, utilities, and sub-grade; and paving. The Roadway Model outputs assume a 50 percent control of fugitive dust from watering and associated dust control measures. Table 4 shows the construction emissions associated with the Build Alternative. The Model printouts and summary are provided in Appendix A.

Table 4 – Build Alternative Construction Emissions

Pollutant	Emissions *(pounds per day)*
Reactive Organic Gases (ROG)	13.6
Nitrogen Oxides (NO_X)	105.7
Carbon Monoxide (CO	74.6
Inhalable Particulate Matter (PM_{10})	73.3
Fine Particulate Matter ($PM_{2.5}$)	18.9
Source: CGI 2011	

4.2.3. Avoidance and Minimization

Caltrans policy to reduce construction-period emissions by the greatest extent feasible requires implementation of effective and comprehensive avoidance and minimization measures, as identified below. Construction emission estimates were estimated using the SMAQMD's Road Construction Model (SMAQMD 2009). While the model was developed for Sacramento conditions in terms of fleet emission factors, silt loading, and other modeling assumptions it is considered adequate for estimating road construction

emissions by the San Joaquin Valley Air Pollution Control District under its Indirect Source regulations and the South Coast Air Quality Management District in its CEQA guidance, and is used for that purpose in this project analysis. (See Appendix A for construction emission calculations).

Exhaust Emissions

All project work would conform to Caltrans construction requirements, as specified in the Caltrans's document *Standard Specifications*.(Caltrans 2006) Section 7-101F, Air Pollution Control, stipulates that construction activities must comply with all rules, regulations, ordinances, and statutes of the local air pollution control district, and Standard Section 10 addresses dust control requirements.

Particulate Emissions

SCAQMD Rule 403 (Fugitive Dust) requires that fugitive dust control measures be applied to all construction projects in the SCAB, unless said project is specifically exempted by the rule. Construction projects that are classified as "large operations" (i.e., 20 hectares [50 acres] or larger) are required to submit a fully executed Large Operation Notification Form (Form 403 N) to the Executive Office of the SCAQMD within 7 days of qualifying as a large operation and to maintain daily records to document the specific control actions taken. In addition, large operations would be required to include applicable Rule 403 control measures presented in the Rule's Table 2 and Table 3, when the applicable performance standards cannot be met through use of the Rule's Table 2 actions. The proposed project, although not a large operation under the Rule's definition, would be required to implement control measures from the Rule's Table 1 for each source of PM_{10} emissions, as specified in the Rule.

4.3. Long-Term Operational Impacts

Typically the bridge and interchange replacement project are not assumed to have a detrimental long-term operational effect. Unlike a developmental project, a bridge and interchange replacement project is not considered an indirect source. In fact, the project's purpose is to enhance traffic operation at the Lost Hills Road Interchange, which would improve circulation and reduce potential queuing. In addition, the Proposed Project will provide a better environment for bicycling and pedestrian activity. The following analyses were performed:

- CO hot-spot analysis
- PM_{10} and $PM_{2.5}$ hot-spot analysis
- MSAT emissions analysis

4.3.1. Localized CO Hot-Spot Evaluation

A primary localized pollutant of concern regarding project operations is CO from motor vehicles. Therefore, an analysis of roadway CO concentrations is recommended by Caltrans in the published document titled *Transportation Project-Level Carbon Monoxide Protocol (Protocol)* (Garza et al 1997). The protocol provides guidance on whether projects would require regional CEQA analysis, conformity determination, and a localized CO analysis. The scope required for CO local analysis is summarized in the Protocol, Section 3 (Determination of Project Requirements), and Section 4 (Local Analysis); refer to Appendix B (CO Screening).

In Section 3, the Protocol provides two conformity requirement decision flowcharts that are designed to assist the project sponsor(s) in evaluating the requirements that apply to specific projects. As stated in the Protocol, the determination of project requirements should be carried out according to Section 3 of the Protocol and as delineated in the Requirements of New Projects flowchart shown in Figure 1 of the Protocol.

The flowchart in Figure 3 (Appendix B) of the Protocol was used in this analysis to assist focus of concerns for any future project-level analysis that may be required when a preferred alternative is selected. Below is a step-by-step explanation of the flow chart. Each level cited is followed by a response, which would determine the next applicable level of the flowchart for the Project. The flowchart begins with Section 3.1.1 of the Protocol:

3.1.1: Is the project exempt from all emissions analyses?

Response: The project does not qualify for an exemption. The project is a bridge replacement and interchange reconfiguration project. As shown in Table 1 of the Protocol (provided in Appendix B), the proposed project does not fall into a project category that is exempt from all emissions analysis *(proceed to 3.1.2)*.

3.1.2: Is the project exempt from regional emissions analyses?

Response: The project is not exempt from a regional emissions analysis. As shown in Table 2 of the Protocol (provided in Appendix B), the proposed project does not meet the criteria of a project category identified as exempt from regional emissions analysis *(proceed to 3.1.3)*.

3.1.3: Is the project locally defined as regionally significant?

Response: The Regional Transportation Improvement Program (RTIP) defines the project as regionally significant *(proceed to 3.1.4)*.

3.1.4: Is the project in a federal attainment area?

Response: The project is located in an area designated as a federal nonattainment for ozone, particulate matter (PM_{10} and $PM_{2.5}$), and lead *(proceed to 3.1.5)*.

3.1.5: Is there a currently conforming RTP and RTIP?

Response: The SCAG 2008 RTP and 2008 RTIP were both found to be conforming by FHWA on January 14, 2009 *(proceed to 3.1.6)*.

3.1.6: Is the project included in the regional emissions analysis supporting the currently conforming RTP and TIP?

Response: Even though the project is listed in the Final 2011 Federal Transportation Improvement Program (FTIP) as Project ID LAOG208 (RTP ID 1OM0702), the project is only listed as a study. Based on a conversation with Ryan Kuo (SCAG 2011), the project has not been included in any of the four amendments — Amendment #4 was adopted November 4, 2010 — and is therefore still listed as a study and since any project with increased lanes and/or ramp changes would have to be re-modeled, an amendment would be necessary. Mr. Kuo also informed me that since work has begun on the 2012 RTP, no future amendments will be submitted for the 2008 RTP. Since the Design Concept and Scope of the project does not match the Design Concept and Scope used in the RTP and FTIP project listing, it is determined not to be included in the regional emissions analysis supporting the currently conforming RTP and TIP, *(proceed to 3.1.11)*.

3.1.11: Project requires a project specific regional conformity determination?

Response: A project-level conformity analysis must be performed. Even though Caltrans assumed some of FHWA's NEPA responsibilities on California's State Highway System and for federal-aid local streets and roads projects under FHWA's Surface Transportation Project Delivery Pilot Program (Pilot Program), air quality conformity determinations are excluded from the Pilot Program by statute [23 USC 327(a)(2)(b)]. Conformity determinations, both regional conformity and project-level conformity, will remain the responsibility of FHWA California Division for all projects assumed under the Pilot Program. For EAs and EISs under the Pilot Program, FHWA will make the conformity determinations after the preferred alternative is identified and prior to completion of the final environmental document. A copy of the FHWA conformity determination letter must also be included in the final EA or EIS. The Department may not issue a Finding of No

Significant Impact (FONSI) or Record of Decision (ROD) without the conformity determination(s) from FHWA.

A mandatory Local Analysis level (Section 4) is provided. The questions applicable to the project in the Local Analysis level (also provided in Appendix B) and the answers to those questions are as follows.

4.1 - Designation of Project Area

4.1.1: Is the project in a CO nonattainment area?

