Air Quality & Climate Change Study Report

US 101/Palo Comado Canyon Road Interchange

PM 33.0/34.4
Caltrans Projects - EA No. 257200
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City of Agoura Hills, CA
Caltrans District 7

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EXECUTIVE SUMMARY

This air quality study report (AQSR) provides a discussion of the proposed project, the physical setting of the project area, and the regulatory framework for air quality. The report provides data on existing air quality and evaluates potential air quality impacts associated with the proposed project. The AQSR was prepared using information derived from the following studies prepared for the proposed project:

- *US 101/Palo Comado Canyon Road PA/ED Draft Traffic Impact Analysis* (2011). Prepared by Kimley-Horn and Associates, Inc.
- *Supplemental Analysis, US 101/Palo Comado Canyon Road PA/ED, Traffic Forecasts for Air Quality Analysis (2011)*. Prepared by Kimley-Horn and Associates, Inc.
- *Project Study Report to Request for Conceptual Approval and Programming for Capital Cost*. (2009) Prepared by Parsons Transportation Group, Inc.

Build Alternative

The Build Alternative would include widening the entire length of Palo Comado Canyon Road, between Driver Avenue to the north and Chesebro Road to the south; from two to four lanes. Within these limits, the Palo Comado Canyon Road Overcrossing would be widened from one lane in each direction to provide two lanes in each direction, along with a dedicated left-hand turn lane, for a total of five striped lanes. A Class II bike lane and sidewalks would be provided on both sides of the overcrossing.

The Build Alternative would maintain the existing layout of the interchange ramps; however, the northbound on- and off-ramps would be slightly re-configured, with an additional lane being provided on the northbound off-ramp at the Palo Comado Canyon Road intersection. The intersection of the northbound ramps and Palo Comado Road would be signalized; the remaining intersections would remain un-signalized.

Several utilities exist within the areas of potential construction, including sewer, overhead electrical, overhead and underground telephone, storm drains, Caltrans communications, and street lighting. Overhead electric and telephone lines would need to be relocated or undergrounded in some areas to accommodate the build alternative, and portions of the street light systems would be relocated along Palo Comado Canyon Road.

Existing drainage consists of pipe culverts, inlets, and ditches. The existing storm drain systems would remain in place. New inlets would be installed along the modified northbound off-ramp, as well as the northbound on-ramp. A new inlet system would be added to accommodate the widening of Palo Comado Canyon Road south of the bridge. The purpose of the proposed project is to:

Project Purpose

- Reduce existing and forecasted traffic congestion within the project limits;
- Improve circulation at the US 101/Palo Comado Canyon Road interchange and adjacent roadway network;
- Improve safety at the US 101/Palo Comado Canyon Road interchange; and

- Accommodate pedestrian and bicycle traffic along Palo Comado Canyon Road.

The project site is located within the South Coast Air Basin (SCAB or Basin) and is subject to South Coast Air Quality Management District (SCAQMD) guidelines and regulations. Within the SCAB, ozone and particulate matter (PM) are the pollutants of primary concern, since exceedances of state ambient air quality standards for those pollutants are experienced here in most years. For this reason the County has been designated as a nonattainment area for the state respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and ozone standards. The SCAB is also designated nonattainment for the state Nitrogen dioxide (NO_2) standard. With regard to federal ambient air quality standards, the SCAB is designated nonattainment for the ozone, PM_{10}, and $PM_{2.5}$ standards. Los Angeles County is also designated nonattainment for the state and federal lead standards. The SCAB is designated attainment or unclassified for the remaining state and federal ambient air quality standards. Ambient pollutant concentrations, state and federal standards, related health effects, an attainment designations are discussed in greater detail later in this report.

Project construction is anticipated to begin in February 2013, and be completed and open for traffic in 2015. As a result, project construction would not last more than five years and is considered temporary.

The proposed project is an operational improvement that would help improve local traffic circulation by relieving traffic congestion and overall vehicle delay at roadway intersection located within the project area. Reductions in overall vehicle delay are projected to result in a slight reduction in mobile-source emissions.

No-Build Alternative

The No Build Alternative proposes no improvements to area roadways. All roadways and freeway facilities would remain as-is.

Table of Contents

Executive Summary i
Build Alternative i
No-Build Alternative ii
Introduction 1
Purpose 1
Build Alternative 1
Project Location 1
Project Description 1
No-Build Alternative 8
Surrounding Land Uses 8
Air Quality 10
Regulatory Framework 10
Federal 10
Transportation Conformity 10
Regional Conformity 11
Project-Level Conformity 12
State of California 13
Air Quality Management 13
U.S. Environmental Protection Agency 13
California Air Resources Board 13
South Coast Air Quality Management District 13
Regulated Air Pollutants and Standards 14
Criteria Air Pollutants 14
Volatile Organic Compounds 17
Toxic Air Contaminants 17
Environmental Setting 18
Topography 19
Regional Meteorology & Climate 19
Air Quality Monitoring Data 19
Attainment Status 19
Sensitive Receptors 23
Project Analyses 23
Long-term Operational Emissions 23
Regional Conformity 24
Project-Level Conformity 26
Mobile Source Air Toxics 36
Short-Term Construction Emissions 41
Naturally Occurring Asbestos 42
Odors 43
Avoidance and Minimization Measures 43
SCAQMD Rules & Regulations 44
Climate Change 45
Setting 45
Greenhouse Gases 45
Effects of Climate Change 47
Project Analysis 48
Build Alternative 49

List of Figures

Figure 1 Project Vicinity & Location Maps 2
Figure 2 Proposed Build Alternative 3
Figure 3 Intersections within Project Area 4
Figure 4 Existing Land Uses 9
Figure 5 South Coast Air Basin Monitoring Stations – Los Angeles County 20
Figure 6 Project-Level CO Conformity Decision Flow Chart 27
Figure 7 National MSAT Emission Trends 1999-2050 For Vehicles Operating on Roadways Using EPA's Mobile 6.2 Model 37
Figure 8 Fleet CO2 Emissions vs. Speed (Highway) 49

List of Tables

Table 1 Level of Service – General Description 5
Table 2 Level of Service Criteria for Intersections 6
Table 3 Intersection LOS Summary for Existing (2010) Conditions 6
Table 4 Level of Service Criteria for Class II Arterials 6
Table 5 Palo Comado Canyon Road Service Volumes 6
Table 6 Level of Service Criteria for Freeway Ramps 7
Table 7 Freeway Ramp Operations for Palo Comado Canyon Road Interchange 7
Table 8 Accident Rates for US 101/Palo Comado Canyon Road Interchange Ramps 7
Table 9 Summary of Ambient Air Quality Standards 11
Table 10 Criteria Air Pollutants Summary of Common Sources and Effects 15
Table 11 Summary of Ambient Air Quality Monitoring Data [1,2] 21
Table 12 State and Federal Ambient Air Quality Attainment Designations South Coast Air Basin 22
Table 13 Estimated Operational Emissions of Criteria Air Pollutants 25
Table 14 Roadway Segment Average Speeds 32
Table 15 Peak-hour Traffic Volumes 33
Table 16 Summary of Intersection Level of Service Opening Year 2015 Conditions 34
Table 17 Summary of Intersection Level of Service Opening Year 2035 Conditions 34
Table 18 Average Annual Daily Traffic Volumes 36
Table 19 Intersection Vehicle Delay – AM Peak Hour 41
Table 20 Intersection Vehicle Delay – PM Peak Hour 41
Table 21 Estimated Construction Emissions 42
Table 22 Annual Greenhouse Gas Emissions 50
Table 23 Construction-Generated Greenhouse Gas Emissions 51