Response: As shown previously in Table 3, the Los Angeles County portion of the Basin is classified as an attainment/maintenance area for the federal CO standards. A summary of the most recent 3 years of monitored CO data was presented earlier in Table 3. The table provides CO monitoring data collected at the Reseda monitoring station.

4.1.2: Was the area redesignated as "attainment" after the 1990 Clean Air Act?

Response: The Basin was reclassified to attainment/maintenance from serious nonattainment, effective June 11, 2007.

4.1.3: Has "continued attainment" been verified with the local Air District, if appropriate?

Response: Based on ambient air monitoring data collected by the SCAQMD, the Basin has continually met the NAAQS for CO since 2002 *(Proceed to Level 7).*

4.7 - Screening Projects in Attainment or Unclassified Areas

4.7.1: Does project worsen air quality?

Response: According to Section 4.7.1 of the Protocol, three criteria provide a basis for determining if a project has potential to worsen localized air quality. However, the CO Protocol notes that it may be easier to "screen out" a project by proceeding directly to Section 4.7.2. This analysis proceeds to that option.

4.7.2: Any projects suspected of resulting in higher CO concentrations than those existing within the region at the time of attainment demonstration?

The CO Protocol allows project sponsors to use the following criteria to determine the potential existence of higher CO concentrations in the region. The Protocol

suggests selecting one of the worst locations in the region having a similar configuration and comparing it to the "build" scenario of the location under study.

In their *Carbon Monoxide Redesignation Request and Maintenance Plan* (SCAQMD 2005), the SCAQMD extracted the CO modeling data from the 2003 Air Quality Attainment Plan. In their request for a revision to the Federal Carbon Monoxide Attainment Demonstration Plan, they conducted hot-spot analyses on four intersections to estimate the CO impacts from motor vehicles traveling at roadway intersections. One of the modeled intersections, Wilshire Boulevard and Veteran Avenue, is considered the most congested intersection in Los Angeles County, with an average daily traffic volume of about 100,000 vehicles per day. The model showed the CO concentrations for this intersection to be only 4.6 ppm in the AM peak hour and 3.5 ppm in the PM peak hour in 2002. In addition, SCAQMD used the CAMx regional simulation model to predict future CO concentrations using a linear rollback methodology and the predicted maximum areawide and "hot-spot" CO concentration related to this intersection would only be 3.7 ppm in 2005. This is primarily due to the "cleaning" of the overall vehicle fleet due to natural attrition. If the Proposed Project's intersections compare favorably to this intersection using the following conditions, the CO Protocol establishes that there is no reason to expect higher concentrations at the location under the study.

a) The receptors at the location under study are at the same distance or farther from the traveled roadway than the receptors at the location where attainment has been demonstrated.

   The modeled intersection has receptors within 3 meters and the Project intersection with the nearest receptors would be the Lost Hills Road/Agoura Road would be no closer than 3 meters for No Build or Build scenarios.

b) The roadway geometry of the two locations is not significantly different. An example of a significant difference would be a larger number of lanes at the location under study compared to the location where attainment has been demonstrated.

   The modeled intersection is a 10-lane facility (4 through-lanes in each direction and 2 left-turn lanes) in the east and west directions and a 6-lane facility (2 through-lanes in each direction, 1 left-turn lane, and 1 right-turn lane) in the north and south directions. For both No Build and

Build conditions, the most lanes of travel in all directions would be a 4-lane facility (2 through-lanes in each direction).

c) Expected worst-case meteorology at the location under study is the same or better than the worst-case meteorology at the location where attainment has been demonstrated. Relevant meteorological variables include: wind speed, wind direction, temperature, and stability class.

Expected worst case meteorology at the project location is expected to be the same or better than conditions at the modeled intersection.

d) Traffic lane volumes at the location under study are the same or lower than those at the location where attainment has been demonstrated.

The Wilshire/Veteran intersection documented a worst-case 1,238 vehicles per lane per hour (v/l/h) from the east in the AM peak hour in 2000. As a comparison, the worst-case projected traffic count for the Project's intersections was only 886 v/l/h in the existing conditions; 956 v/l/h in the opening conditions; and 1,198 v/l/h in the future year conditions.

e) Percentages of vehicles operating in cold start mode at the location under study are the same or lower than those at the location where attainment has been demonstrated.

Percentages of cold-start vehicles would be projected to be less at the Project location since the modeled intersection is strictly urban and two of the intersections analyzed for the Project are ramps to US-101. Highway vehicle population would have a significantly reduced percentage of cold-start vehicles.

f) Percentage of Heavy Duty Gas Trucks at the location under study is the same or lower than the percentage at the location where attainment has been demonstrated.

The percentage of Heavy Duty Gas Trucks at the Project location is expected to be the same or lower than the modeled intersection.

g) For projects involving intersections, average delay and queue length for each approach is the same or smaller for the intersection under study

compared to those found in the intersection where attainment has been demonstrated.

With the extreme traffic volumes and congestions reported at the Wilshire/Veteran intersection, evidence supports that average delay and queue lengths would be expected to be significantly less for both No Build and Build conditions.

h) Background concentrations at the location under study are the same or lower than the background concentration at the location where attainment has been demonstrated.

Background concentrations of CO at the location under study would be estimated to be lower than background concentrations at the Wilshire/Veteran intersection due to the urban nature of the environment surrounding the modeled intersection. The CAMx projected area-wide maximum concentrations of CO at the modeled intersection (West Los Angeles-VA Hospital) was 4.6 ppm (AM) and 3.5 ppm (PM). The three-year average for the nearest monitoring station to the Project (Reseda) is 2.83 ppm. It is important to note that the even though the Reseda Station is the nearest to the Project, it is not considered representative. The Reseda Station exists in a heavy urban area and the Project site has much less urban buildup; therefore, vehicular activity in the overall area surrounding the project site would be considerably less and, since vehicular activity is the primary source of CO, the CO concentrations would be expected to be less, were there a monitor nearer.

Since the analysis shows that the Project area intersections do not have any configurations that would create the potential for more congested activity than the modeled intersection and the modeled intersection demonstrated CO concentrations significantly under the CO standards when added to the background, there is no reason to expect higher concentrations and no further analysis necessary.

4.3.2. Localized $PM_{2.5}$ and PM_{10} Hot-Spot Evaluation

While most projects create particulate emissions during construction, construction activities lasting 5 years or less are considered temporary impacts under the EPA transportation conformity rule and are exempt. It is expected that the construction duration for this project would be less than five years. As such, hot-spot review is therefore limited to operational impacts.

A PM Conformity Hot Spot Analysis Project Summary Form for Interagency Analysis was sent to the Transportation Conformity Working Group (TCWG) for review. As shown in a copy of the Meeting Notes for the August 23, 3011 TCWG meeting (Appendix C), the TCWG determined that the project is not be a Project of Air Quality Concern (POAQC); therefore no further $PM_{2.5}/PM_{10}$ hot-spot evaluation is necessary.

4.4. Naturally Occurring Asbestos/Structural Asbestos

Chrysotile and amphibole asbestos (such as tremolite) occur naturally in certain geologic settings in California, most commonly in association with ultramafic rocks and along associated faults. Asbestos is a known carcinogen, and inhalation of asbestos may result in the development of lung cancer or mesothelioma. The asbestos contents of many manufactured products have been regulated in the United States for a number of years.

For example, CARB has regulated the amount of asbestos in crushed serpentinite used in surfacing applications, such as for gravel on unpaved roads, since 1990. In 1998, new concerns were raised about possible health hazards from activities that disturb rocks and soil containing asbestos and may result in the generation of asbestos-laden dust. These concerns recently led to CARB revising its asbestos limit for crushed serpentinite and ultramafic rock in surfacing applications from 5 percent to less than 0.25 percent, and adopting a new rule requiring best practices dust control measures for activities that disturb rock and soil containing NOA.

The California Department of Conservation, Division of Mines and Geology's General Location Guide (CDMG 2000) was reviewed and there were no areas likely to contain NOA in Los Angeles County. Additionally, during demolition activities, the likelihood of encountering structural asbestos is low due to the nature of the demolished materials. The material would consist of concrete and metal piping. Therefore, the potential for NOA to be present within the Project limits and the potential for structural asbestos to be encountered during demolition are considered to be low. Furthermore, prior to the commencement of construction, qualified geologists would further examine the soils and makeup of the existing structure. Should the Project geologist encounter asbestos during the analysis, proper steps shall be executed to handle the materials.

4.5. Evaluation of Health Effects Related to Mobile Source Air Toxics (MSAT)

In addition to the criteria air pollutants for which there are NAAQS, the EPA also regulates air toxics. Most air toxics originate from human-made sources, including

on road mobile sources, nonroad mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

MSATs are a subset of the 188 air toxics defined by the FCAA. MSATs are compounds emitted from highway vehicles and nonroad equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through an engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The EPA is the lead federal agency for administering the FCAA and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources (66 Federal Register 17229 [March 29, 2001]). This Rule was issued under the authority in Section 202 of the FCAA. In its rule, the EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline program, its national low-emission vehicle standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy-duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements.

Background on MSATs

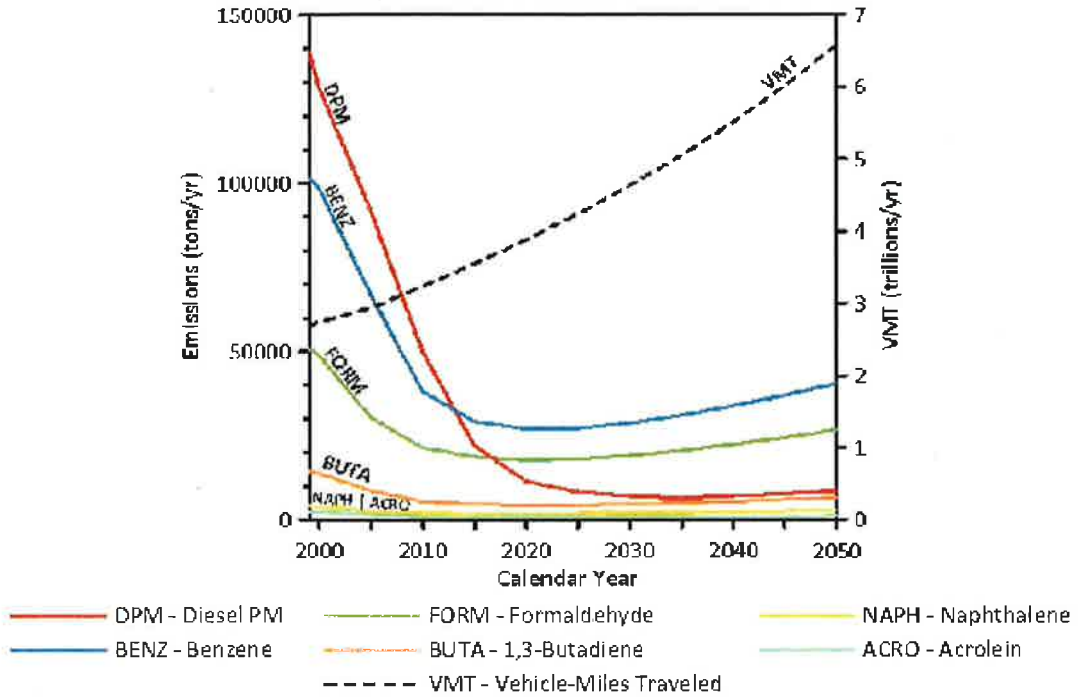
Controlling air toxic emissions became a national priority with the passage of the FCAA Amendments of 1990, whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (i.e. DPM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles travelled or VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the

total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in Figure 8.

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision-making within the context of the NEPA.

Figure 5 – National MSAT Emission Trends 1999-2050
for Vehicles Operating on Roadways Using EPA's MOBILE6.2 Model



Notes:
(1) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.
(2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors

Source: U.S. Environmental Protection Agency. MOBILE6.2 Model run 20 August 2009.

Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, agencies are duly expected by the public and other agencies to address MSAT impacts in our environmental documents.

The FHWA developed a tiered approach for analyzing MSAT in NEPA documents, depending on specific project circumstances. The FHWA has identified three levels of analysis:

1. No analysis for projects with no potential for meaningful MSAT effects;
2. Qualitative analysis for projects with low potential MSAT effects; or
3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

Project with Low Potential MSAT Effects

The types of projects included in this category are those that serve to improve operations of highway, transit, or freight without adding substantial new capacity or without creating a facility that is likely to increase MSAT emissions meaningfully. This category covers a broad range of projects.

Because the project will improve an interchange and replace a bridge and is designed to relieve congestion and improve the operational efficiency of US Highway 101, it is assumed that the project will qualify as a project with low potential MSAT effects, which only requires conducting a qualitative assessment of emissions projections. A qualitative analysis provides a basis for identifying and comparing the potential differences between MSAT emissions, if any, the Project and No Action.

The amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The proposed project would modify an existing interchange and would neither increase traffic volumes nor modify the vehicle mix; therefore, no higher MSATs would be expected for this reason. However, there is a re-routing of traffic that may have a potential effect on MSAT concentrations to nearby sensitive receptors.

The travel lanes contemplated as part of the project will have the effect of moving some traffic closer to nearby homes; therefore, there may be localized areas where ambient concentrations of MSAT would be higher. The localized differences in MSAT concentrations would likely be most pronounced near the new US-101 Northbound on- and off-ramps that would be built approximately 800 feet up Lost Hills Road. However, the magnitude and the duration of these potential increases cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. Further, overall future MSAT are expected to be substantially lower than today due to implementation of EPA's vehicle and fuel regulations.

In sum, in the design year it is expected there could be increases in MSAT levels in a few localized areas where vehicular activity comes closer to sensitive receptors. However, EPA's vehicle and fuel regulations will bring about significantly lower MSAT levels for the area in the future than today.

4.6. Conformance with Air Quality Management Plan

This assessment will use three criteria for determining project consistency with the current AQMP, as discussed below. The first and second criteria are from the SCAQMD. According to the SCAQMD, there are two key indicators of AQMP consistency: 1) whether the project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP; and 2) whether the project will exceed the assumptions in the AQMP based on the year of project build out and phase. The third criterion is compliance with the control measures in the AQMP.

4.6.1. Project's Contribution to Air Quality Violations

As shown above in Short-Term Construction Impacts and Long-Term Operational Impacts, none of the project's Build alternatives would violate any air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, the project meets the first indicator.

4.6.2. AQMP Assumptions

The Project is designed to bring this segment of Lost Hills Interchange into compliance with the City of Calabasas and Caltrans plans for the local arterials and highways. A PSR was completed in 2007 for the Proposed Project (Caltrans 2007). The proposed project is included in both the SCAG 2008 RTP under project ID number 1OM0702 and 2008 RTIP under project ID number LA0G208. SCAG developed the 2007 Final AQMP Transportation Conformity Budgets that the SCAQMD Board adopted as part of their AQMP; this Project is consistent with AQMP assumptions. Therefore, the project meets the second indicator.