List of Appendices

APPENDIX A: Transportation Conformity Working Group Determination
APPENDIX B: Regional Transportation Conformity
APPENDIX C: Areas Known/Likely to Contain Naturally Occurring Asbestos
APPENDIX D: Emissions Modeling
APPENDIX E: Applicable SCAQMD Rules & Regulations

COMMON ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ADT	Average Daily Traffic
AADT	Annual Average Daily Traffic
AQMP	Air Quality Management Plan
Basin	South Coast Air Basin (also SCAB)
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalents
DPM	Diesel Particulate Matter
DRRP	Diesel Risk Reduction Plan
US EPA	United States Environmental Protection Agency
EMFAC	Emissions Factor Model
FCAA	Federal Clean Air Act
FHWA	Federal Highway Administration
HAPs	Hazardous Air Pollutants
HCM	Highway Capacity Manual
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
LOS	Level of Service
MMT	Million Metric Tons
mph	Miles per Hour
MSAT	Mobile Source Air Toxic
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NO_2	Nitrogen Dioxide
O_3	Ozone
Pc/mi/ln	Passenger cars per mile per lane
ppb	Parts per Billion
ppm	Parts per Million
Pb	Lead
PM	Post Mile
PM_{10}	Respirable Particulate Matter
$PM_{2.5}$	Fine Particulate Matter
POAQC	Project of Air Quality Concern
ROG	Reactive Organic Gases
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SB	Senate Bill
SIP	State Implementation Plan

SO_2	Sulfur Dioxide
STIP	State Transportation Improvement Program
TAC	Toxic Air Contaminant
TCWG	Transportation Conformity Working G
TIP	Transportation Improvement Plan
TEA-21	Transportation Equity Act for the 21st Century
TSN TASAS	Transportation Systems Network Traffic Accident Surveillance and Analysis System
TSP	Total Suspended Particulates
$\mu g/m^3$	Micrograms per Cubic Meter
US 101	United States Highway 101
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

INTRODUCTION

Purpose

The California Department of Transportation (Caltrans) and The City of Agoura Hills (City), propose to construct improvements at the United States Highway 101 (US 101) and Palo Comado Canyon Road interchange. This report documents the anticipated air quality effects of the proposed US 101/Palo Comado Canyon Road interchange project (proposed project). The purpose of this report is intended to satisfy the requirements of the California Environmental Quality Act, the National Environmental Policy Act (NEPA), and transportation conformity requirements. The AQSR was prepared using information derived from the following studies prepared for the proposed project:

- *US 101/Palo Comado Canyon Road PA/ED Draft Traffic Impact Analysis* (2011). Prepared by Kimley-Horn and Associates, Inc.
- *Supplemental Analysis, US 101/Palo Comado Canyon Road PA/ED, Traffic Forecasts for Air Quality Analysis (2011).* Prepared by Kimley-Horn and Associates, Inc.
- *Project Study Report to Request for Conceptual Approval and Programming for Capital Cost*. (2009) Prepared by Parsons Transportation Group, Inc.

Build Alternative

Project Location

The proposed project is located in Los Angeles County within in the City of Agoura Hills. The project site is located within the South Coast Air Basin (SCAB or Basin) and is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The proposed project includes improvements to Palo Comado Canyon Road, between Driver Avenue to the north and Chesebro Road to the south, including the US101/Palo Comado Canyon Road Overcrossing. The project location is depicted in **Figure 1**. **Figure 2** outlines the proposed improvements and area of potential disturbance.

Project Description

Caltrans and The City of Agoura Hills (City), propose to construct improvements at the US 101/Palo Comado Canyon Road interchange (PM 33.0/34.4), in Los Angeles County within in the City of Agoura Hills.

The Build Alternative would include widening the entire length of Palo Comado Canyon Road, between Driver Avenue to the north and Chesebro Road to the south; from two to four lanes (see **Figure 2**). Within these limits, the Palo Comado Canyon Road Overcrossing would be widened from one lane in each direction to provide two lanes in each direction, along with a dedicated left-hand turn lane, for a total of five striped lanes. A Class II bike lane and sidewalks would be provided on both sides of the overcrossing.

The Build Alternative would maintain the existing layout of the interchange ramps; however, the northbound on- and off-ramps would be slightly re-configured, with an additional lane being provided on the northbound off-ramp at the Palo Comado Canyon Road intersection. The intersection of the northbound ramps and Palo Comado Road would be signalized; the remaining intersections would remain un-signalized. Intersections in the project area are depicted in **Figure 3**.