4.6.3. Control Measures

The third criterion is compliance with the control measures in the AQMP. The AQMP contains a number of land use and transportation control measures including the following Transportation Control Measures provided by SCAG. Transportation control measures provided by SCAG include those contained in the RTP, the most current version being the 2008 RTP (SCAG 2008). The RTP includes a set of Travel Demand

Management strategies that that encourage the use of alternatives modes of transportation to the single-occupant vehicle include rideshare (carpools and vanpools), transit (bus and rail), and non-motorized modes (bicycling and walking). All the project's Build alternatives improve non-motorized and transit in the area, therefore will comply with the control measures set by SCAG. In addition, the project's Build alternatives would comply with all of the SCAQMD's applicable rules and regulations. Therefore, the project complies with this criterion.

4.7. Potential Cumulative Impacts

The potential for cumulative impacts can be assessed by reviewing a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document, which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to potential cumulative impacts.

The following two-tiered approach is used to assess potential cumulative air quality impacts.

- Project consistency with existing air quality plans;
- Assessment of the cumulative health effects of the pollutants; and

4.7.1. Air Quality Plans

The Basin, in which the project is located, is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$. As such, the SCAQMD is required to prepare and maintain an AQMP and a SIP to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SCAQMD does not have direct authority over land use decisions, it was recognized that changes in land use and circulation planning were necessary to maintain clean air. As discussed above in the Section on Conformance with Air Quality Management Plan, the project is compliant with the AQMP.

4.7.2. Cumulative Health Impacts

The Basin is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect the health of sensitive individuals (i.e., elderly, children, and the sick). Therefore, when the concentration of those pollutants exceed the standard, it is likely that some of the sensitive individuals of the population experience adverse health effects as described above in the Section on Pollutants.

The localized concentration analysis in Short-Term Construction Impacts Section demonstrated that during construction activities, localized pollutant concentrations from fugitive dust were minimal. In addition, project emissions of VOC and NO_X may contribute to the background concentrations of ozone and since the combination of ozone and PM_{10} can aggravate health effects, project emissions may contribute to the background of those pollutants.

4.8. Greenhouse Gases

Neither EPA nor FHWA has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on FHWA's climate change website, climate change considerations should be integrated throughout the transportation decision-making process–from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders regarding climate change, the issue is addressed in the CEQA chapter of this environmental document and may be used to inform the NEPA decision. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

4.8.1. Project Analysis

One of the main strategies in the Department's Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 mph; the most severe emissions occur from 0-25 miles per hour (see Figure below). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors, GHG emissions, particularly CO_2, may be reduced.

The PSR (Caltrans 2007) states that the proposed project will substantially enhance the traffic operation at this interchange. The ramp intersections are currently operating at a level of service (LOS) C for the AM peak hour and LOS D for the PM peak hour. It should be noted that the actual operating conditions tend to be worse than indicated by theoretical level of service calculation due to lane merging on the bridge and the queue backup between intersections. Based on the traffic forecasts for 2025, LOS F will occur for the PM peak hour.

In addition to the limited traffic mobility, the existing overcrossing is too narrow for amount of traffic. The Lost Hills overcrossing provides the only emergency access to the resident community to the north and improving the operating conditions at the interchange will result in an overall operational improvement. A secondary concern is that the structure has non-standard shoulders and deficient minimum vertical clearance. To mitigate the non-standard minimum vertical clearance, the bridge underwent girder replacement to improve the vertical clearance to a more acceptable yet efficient value of 4.70 m. the current overcrossing has a four span configuration with the column bents located within the median and along the outside shoulders of the US-101 Freeway. This configuration cannot accommodate any additional future lands on the US-101 Freeway.

The interchange improvement need is evident, based on both the existing and future traffic operations, and the other noted limitations of the existing interchange. The resulting improvement will reduce delays, improve safety, and benefit the local residents of the City of Calabasas and regional commuters by accommodating the future traffic demands at this interchange.

The Program Environmental Impact Report (PEIR) for the 2008 RTP (SCAG 2008b) concludes that 2008 RTP would result in increased trips and VMT as well as increased growth in the region compared to today, resulting in increases in GHG emissions. Since the purpose of AB 32 is to reduce statewide GHG emissions to 1990 levels by 2020 and the SCAG region contributes at least 39 percent of existing GHG emissions in the State, the PEIR concludes it is vital that SCAG regional GHG emissions be reduced in order for the State to meet this goal and established that any increase in GHG emissions from existing conditions to RTP conditions would result in a significant impact. The PEIR shows that GHG emissions in 2020 and 2035 would be substantially greater than baseline GHG emissions for the SCAG region. Therefore, it was determined that the RTP could result in a significant global warming impact without incorporation of mitigation measures.

Even with the inclusion of mitigation measures listed, the PEIR concludes that it is unlikely that mitigation measures would reduce GHG emissions below existing (let alone to 1990 levels as required by AB 32) due to anticipated population growth. As such, the PEIR concluded that the 2008 RTP would result in a significant and unavoidable global warming impact.

The PSR (Caltrans 2007) evaluated a Transportation System Management Alternative which would address potential improvements in traffic signal coordination and timing. It determined that even though this alternative may help increase the efficiency of traffic flow, the Alternative would not be adequate to handle projected increase in vehicular volume and demand and would not serve future traffic needs.

Construction Emissions

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

GHG emissions associated with Proposed Project construction were estimated using the SMAQMD's Roadway Model (SMAQMD 2009), which estimates emissions of CO_2. While the Roadway Model does not provides estimates of N_2O or CH_4, emissions of these gases would be much lower than emissions of CO_2 and would not be anticipated to contribute substantially to emissions overall. Based on emission factors from the Roadway Model, total greenhouse gases associated with construction of the Build Alternative would be approximately 1,723 tCO_2e.

The State of California was estimated to have emitted 492 $MtCO_2e$ in 2004 and the PEIR for the 2008 RTP (SCAG 2008b) shows that in 2008 mobile sources in Los Angeles County were estimated to be 42.28 $MtCO_2e$. Additionally, the majority of the GHG emissions from construction activity are temporary in nature.

A Traffic Management Plan will be developed for this project. The plan will include elements from such categories as Public Information, Motorist Information Strategies, and Incident Management. Under the Public Information category, the plan will include: Press Release, Public Information Center/Kiosk, and Telephone Hotline. Under the Motorist Information Strategies category, the plan will include: Changeable Message Sign (portable) and Ground Mounted Signs. Under the Incident Management category, the plan will include: Construction Zone Enhanced Enforcement Program (COZEEP) and Freeway Service Patrol. The final plan will depend upon the construction staging activities required by the project and will be determined in the final design phase of the project.

Any asphalt concrete that is removed will be reused or stockpiled off-site for future use by other projects. Suitable hardware items such as guardrail, light standards, and signs, will also be reused or stockpiled for future use.

Project Effect on Long Term GHG

Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing a Climate Action Program (Caltrans 2006b). One of the main strategies in the Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of CO_2 from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) 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. This project's purpose is to improve mobility and safety by reducing existing and forecasted traffic congestion on Lost Hills Road and the US-101 freeway ramps within the proposed project limits; reduce congestion due to lane merging on the bridge and queue backup between intersections; boost traffic operations by improving vehicle flow at the interchange; and enhance safety with better traffic movement. Successful construction of the proposed project will result in a reduction of GHG emissions.

AB 32 Compliance

Caltrans continues to be actively involved on the Governor's CAT as CARB works to implement the Governor's Executive Orders and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Governor Arnold Schwarzenegger's Strategic Growth Plan calls for a $222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and

waterways, including $100.7 billion in transportation funding during the next decade. As shown on the figure below, the Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together yield the promised reduction in congestion. The Strategic Growth Plan (see Figure 9) relies on a complete systems approach of a variety of strategies: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements.

As part of the Climate Action Program at Caltrans (December 2006), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by EPA and CARB. Lastly, the use of alternative fuels is also being considered; the Department is participating in funding for alternative fuel research at the UC Davis.