Figure 1
Project Vicinity & Location Maps

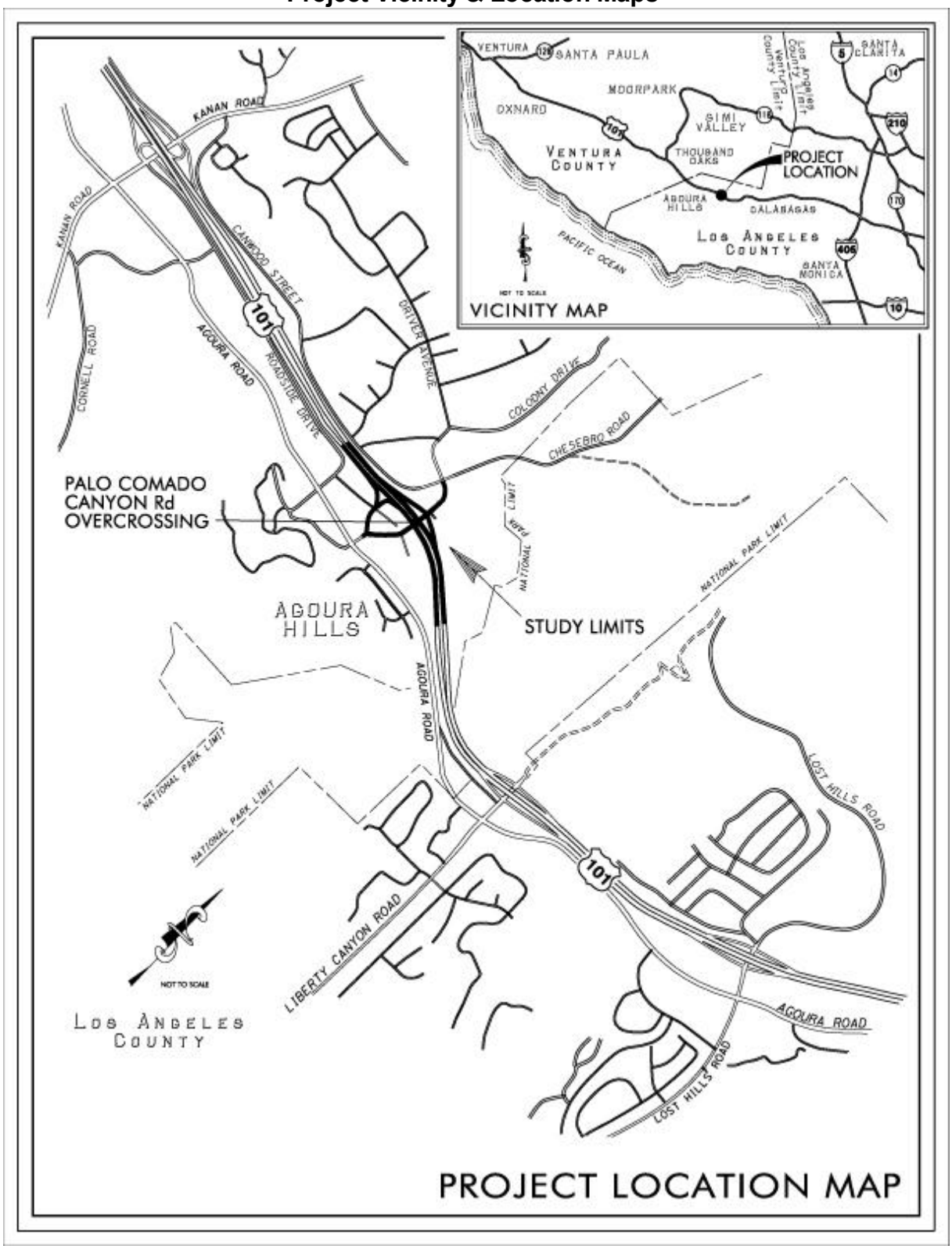

Figure 2
Proposed Build Alternative

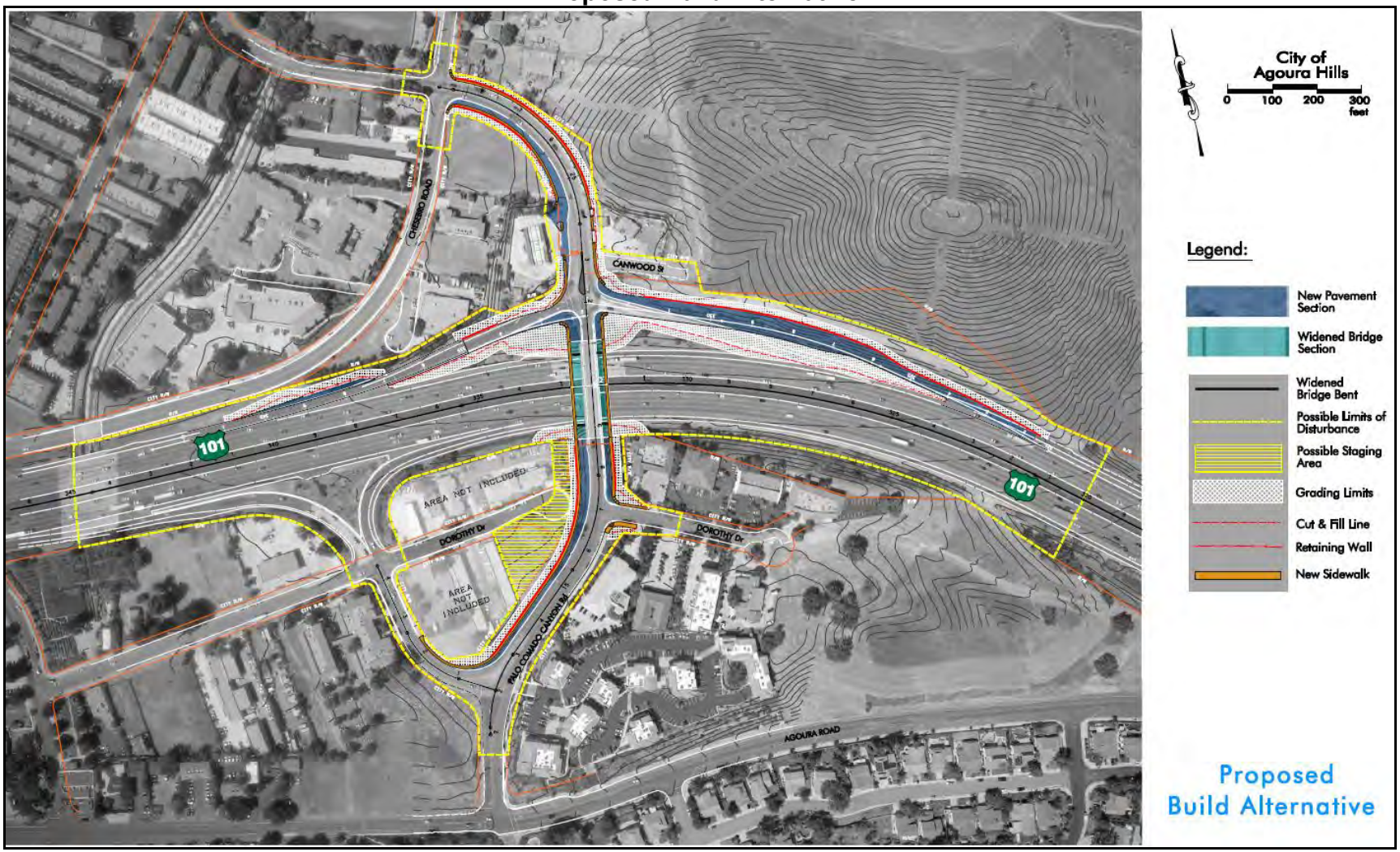

Figure 3
Intersections within Project Area

Several utilities exist within the areas of potential construction, including sewer, overhead electrical, overhead and underground telephone, storm drains, Caltrans communications, and street lighting. Overhead electric and telephone lines would need to be relocated or undergrounded in some areas to accommodate the build alternative, and portions of the street light systems would be relocated along Palo Comado Canyon Road.

Existing drainage consists of pipe culverts, inlets, and ditches. The existing storm drain systems would remain in place. New inlets would be installed along the modified northbound off-ramp, as well as the northbound on-ramp. A new inlet system would be added to accommodate the widening of Palo Comado Canyon Road south of the bridge.

Project construction is anticipated to begin in February 2013, and be completed and open for traffic in 2015. The project design/horizon year is 2035.

Project Purpose

- Reduce existing and forecasted traffic congestion within the project limits;
- Improve circulation at the US 101/Palo Comado Canyon Road interchange and adjacent roadway network;
- Improve safety at the US 101/Palo Comado Canyon Road interchange; and
- Accommodate pedestrian and bicycle traffic along Palo Comado Canyon Road.

Project Need

Traffic

The quality of traffic flow can be identified in terms of level of service (LOS). There are six LOS, ranging from LOS A to LOS F, as defined in **Table 1**. The City's most recent General Plan update (March 2010) has identified the US 101/Palo Comado Canyon Road interchange as deficient under existing as well as future forecast conditions. The General Plan identifies LOS C as the typical minimum acceptable standard for roadways within the city. LOS Criteria for intersections, as defined by the 2000 Highway Capacity Manual (HCM) are included in **Table 2**.

Table 1
Level of Service – General Description

Level of Service	General Description
A	Free flow
B	Stable flow (slight delays)
C	Stable flow (acceptable delays)
D	Approaching unstable flow (tolerable delay)
E	Unstable flow (intolerable delay)
F	Forced flow (jammed)

Source: Kimley-Horn and Associates, Inc. US 101/Palo Comado Canyon Road PA/ED, Traffic Impact Analysis (2011)

Currently, the US 101/Palo Comado Canyon Road northbound off-ramp intersection (two-way stop sign) operates at a LOS D in the AM peak period with a delay of 33.3 seconds (see **Table 3**) and at LOS E during the PM peak period with a delay of 37.6 seconds. The all-way stop located at the Driver Avenue/Chesebro Road intersection operates at a LOS of F in the AM period with a delay of 50.9, and LOS E in the PM peak period with a delay of 36.5. The City's minimum acceptable standard (LOS C) is not achievable under current existing conditions for the northbound off-ramp intersection or Driver/Chesebro intersection.

Table 2
Level of Service Criteria for Intersections

Unsignalized Intersection Delay (seconds/vehicle)	Signalized Intersection Delay (seconds/vehicle)	Level of Service (LOS)
≤10.0	≤10.0	A
>10.0 and ≤15.0	>10.0 and ≤20.0	B
>15.0 and ≤25.0	>20.0 and ≤35.0	C
>25.0 and ≤35.0	>35.0 and ≤55.0	D
>35.0 and ≤50.0	>55.0 and ≤80.0	E
>50.0	>80.0	F

Source: Kimley-Horn and Associates, Inc. US 101/Palo Comado Canyon Road PA/ED, Traffic Impact Analysis (2011)

Table 3
Intersection LOS Summary for Existing (2010) Conditions

Intersection Number	Intersection	Intersection Control	Existing			
			AM		PM	
			Delay*	LOS	Delay*	LOS
1	Driver Ave. at Chesebro Rd.	All-way stop	50.9	F	36.5	E
2	Palo Comado Canyon Rd. at US101 NB Ramps	Two-way stop (stop sign on ramp)	33.3	D	37.6	E
3	Dorothy Dr. at US101 SB Ramps	All-way stop	19.1	C	12.6	B
4	Palo Comado Canyon Rd. at Chesebro Rd.	Two-way stop	17.6	C	19.0	C
5	Agoura Rd. at Chesebro Rd.	All-way stop	9.1	A	11.5	B

** Delay refers to the average delay for the entire intersection. At a two-way stop, delay refers to the worst approach delay.*
Source: Kimley-Horn and Associates, Inc. US 101/Palo Comado Canyon Road PA/ED, Traffic Impact Analysis (2011)

Palo Comado Canyon Road is considered to be a Class II suburban minor arterial. The service volume thresholds and correlated LOS established by the Transportation Research Board for Class II arterials are provided in **Table 4**.

Table 4
Level of Service Criteria for Class II Arterials

Lanes	Service Volumes (vehicles/hour)		
	LOS C	LOS D	LOS E
1	670	850	890

Source: Kimley-Horn and Associates, Inc. US 101/Palo Comado Canyon Road PA/ED, Traffic Impact Analysis (2011)

Table 5 indicates that Palo Comado Canyon Road currently operates at LOS F or worse during both the AM and PM peak hours under existing conditions. The City's minimum acceptable standard (LOS C) is not achievable under current existing conditions.

Table 5
Palo Comado Canyon Road Service Volumes

	Peak Period	Service Volumes (vehicles/hour)	LOS
Existing Conditions (2010)	AM	1,013	F
	PM	936	F

Source: Kimley-Horn and Associates, Inc. US 101/Palo Comado Canyon Road PA/ED, Traffic Impact Analysis (2011)

Freeway ramp LOS is expressed in terms of density, which measures the number of passenger cars per lane mile (pc/mi/ln) on the freeway mainline, as outlined in **Table 6**.

Table 6
Level of Service Criteria for Freeway Ramps

Ramps Maximum Density (pc/mi/ln)	Level of Service (LOS)
≤10	A
≤20	B
≤28	C
≤35	D
>35	E
Exceeds Capacity	F

Source: Kimley-Horn and Associates, Inc. US 101/Palo Comado Canyon Road PA/ED, Traffic Impact Analysis (2011)

Table 7 indicates that all ramps for the Palo Comado Canyon Road interchange operate at a LOS D, with the exception of the northbound off-ramp (LOS C).

Table 7
Freeway Ramp Operations for Palo Comado Canyon Road Interchange

Route Segment	Existing Conditions (2010)	
	Density	LOS
Northbound on-ramp	29.9	D
Northbound off-ramp	27.3	C
Southbound on-ramp	31.9	D
Southbound off-ramp	29.6	D

Source: Kimley-Horn and Associates, Inc. US 101/Palo Comado Canyon Road PA/ED, Traffic Impact Analysis (2011)

Safety

Accident data based on Caltrans Transportation Systems Network Traffic Accident Surveillance and Analysis System (TSN TASAS) for the three-year period ending December 31, 2009 shows that the total rate of accidents at the Palo Comado Canyon Road interchange is generally lower than the statewide average. There are two exceptions to this: the northbound off-ramp total accident rate is 50 percent higher than the statewide average and 71 percent higher than the statewide average for fatality plus injury. The TSN TASAS data is summarized in **Table 8**.

Table 8
Accident Rates for US 101/Palo Comado Canyon Road Interchange Ramps

Location	Segment Actual Accident Rate*			Statewide Average Accident Rate*		
US 101/ Palo Comado Canyon Road Interchange	Fatalities	Injuries & Fatalities	Total	Fatalities	Injuries & Fatalities	Total
Northbound off-ramp	0.000	**0.72**	**1.81**	0.004	0.42	1.20
Northbound on-ramp	0.000	0.00	0.00	0.002	0.26	0.75
Southbound off-ramp	0.000	0.00	0.35	0.004	0.28	0.95
Southbound on-ramp	0.000	0.18	0.35	0.002	0.14	0.45

* Accident rates per million vehicle miles traveled
Source: Kimley-Horn and Associates, Inc. US 101/Palo Comado Canyon Road PA/ED, Traffic Impact Analysis (2011)

The primary collision factor for the northbound off-ramp accidents is failure to yield, which accounts for 50 percent of the accidents. The location of the accidents for this off-ramp are clustered around the ramp intersection and ramp area preceding the intersection, which account for 70 percent and 20 percent of the accidents, respectively. The primary collision

factor for accidents that occurred on the southbound on-ramp was speeding. The primary collision factor for the accidents that occurred on the southbound off-ramp was influence of alcohol.

Operational Deficiencies

The existing bridge has non-standard stopping sight distance at the northbound off-ramp intersection. Additional non-standard features include a sidewalk on only one side (west side) of the bridge, and no bicycle lanes on the bridge.