Table 5 summarizes the Department and statewide efforts that Caltrans is implementing in order to reduce GHG emissions. For more detailed information about each strategy, please see Climate Action Program at Caltrans (December 2006); it is available at http://www.dot.ca.gov/docs/ClimateReport.pdf.

To the extent that it is applicable or feasible for the project and through coordination with the project development team, the following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

- The project would incorporate the use of photovoltaic energy systems in coordination with current agency policy. Photovoltaic lighting on the freeway ramps will follow Caltrans policy. Lighting on City or County streets will follow the policy of the local jurisdictions.

- According to Caltrans Standard Specification Provisions, idling time for lane closure during construction is restricted to ten minutes in each direction; in addition, the contractor must comply with SCAQMD's rules, ordinances, and regulations in regards to air quality restrictions.
- Caltrans and the California Highway Patrol are working with regional agencies to implement intelligent transportation systems (ITS) to help manage the efficiency of the existing highway system. ITS is commonly referred to as electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.

Adaptation Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the State's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damaging roadbeds by longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

Climate change adaption must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On December 9, 2009, a consortium of State Agencies led by the California Natural Resources Agency, posted the 2009 California Climate Action Strategy (Strategy) (CNRA 2009) summarizing the best known science on climate change impacts in seven specific sectors and providing recommendations on how to manage against those threats. The Strategy is in direct response to Gov. Schwarzenegger's November 2008 Executive Order S-13-08 that specifically asked the Natural Resources Agency to identify how State agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events.

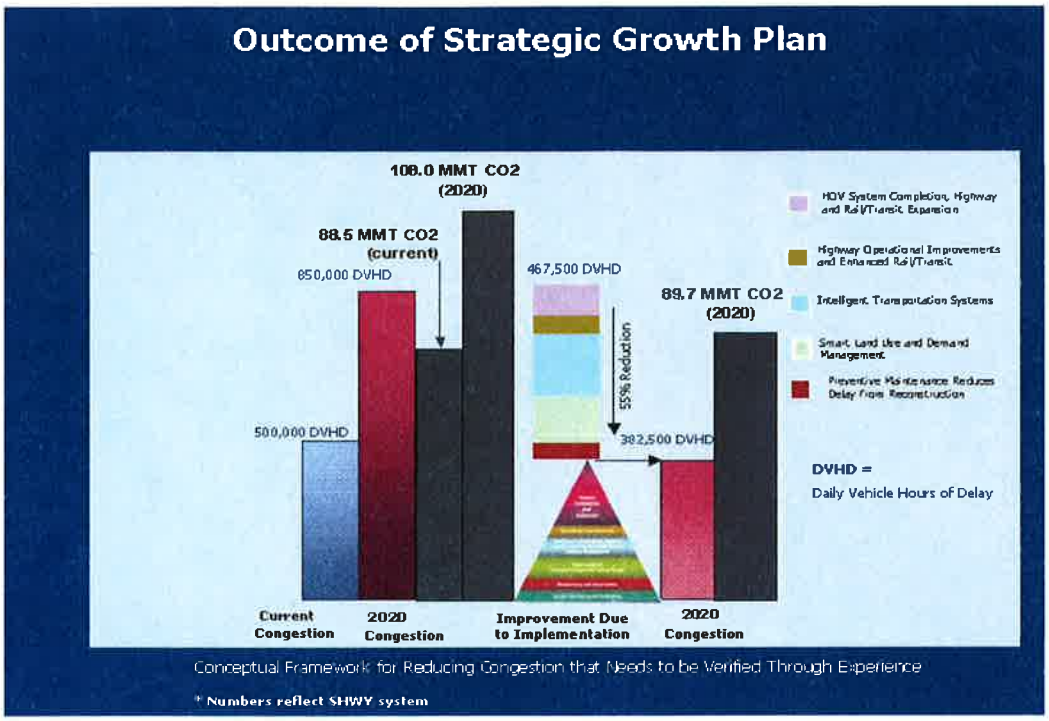


Figure 6 – Outcome of Strategic Growth Plan

The Strategy pursued the following specific objectives:

- Analyze climate change risks
- Identify sector-specific, and to the extent possible, cross-sectoral adaptation strategies that help reduce vulnerabilities and build5 climate resilience
- Explore cross-cutting supportive strategies
- Formalize criteria for prioritizing identified adaptation strategies
- Specify future direction
- Provide recommendations for immediate and near-term priorities for implementing identified adaptation strategies
- Inform and engage the California public about climate risks and adaptation strategies

Realizing that California's economy and population relies on one of the most extensive and costly infrastructure system in the world, which includes thousands of miles of roads, highways and railroads, the Strategy (CNRA 2009) concludes that impacts of climate change on infrastructure will vary at the local level, but it is certain they will be widespread and costly in human and economic terms, and will require significant changes

in the planning, design, construction, operation, and maintenance of California's infrastructure.

Adaptation plans include Caltrans assessing existing transportation design standards as to their adequacy to withstand climate forces from sea level rise and extreme weather events beyond those considered; developing guidelines to establish buffer areas and setbacks to avoid risks to structures within projected "high" future sea level rise or flooding inundation zones; and assessing how climate changes could alter size and design requirements for storm water quality BMP's. Caltrans will also assess the type of climate-induced impact information necessary to respond to district emergencies and identify how climate impact information can be integrated into existing Intelligent Transportation Systems and Transportation Management Center operations.

The Project is scheduled for completion in 2012 so it is programmed for construction funding within the 2008 through 2013 time period; therefore, no further analysis is mandated.

Table 5 – Caltrans Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO_2 Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local Governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Trans. System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.007	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, CARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.45 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 0.36	3.6
Goods Movement	Office of Goods Movement	Cal EPA, CARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.67

4.9. Expose Sensitive Receptors to Substantial Pollutant Concentrations

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. As adopted by the SCAQMD in their CEQA Air Quality Handbook (Chapter 4), a sensitive receptor is a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant. Hazards and hazardous materials regulators typically define sensitive receptors as schools (Preschool-12th Grade), hospitals, resident care facilities, residences or day-care centers, or other facilities that may house individuals with health conditions. Residential areas are considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered sensitive since children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution because exercise places a high demand on respiratory functions, which can be impaired by air pollution. Figure 2 shows the nearest sensitive receptors, single family residences, which are located approximately 80 feet northwest of the project site.

The Build Alternative will reduce delay times at intersections, thus reducing pollutant concentrations overall. In addition, the nearest sensitive receptors are in the Saratoga residential area to the northwest of the proposed project (see Figure 2) and the Build Alternative has the beneficial effect of moving the US-101 northbound on-/off-ramps further from the sensitive receptors.

Chapter 5. References

Caltrans. 2006. Standards Specifications. California Department of Transportation. May 2006.

———. 2006b. Climate Action Program at Caltrans. California Department of Transportation. December 2006.

———. 2007. Project Study Report – Project Development Support. California Department of Transportation. March 2007.

CARB. 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. California Air Resources Board. October 2000.

———. 2000b. Proposed Regulation for In-Use On-Road Diesel Vehicles, Staff Report: Initial Statement of Reasons for Proposed Rulemaking. California Air Resources Board. October 2000.

———. 2007. Regulation for In-Use Off-Road Diesel-Fueled Fleets. California Air Resources Board. December 8, 2007

———. 2007b. Regulation to Establish a Statewide Portable Equipment Registration Program, Final Regulation Order. California Air Resources Board. September 12, 2007.

———. 2007c. Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations, Final Regulation Order. California Air Resources Board. September 12, 2007.