Project Construction

Construction of the proposed project would occur in multiple phases, including widening of Palo Comado Canyon Road, reconstruction of US101 on/off-ramps, and bridge widening activities. The principal sources of pollutant emissions during construction are fugitive dust and engine exhaust from construction equipment. Fugitive dust would be created during site clearing, excavation, and grading; vehicle travel on paved and unpaved surfaces; as well as, material blown from unprotected graded surfaces. Stationary or mobile powered on-site construction equipment would include trucks, tractors, signal boards, excavators, backhoes, concrete saws, graders, trenchers, pavers, and other paving equipment.

Construction of the proposed project is anticipated to commence in February 2013, and be completed and open for traffic in 2015. As a result, project construction would not last more than five years and is considered temporary.

No-Build Alternative

The No Build Alternative proposes no improvements to area roadways. All roadways and freeway facilities would remain as-is.

Surrounding Land Uses

The area surrounding the project site consists of a mix of residential, commercial, and school properties. The neighborhood along Agoura Road south of the interchange is mostly residential with single family homes, while the properties in the immediate area of the interchange are mostly commercial, including business parks, light industrial, retail, and gas stations. Gas stations exist in the north east and northwest quadrants of the interchange adjacent to the northbound ramps. Most of the remaining areas in the northeast quadrant of the interchange are vacant land, except for an equestrian community located near the interchange of Palo Comado Canyon Road and Driver Avenue. Several multi-family residential properties, Agoura Park, and Agoura High School are located northwest of the interchange. A Montessori School and learning center is located approximately 500 feet northwest of the project area, near the intersection of Driver Avenue and Chesebro Road. Existing land uses are depicted in **Figure 4**.

Figure 4
Existing Land Uses

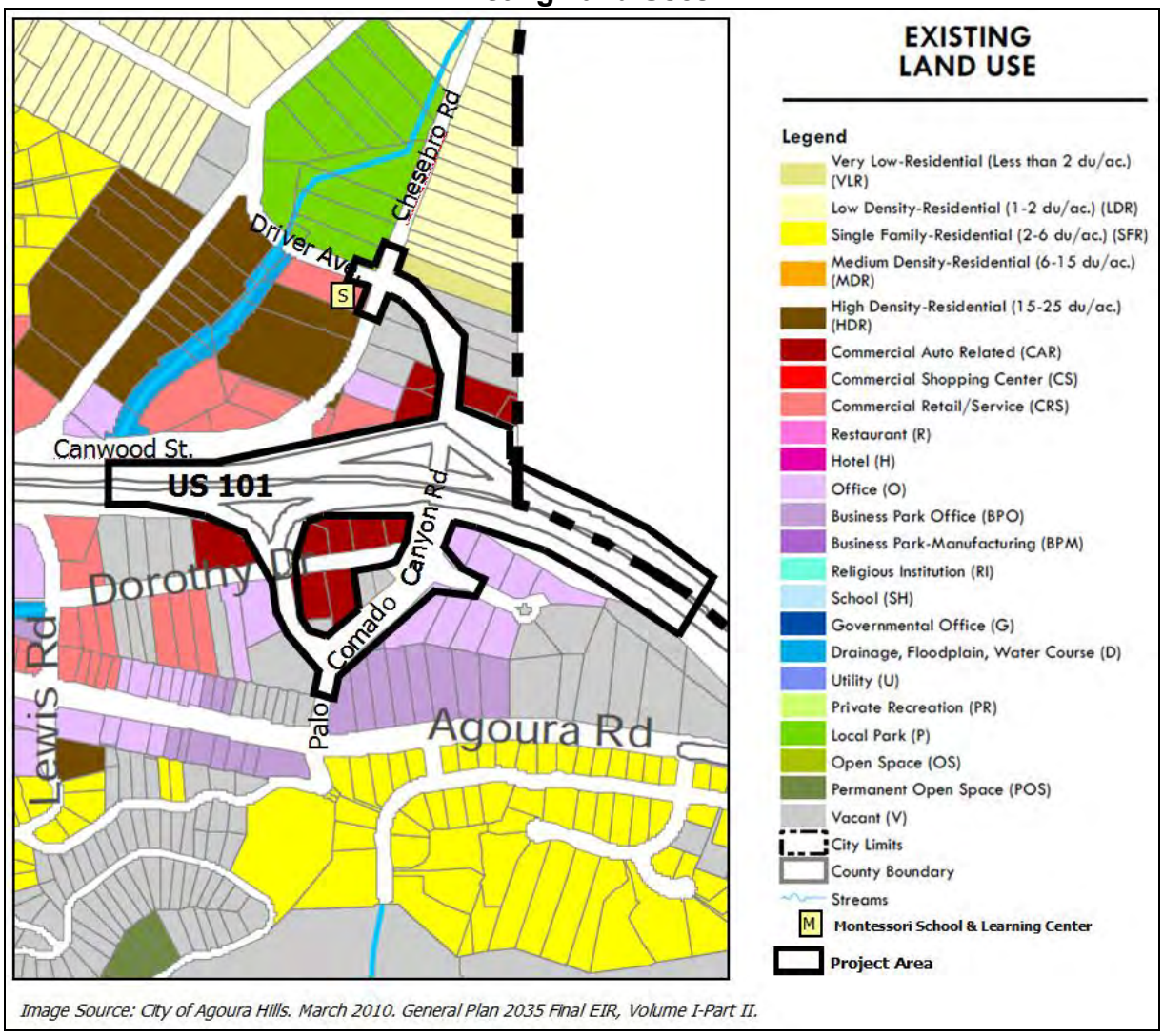

Image Source: City of Agoura Hills. March 2010. General Plan 2035 Final EIR, Volume I-Part II.

AIR QUALITY

Regulatory Framework

Federal

Federal air quality policies are regulated through the federal Clean Air Act (FCAA). The FCAA required the US EPA to establish National Ambient Air Quality Standards (NAAQS or National AAQS), and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized in **Table 9**.

The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The US EPA has responsibility to review all state SIPs to determine conformance with the mandates of the FCAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the US EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures.

Transportation Conformity

The FCAA requires that all transportation plans and programs pass the air quality conformity test. This process involves forecasting future emissions of air pollution to determine whether the amount of future pollution resulting from the plan or program would be within the allowable limit for motor vehicle emissions.

Transportation conformity must be determined for all nonattainment area pollutants classified as regional pollutants. In the SCAB, federal nonattainment pollutants include ozone (O_3), respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$). The Los Angeles County portion of the SCAB is designated as nonattainment of state and federal lead standards. Transportation projects also generate CO, which is considered a localized pollutant. The *Transportation Project-Level Carbon Monoxide Protocol, UCD-ITS-97-21* (CO Protocol), University of California, Davis, December 1997, provides procedures and guidelines for use by agencies to evaluate the potential local level CO impacts of a transportation project. The CO Protocol includes a screening procedure that can be used to determine if CO micro-scale modeling is required for a proposed project. CO micro-scale modeling is required for projects that fail the screening procedure to determine whether a transportation project would cause or contribute to localized violations of CO NAAQS.