———. 2009b. Almanac Emissions Projection Data (published in 2009). California Air Resources Board. http://www.arb.ca.gov/app/emsinv/. Accessed October 2009.

———. 2010. Area Designations and Maps – 2010. California Air Resources Board. September 2010.

———. 2010b. website: http://www.arb.ca.gov/adam/welcome.html, Air Quality Data Statistics, Toxics Summaries, December 2010.

———. 2011. Ambient Air Quality Standards. website: http://www.arb.ca.gov/aqs/aaqs2.pdf, May.

CCC. 2006. Our Changing Climate, Assessing the Risks to California: A Summary Report from the California Climate Change Center. California Climate Change Center. July 2006.

CDMG. 2000. A General Location Guide for Ultramafic Rocks in California - Areas More Likely To Contain Naturally Occurring Asbestos. California Department of Conservation, Division of Mines and Geology. August, 2000.

CEC. 2006. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. Staff Final Report. California Energy Commission. December 2006.

CNRA. 2009. 2009 California Climate Adaptation Strategy, A Report to the Governor of the State of California in Response to Executive Order S-13-2008. California Natural Resources Agency. December 2009.

DKS. 2011a. Lost Hills Road Interchange Traffic Analysis. City of Calabasas. DKS Associates. January 5, 2011.

———. 2011b. Memorandum: Lost Hills Road Interchange Project. DKS Associates. August 5, 2011.

Garza et al. 1997. Transportation Project-Level Carbon Monoxide Protocol (CO Protocol). Garza, V.J., Graney, P., Sperling, D. University of California Davis, Institute of Transportation Studies. 1997.

SCAQMD. 1993. CEQA Air Quality Handbook. South Coast Air Quality Management District. April 1993.

———. 2005. Carbon Monoxide Redesignation Request and Maintenance Plan. Southern California Association of Governments. February 2005.

SCAG. 2008. Final 2008 Regional Transportation Plan: Making the Connections. Southern California Association of Governments. Adopted May 2008.

———. 2008b. 2008 Regional Transportation Plan (RTP) Update Program Environmental Impact Report (PEIR). Southern California Association of Governments. Adopted May 2008.

———. 2011. Personal conversation with Ryan Kuo, Planning & Programs - Transportation Planning. Southern California Association of Governments. April 2011.

SMAQMD. 2009. Road Construction Emissions Model Version 6.3.2. Sacramento Metropolitan Air Quality Management District. (www.airquality.org/ceqa/RoadConstructionModelVer6.3-2.xls). July 2009.

WRCC. 2009. Western U.S. Climate Historical Summaries. Western Regional Climate Center. http://www.wrcc.dri.edu/Climsum.html. Accessed October 2009.

Appendix A Road Construction Model Printout

Road Construction Emissions Model, Version 6.3.2

Emission Estimates for -> Lost Hills Road Interchange Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	6.6	28.7	53.5	47.3	2.3	45.0	11.5	2.1	9.4	5,130.7
Grading/Excavation	7.6	47.3	56.6	47.8	2.8	45.0	11.9	2.5	9.4	6,104.6
Drainage/Utilities/Sub-Grade	4.8	19.3	33.2	46.8	1.8	45.0	11.0	1.7	9.4	3,278.2
Paving	3.9	13.7	19.5	1.7	1.7	-	1.6	1.6	-	1,799.0
Maximum (pounds/day)	7.6	47.3	56.6	47.8	2.8	45.0	11.9	2.5	9.4	6,104.6
Total (tons/construction project)	1.2	6.4	8.7	8.0	0.5	7.6	2.0	0.4	1.6	905.0

Notes:
Project Start Year -> 2010
Project Length (months) -> 18
Total Project Area (acres) -> 21
Maximum Area Disturbed/Day (acres) -> 5
Total Soil Imported/Exported (yd ^{3}/day)-> 200

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Lost Hills Road Interchange Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	3.0	13.0	24.3	21.5	1.1	20.5	5.2	1.0	4.3	2,332.2
Grading/Excavation	3.5	21.5	25.7	21.7	1.3	20.5	5.4	1.1	4.3	2,774.8
Drainage/Utilities/Sub-Grade	2.2	8.8	15.1	21.3	0.8	20.5	5.0	0.8	4.3	1,490.1
Paving	1.8	6.2	8.9	0.8	0.8	-	0.7	0.7	-	817.7
Maximum (kilograms/day)	3.5	21.5	25.7	21.7	1.3	20.5	5.4	1.1	4.3	2,774.8
Total (megagrams/construction project)	1.1	5.8	7.9	7.3	0.4	6.9	1.8	0.4	1.4	820.9

Notes:
Project Start Year -> 2010
Project Length (months) -> 18
Total Project Area (hectares) -> 8
Maximum Area Disturbed/Day (hectares) -> 2
Total Soil Imported/Exported (meters ^{3}/day)-> 153

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Appendix B CO Protocol: Requirements of New Projects Flowchart