Table 9
Summary of Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
			Primary [a]	Secondary [b]
Ozone (O3)	1-hour	0.09 ppm	- -	Same as Primary
	8-hour	0.070 ppm	0.075 ppm	
Particulate Matter (PM10)	AAM	20 µg/m3	- -	
	24-hour	50 µg/m3	150 µg/m3	
Fine Particulate Matter (PM2.5)	AAM	12 µg/m3	15 µg/m3	
	24-hour	No Standard	35 µg/m3	
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm	None
	8-hour	9 ppm	9 ppm	
	8-hour (Lake Tahoe)	6 ppm	–	
Nitrogen Dioxide (NO2)	AAM	0.030 ppm	0.053 ppm	Same as Primary
	1-hour	0.18 ppm	100 ppb	
Sulfur Dioxide (SO2)				–
	24-hour	0.04 ppm	–	–
	3-hour	–	–	0.5 ppm
	1-hour	0.25 ppm	75 ppb	–
Lead	30-day Average	1.5 µg/m3	–	–
	Calendar Quarter	–	1.5 µg/m3	Same as Primary
	Rolling 3-Month Average	–	0.15 µg/m3	
Sulfates	24-hour	25 µg/m3	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm		
Vinyl Chloride	24-hour	0.01 ppm		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient of 0.23 per kilometer —visibility of 10 miles or more (0.07—30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.		

a. Levels necessary to protect the public health.
b. Levels necessary to protect the public welfare from known or anticipated adverse effects.
AAM = Annual Arithmetic Mean; µg/m³ = Micrograms per cubic meter; ppm = parts per million; ppb = parts per billion
Source: CARB 2011

Regional Conformity

Regional conformity must be determined based on a full study at least every four years. In California, it is determined at least every four years when the state-required Regional Transportation Plan (RTP) updates are done. In addition, a new Federal Transportation

Improvement Plan (FTIP) is required every two years, for which a conformity determination is required. Amendments to both the RTP and FTIP also must have conformity demonstrated, including a full-scale revision of the regional analysis if regionally significant projects are added, deleted, or significantly modified. Regional conformity is demonstrated by showing that the project is included in a conforming RTP and FTIP with substantially the same design concept and scope that was used for the regional conformity analysis. The SCAG prepares a RTP every four years and a FTIP every two years.

Project-Level Conformity

On March 10, 2006, the US EPA published a final rule (71 FR 12468) establishing transportation conformity requirements for analyzing the project-level local PM and carbon monoxide (CO) air quality impacts of transportation projects. Localized air quality impact analyses are commonly referred to as "hot-spot" analyses. Hot-spot analyses assesses the air quality impacts on a scale smaller than an entire nonattainment or maintenance area, including, for example, congested intersections or transit terminals. According to the final rule project-level conformity is demonstrated by showing that the project will not cause a localized exceedance of applicable CO and/or PM standards, and that it will not interfere with "timely implementation" of Transportation Control Measures called out in the State Implementation Plan. The Final Rule has the following Key Elements:

- This rule requires that $PM_{2.5}$ hot-spot analyses be performed only for new transportation projects with significant diesel traffic. Examples of such "projects of air quality concern" include intermodal freight or bus terminals, and major highway projects and congested intersections involving significant diesel traffic. No hot spot analyses will be required for most projects in $PM_{2.5}$ areas, because most projects are not an air quality concern. This final rule also streamlines existing PM_{10} hot spot requirements in a similar way.
- The streamlined approach in this final rule will ensure that transportation and air quality agencies in $PM_{2.5}$ and PM_{10} areas use their resources efficiently, while achieving clean air goals.
- In both $PM_{2.5}$ and PM_{10} areas, a quantitative hot spot analysis is not required until the US EPA issues a new motor vehicles emissions model capable of estimating local emissions as well as future hot spot modeling guidance. Qualitative analyses will apply in the interim.

This rule extends an existing flexibility by allowing the U.S. Department of Transportation (US DOT) to make "categorical hot spot findings," which waive $PM_{2.5}$ and PM_{10} hot spot reviews for categories of projects where modeling shows that there is no air quality concern.

The conformity rule required a qualitative PM hot-spot analysis to be performed until such time that the US EPA releases guidance on how to conduct quantitative PM hot-spot analyses. US EPA guidance for conducting quantitative PM hot-spot analysis was recently released in December 2010[1]. Accordingly, a quantitative PM hot-spot analysis is now required for projects that are determined to be a Project of Air Quality Concern (POAQC), as determined through interagency consultation. The interagency consultation process is required for completing project-level conformity determinations and hot-spot analyses. For

[1]*Based on recent guidance adopted by the US EPA, December 2010. Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas. EPA-420-B-10-040. Available at Website url: http://www.epa.gov/otaq/stateresources/transconf/policy/420b10040.pdf.*

projects that are determined through interagency consultation to not be POAQC a PM hot-spot analysis is not required.

State of California

California Clean Air Act

The California Air Resources Board (CARB) administers air quality policy in California. The CAAQS were established in 1969 pursuant to the Mulford-Carrell Act. These standards are generally more stringent and apply to more pollutants than the NAAQS (i.e., visibility reducing particulates, hydrogen sulfide, and sulfates). The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an air quality management plan (AQMP) to achieve compliance with CAAQS. These AQMP's also serve as the basis for the preparation of the SIP for the State of California.

CARB also administers the State's mobile source emissions control program and oversees air quality programs established by State statute, such as Assembly Bill (AB) 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987.

Air Quality Management

Within the SCAB, air quality is managed by various federal, state, regional, and local agencies, including the US EPA, CARB, and the SCAQMD. The responsibilities of these various agencies are discussed in more detail, as follows:

U.S. Environmental Protection Agency

The US EPA is responsible for establishing the national ambient air quality standards and enforcing the FCAA. This agency also regulates emission sources under the exclusive authority of the federal government, such as aircraft, certain types of ships and locomotives. The US EPA has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must also meet the often stricter emission standards established by the California Air Resources Board (CARB).

California Air Resources Board

The CARB became part of the California Environmental Protection Agency (CalEPA) in 1991. The agency is responsible for ensuring implementation of the CCAA, meeting state requirements of the FCAA, and establishing the CAAQS (refer to **Table 1**). It is also responsible for setting vehicle emission standards and fuel specifications, and regulating emissions from other sources such as consumer products and certain types of mobile equipment (e.g., lawn & garden equipment, industrial forklifts).

South Coast Air Quality Management District

Because Southern California has one of the worst air quality problems in the nation, the SCAQMD was created by the 1977 Lewis Air Quality Management Act. Four county air pollution control agencies were merged into one regional district to better address the issue of improving air quality in Southern California. Under the act, revised and renamed the Lewis-Presley Air Quality Management Act in 1988, the SCAQMD is the agency principally

responsible for comprehensive air pollution control in the SCAB. Specifically, the SCAQMD is responsible for monitoring air quality and planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the district. Programs developed include air quality rules and regulations that regulate stationary source emissions, including area and point sources and certain mobile source emissions. The SCAQMD is also responsible for establishing permitting requirements and issuing permits for stationary sources and ensuring that new, modified, or relocated stationary sources do not create net emissions increases. The SCAQMD enforces air quality rules and regulations through a variety of means, including inspections, educational and training programs, and fines.