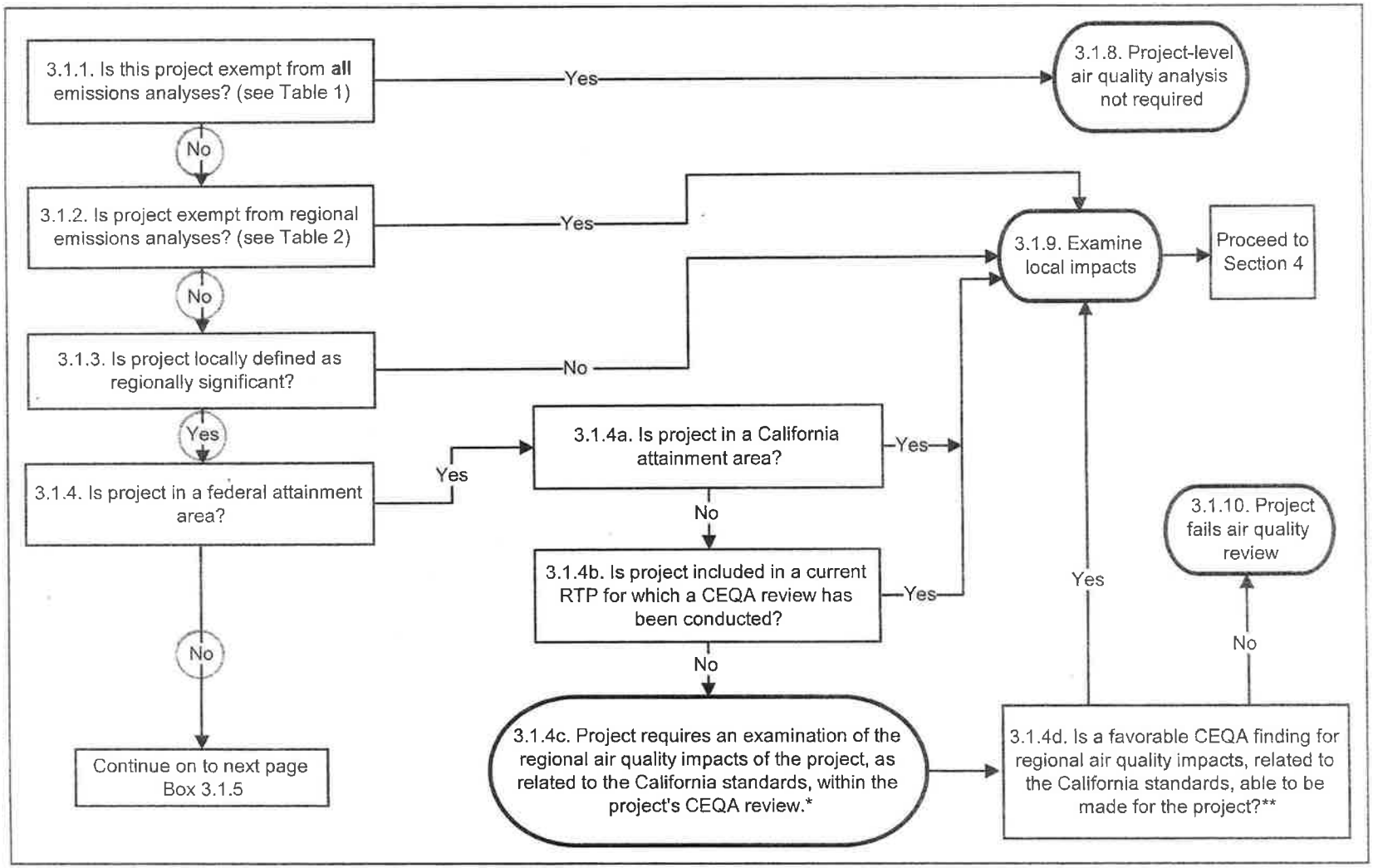


Figure 1. Requirements for New Projects

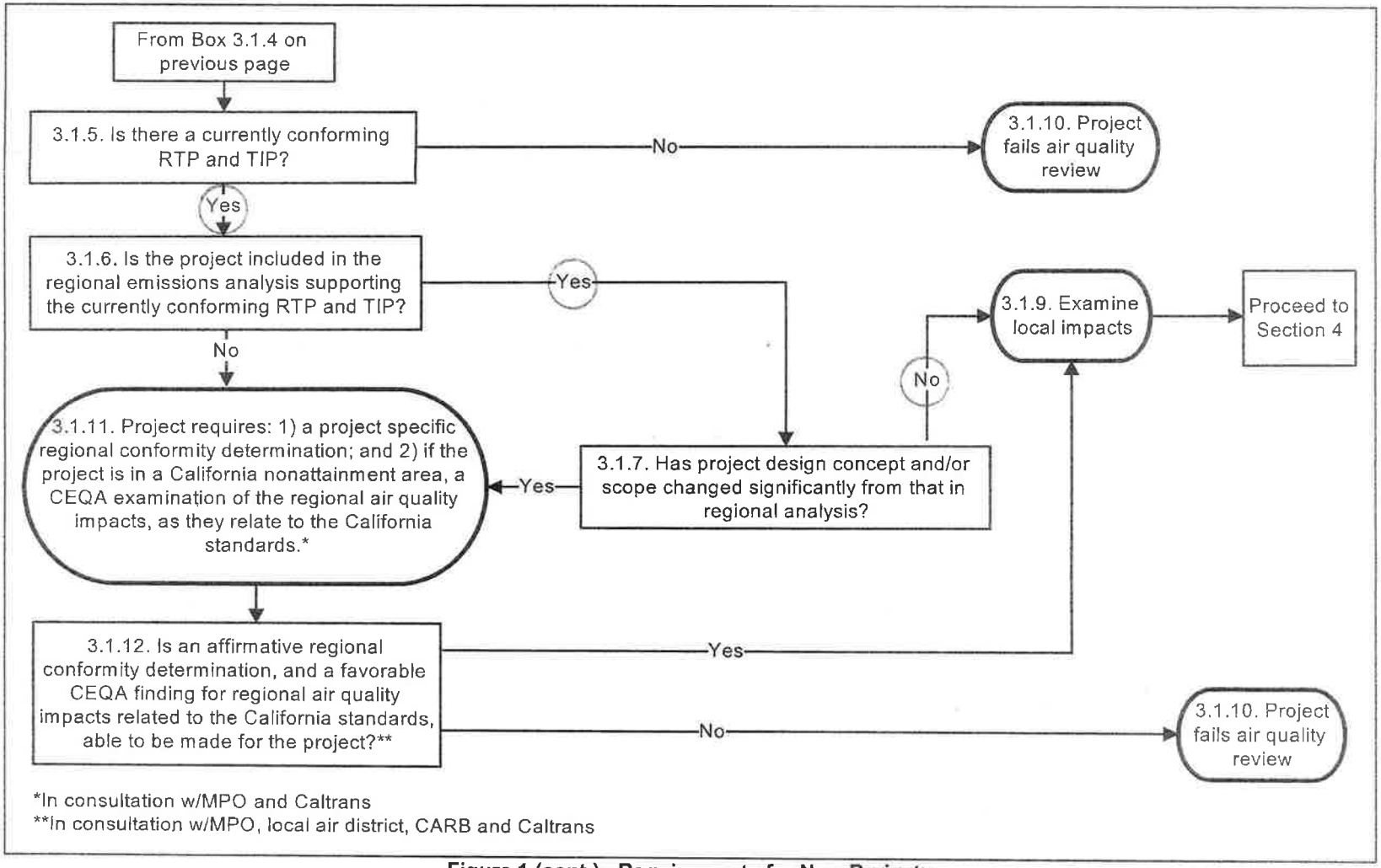


Figure 1 (cont.). Requirements for New Projects

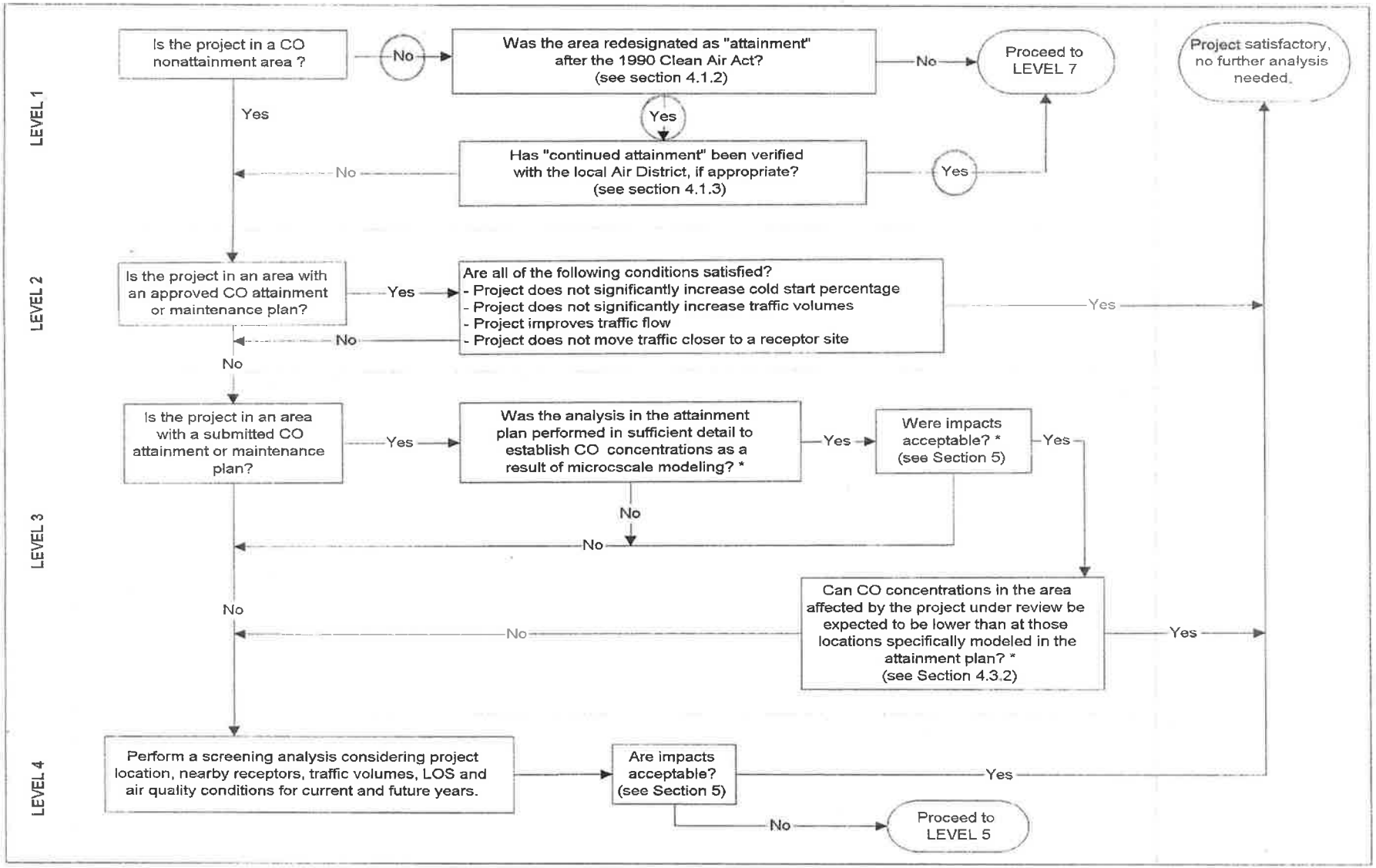


Figure 3. Local CO Analysis

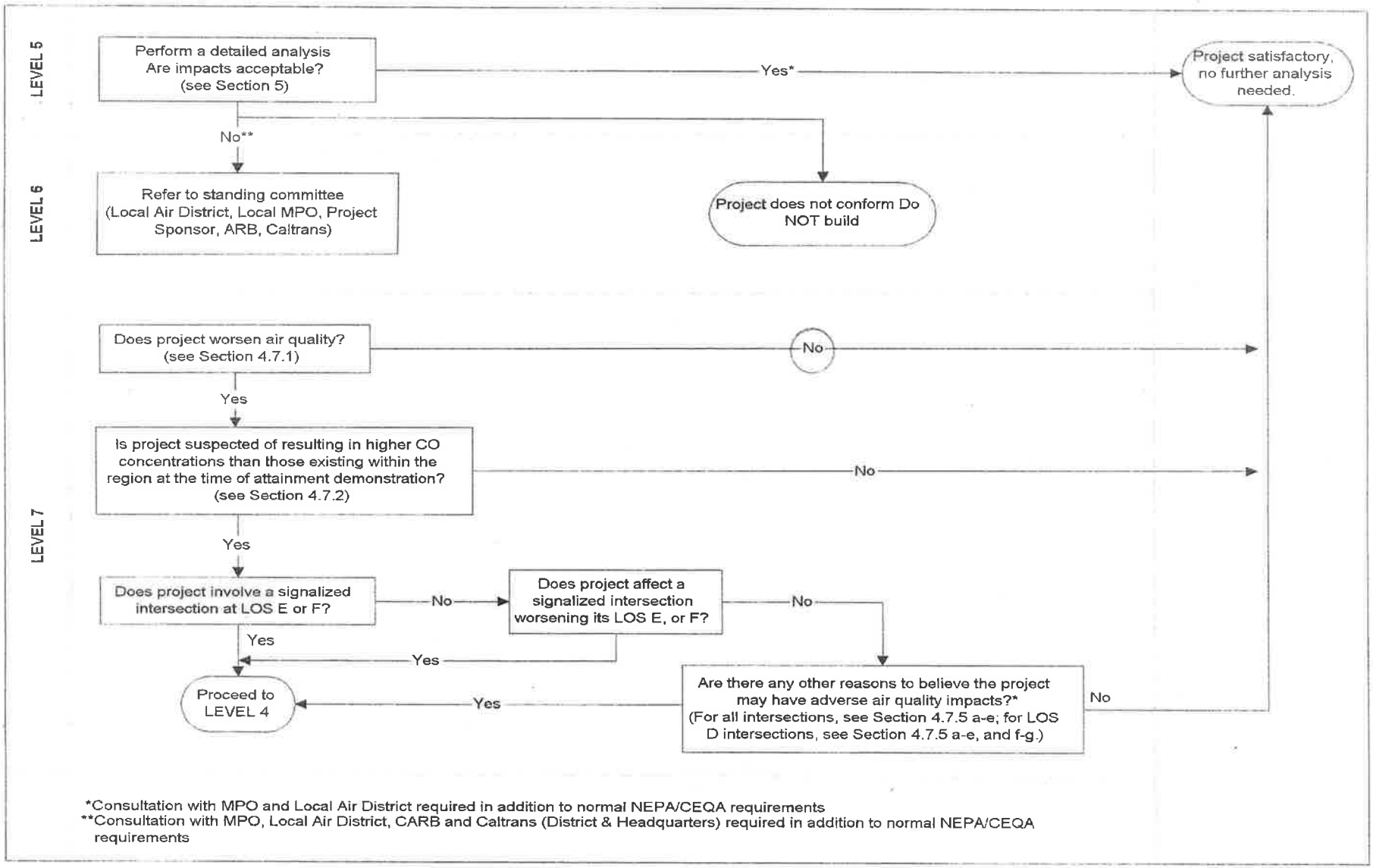


Figure 3 (cont.). Local CO Analysis

Appendix C Transportation Conformity Working Group Meeting Notes for August 23, 2011 Meeting

TRANSPORTATION CONFORMITY WORKING GROUP
of the
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

August 23, 2011
Minutes

THE FOLLOWING MINUTES ARE A SUMMARY OF THE MEETING OF THE TRANSPORTATION CONFORMITY WORKING GROUP. A DIGITAL RECORDING OF THE ACTUAL MEETING IS AVAILABLE FOR LISTENING IN SCAG'S OFFICE.

The Meeting of the Transportation Conformity Working Group was held at the SCAG office in Los Angeles.

In Attendance:

Abrishami, Lori	Metro
Sherwood, Arnie	System Metrics

SCAG

Asuncion, John
Kuo, Ryan
Luo, Rongsheng
Sangkapichai, Mana

Via Teleconference:

Behtash, Arman	Caltrans, District 12
Brady, Mike	Caltrans Headquarters
Diaz, Roderick	Metro
Cacatian, Ben	VCAPCD
Chiene, Kelly	RBF Consulting
Crow, Jason	ARB