The SCAQMD is also the lead agency in charge of developing the AQMP, with input from the Southern California Association of Governments (SCAG) and CARB. The AQMP is a comprehensive plan that includes control strategies for stationary and area sources, as well as for on-road and off-road mobile sources. SCAG has the primary responsibility for providing future growth projections and the development and implementation of transportation control measures. CARB in coordination with federal agencies provides the control element for mobile sources.

Regulated Air Pollutants and Standards

Air pollutants regulated by the federal and California Clean Air Acts or other laws fall under three main categories: (1) criteria air pollutants, (2) toxic air contaminants (TACs), and (3) global warming and ozone-depleting gases. Pollutants in each of these categories are monitored and regulated differently. Criteria air pollutants are measured by sampling concentrations in the ambient air; toxic air contaminants are measured at the source and in the general atmosphere; and, global warming and ozone-depleting gases are not monitored but are subject to federal and regional policies that call for their reduction and eventual phase out. The following provides a discussion of criteria air pollutants and TACs. GHGs are discussed later in this report.

Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health. The national and state ambient air quality standards have been set at levels to protect human health with a determined margin of safety. For some pollutants, there are also secondary standards to protect the environment. Ozone (O_3) and PM are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as CO, Nitrogen Dioxide (NO_2), Sulfur Dioxide (SO_2), and lead (Pb) are considered to be local pollutants because they tend to accumulate in the air locally. PM is also considered as a local pollutant. In the area of the proposed project site, ozone and particulate matter are of particular concern. Health effects commonly associated with criteria pollutants are summarized in **Table 10** and discussed in greater detail, as follows:

Carbon Monoxide

CO is a colorless, odorless gas formed by the incomplete combustion of fuels. Motor vehicles are the main source of this gas. CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs in the body.

Table 10
Criteria Air Pollutants Summary of Common Sources and Effects

Pollutant	Major Man-Made Sources	Human Health & Welfare Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming, and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O3)	Formed by a chemical reaction between volatile organic compounds (VOC) and nitrous oxides (NOx) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes.
Particulate Matter (PM10 & PM2.5)	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned; when gasoline is extracted from oil; or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel; damage crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.
Source: CARB 2010, CAPCOA 2010		

The ambient air quality standard for carbon monoxide is intended to protect persons whose medical condition already compromises their circulatory system's ability to deliver oxygen. These medical conditions include certain heart ailments, chronic lung diseases, and anemia. Persons with these conditions have reduced exercise capacity even when exposed to relatively low levels of CO. Fetuses are at risk because their blood has an even greater affinity to bind with CO. Smokers are also at risk from ambient CO levels because smoking increases the background level of CO in their blood.

Nitrogen Dioxide

NO_2 is a byproduct of fuel combustion. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts quickly to form NO_2, creating the mixture of NO and NO_2 commonly called NO_x. NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in young children has also been observed at concentrations below 0.3 parts per million (ppm). NO_2 absorbs blue light which results in a brownish red cast to the atmosphere and reduced visibility.

Ozone

O_3 is one of a number of substances called photochemical oxidants that are formed when volatile organic compounds (VOC) and NO_x react in the presence of ultraviolet sunlight. O_3 concentrations in the South Coast basin are typically among the highest in the nation, and the damaging effects of photochemical smog, which is a popular name for a number of oxidants in combination, are generally related to the concentrations of O_3. Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the subgroups most susceptible to O_3 effects. Short-term exposures (lasting for a few hours) to O_3 at levels typically observed in southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient O_3 levels and increases in daily hospital admission rates, as well as mortality, has also been reported.

Particulate Matter

Respirable fine particulate matter (PM_{10}) consists of extremely small suspended particles or droplets 10 microns or smaller in diameter that can lodge in the lungs, contributing to respiratory problems. PM_{10} arises from such sources as reentrained road dust, diesel soot, combustion products, tire and brake abrasion, construction operations, and fires. It is also formed in the atmosphere from NO_x and SO_2 reactions with ammonia. PM_{10} scatters light and significantly reduces visibility.

Inhalable particulates pose a serious health hazard, alone or in combination with other pollutants. More than half of the smallest particles inhaled will be deposited in the lungs and can cause permanent lung damage. Inhalable particulates can also have a damaging effect on health by interfering with the body's mechanism for clearing the respiratory tract or by acting as a carrier of an absorbed toxic substance.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms and difficulty in breathing for children. Individuals with asthma may experience constriction of airways with exposure to SO_2. Though SO_2 concentrations have been reduced to levels well below state and federal standards, further reductions in SO2 emissions are needed because SO_2 is a precursor to sulfate and PM_{10}.

Lead

Exposure to lead emissions can result in anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, and lowered IQ. On October 15, 2008 the US EPA amended the NAAQS for Lead from 1.5 µg/m3 to 0.15 µg/m3 in order to provide an adequate margin of safety that would ensure the protection of public health. Based on current monitoring data, large lead-acid battery recycling facilities are one of the largest sources of lead in Los Angeles County.

Volatile Organic Compounds

It should be noted that there are no state or federal ambient air quality standards for VOCs because they are not classified as criteria pollutants. VOCs are regulated, however, because a reduction in VOC emissions reduces certain chemical reactions which contribute to the formation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, contributing to higher PM_{10} and lower visibility levels.

Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations of VOC. Some hydrocarbon components classified as VOC emissions are hazardous air pollutants. Benzene, for example, is a hydrocarbon component of VOC emissions that is known to be a human carcinogen.

Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards.

TACs therefore are not considered "criteria pollutants" under either the CAA or the CCAA, and are thus not subject to the NAAQS or CAAQS. Instead, the US EPA and CARB regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with rules developed by the local air districts, CARB establishes the regulatory framework for TACs. At the national levels, the US EPA has established National Emission Standards for HAPs (NESHAPs), as required by the federal Clean Air Act Amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Mobile Source Air Toxics

Mobile source air toxics (MSATs) are a subset of the 188 air toxics defined in the Clean Air Act and are federally regulated under 40 Code of Federal Regulations 1502.22 by the US EPA. MSATs include 21 compounds emitted from highway vehicles and non-road equipment. There are seven main toxics including diesel exhaust, benzene, and formaldehyde, among others. Of these, diesel-exhaust particulate matter (DPM) is of primary concern. Most recently, the Federal Highway Administration (FHWA) issued interim guidance on September 30, 2009 for the analysis of MSATs in National Environmental Policy Act documents. The

FHWA's interim guidance for the analysis of MSATs is discussed in greater detail later in this report.

In September 2000, the CARB adopted the Diesel Risk Reduction Plan (DRRP), which recommends many control measures to reduce the risks associated with DPM and achieve a goal of 75 percent PM reduction by 2010 and 85 percent by 2020. The DRRP incorporates measures to reduce emissions from diesel-fueled vehicles and stationary diesel-fueled engines. Ongoing efforts of the CARB to reduce diesel-exhaust emissions from these sources include the development of specific statewide regulations, which are designed to further reduce DPM emissions from these sources. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce DPM emissions.

Since the initial adoption of the DRRP in September of 2000, the CARB has adopted numerous rules related to the reduction of diesel-exhaust PM from mobile sources, as well as, the use of cleaner burning fuels. Transportation sources addressed by these rules include public transit buses, school buses, on-road heavy-duty trucks, and off-road heavy-duty equipment.