Fagan, Paul	Caltrans, District 8
Foreman, Stan	LSA Associates
Gallo, Ilene	Caltrans, District 11
Jaffery, Edison	Caltrans, District 8
Krebs, Cindy	OCTA
Malisos, Achilles	RBF Consulting
Poe, Lisa	SANBAG
O'Connor, Karina	U.S. EPA, Region 9
Sonnenberg, Stew	FHWA
Tang, Paul	Caltrans, District 8
Tax, Wienke	U.S. EPA, Region 9
Walecka, Carla	TCA
Welting, Ken	City of Buena Park
Yoon, Andrew	Caltrans, District 7
Zamora, Cherry	Dokken Engineering

TRANSPORTATION CONFORMITY WORKING GROUP
of the
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

August 23, 2011
Minutes

1.0 CALL TO ORDER

Lori Abrishami, Metro, called the meeting to order at 10:05 a.m.

2.0 PUBLIC COMMENT PERIOD

There were no comments.

3.0 CONSENT CALENDAR

3.1 TCWG July 26, 2011 Meeting Minutes

The minutes were approved.

4.0 INFORMATION ITEMS

4.1 Reviw of PM Hot Spot Interagency Review Forms

1) LA0G208

   It was determined that this is not a POAQC.

2) LA11G3

   It was determined that this is not a POAQC.

3) LA0D198

   It was determined that this is not a POAQC.
   (FTA concurrence via email on August 24, 2011)

4) ORA080920

   It was determined that this is not a POAQC.