Health Effects

There are hundreds of TACs, and exposure to these pollutants is associated with elevated risk of cancer and non-cancer health effects such as birth defects, genetic damage, and other adverse health effects. Effects may be chronic (i.e., of long duration) or acute (i.e., of short duration) on human health. Acute health effects are attributable to short term exposure to air toxics. These effects include nausea, skin irritation, respiratory illness, and, in extreme cases, death. Chronic health effects result from long-term exposure. Most recently, DPM was added to the CARB list of TACs. DPM is the primary TACs of concern for mobile sources. Of all controlled TACs, emissions of DPM are estimated to be responsible for about 70 percent of the total ambient TAC risk. The CARB has made the reduction of the public's exposure to DPM one of its highest priorities, with an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles (CAPCOA 1010, CARB 2010).

Environmental Setting

As noted earlier in this report, the proposed project is located in the SCAB and within the jurisdiction of the SCAQMD. The SCAQMD has jurisdiction over the SCAB. This area includes all of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The SCAB is a sub-region of the district and covers an area of 6,745 square miles. The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties.

Primary factors known to influence air quality within the SCAB include topography and meteorology, which can affect pollutant transport and dispersion from sources located within and outside of the SCAB. These air quality-related issues are discussed in more detail, as follows:

Topography

The SCAB is surrounded by mountains on three sides and the Pacific Ocean on the remaining side. The mountains serve as a barrier, preventing ready dispersion of pollutant concentrations. Prevailing wind patterns off the ocean carry pollutants eastward across the SCAB, enabling continual photochemical reactions to occur as new emissions are added to existing pollutant concentrations. Intense sunlight, present at the latitude of the SCAB, provides the ultraviolet light necessary to fuel the photochemical reactions that produce ozone (SCAQMD 1999).

Regional Meteorology & Climate

Average wind speeds in the Basin are light and primarily from the west. Mild sea breezes slowly carry pollutants inland. An inversion layer, which is a layer of warm air that lies over cooler, ocean-modified air, often acts as a lid, preventing air pollutants from escaping upward. In the summer, these temperature inversions are stronger than in winter and prevent ozone and other pollutants from escaping upward and dispersing. In the winter, a ground-level or surface inversion commonly forms during the night. Annual average temperature varies little throughout the SCAB averaging approximately 62 degrees Fahrenheit (°F). Based on historical data for the Los Angeles area, average temperatures range from a January low of approximately 49 °F to an August high of approximately 84 °F (WRCC 2011).

Air Quality Monitoring Data

Air pollutant concentrations are measured at several monitoring stations in the SCAB. The nearest ambient air quality monitoring stations to the project site are the Reseda monitoring station (which measures ozone, $PM_{2.5}$, CO, and NO_2), and the Burbank-W. Palm Avenue monitoring station (which is the closest station that measures PM_{10}). Monitoring station locations within the SCAB are depicted in **Figure 5**. Ambient air quality monitoring data were obtained for the last five years of available measurement data (i.e., 2005 through 2009) and are summarized in **Table 11**.

As depicted, the state and federal ozone standards were exceeded on numerous occasions during the past 5 years. The state and federal standards for suspended particulates (i.e., PM_{10} and $PM_{2.5}$) have also been exceeded on various occasions during the past 5 years.

Attainment Status

Under the CCAA, the CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data do not support either an attainment or nonattainment status. The CCAA divides districts into

Figure 5
South Coast Air Basin Monitoring Stations – Los Angeles County

Source: ARB 2010

Table 11
Summary of Ambient Air Quality Monitoring Data [1,2]

	2005	2006	2007	2008	2009
Ozone					
Maximum concentration (1-hour/8-hour average)	0.138/0.113	0.158/0.109	0.129/0.105	0.123/0.103	0.135/0.100
Number of days state 1-hour standard exceeded	30	34	21	23	15
Number of days state/national 8-hour standard exceeded	43/26	55/34	43/28	39/25	31/19
Carbon Monoxide (CO)					
Maximum concentration (1-hour/8-hour average) [4]	5.1/3.46	4.8/3.48	3.7/2.76	3.4/2.88	NA/3.31
Number of days state 1-hour/8-hour standard exceeded	0/0	0/0	0/0	0/0	0/0
Number of days national 1-hour/8-hour standard exceeded	0/0	0/0	0/0	0/0	0/0
Nitrogen Dioxide (NO2)					
Maximum concentration (1-hour average)	0.086	0.073	0.081	0.091	0.070
Annual average	0.020	0.018	0.018	0.018	0.017
Number of days state standard exceeded	0	0	0	0	0
Suspended Particulate Matter (PM10)					
Maximum concentration (state/national)	90/92	69/71	107.0/109.0	61.0/66.0	76.0/80.0
Number of days state standard exceeded (measured/calculated[3]	5/29.6	10/NA	5/NA	5/ NA	10/60.9
Number of days national standard exceeded (measured/calculated[3]	0/0	0/0	0/0	0/0	0/0
Suspended Particulate Matter (PM2.5)					
Maximum concentration (state/national)	39.5/39.5	44.0/44.0	43.3/43.3	50.5/50.5	54.4/39.9
Number of days national standard exceeded (measured/calculated[3]	4/ NA	1/ NA	1/NA	2/6.6	1/3.1

1. Based on ambient concentrations obtained from the Reseda ambient air quality monitoring station. PM10 monitoring data obtained from the Burbank-W. Palm Avenue monitoring station.
2. Reported state and national monitoring values and statistics may differ for various reasons, including the monitor used, monitor location, and ambient/site conditions. Where variations in reported concentration values were noted, the higher value was identified in this table.
3. Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every six days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.
4. One-hour carbon monoxide concentrations obtained from the US EPA's AirData website for Reseda ambient air quality monitoring station.
ppm = parts per million by volume; µg/m3 = micrograms per cubic meter; NA = Insufficient or no data available to determine value
Sources: California Air Resources Board. Accessed: June 20, 2011 iADAM Air Quality Data Statistics. Top 4 Summary. Website url: http://www.arb.ca.gov/ adam topfour/topfourdisplay.php. US Environmental Protection Agency. Accessed: June 20, 2011. AirData. Monitor Values Report. Website url: 2011(a)http://iaspub.epa.gov/airsdata/adaqs.monvals?geotype=st&geocode=CA&geoinfo=st%7ECA%7ECalifornia&pol=CO&year=2008+2007+2006+2005&fld=address&fld=city&fld=county&fld=stabbr&rpp=25.

moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The US EPA designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used. The US EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, US EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

The state and national attainment status designations pertaining to the SCAB are summarized in **Table 12**. The SCAB is currently designated as a nonattainment area with respect to the state and federal ozone, PM_{10}, and $PM_{2.5}$ standards. The SCAB is also designated nonattainment for the state NO_2 standard. In addition, based on monitoring data obtained near a lead acid battery reclamation facility, Los Angeles County is currently designated nonattainment for the state and federal lead standards. With the exception of Los Angeles County, the remainder of the SCAB is designated attainment for the lead standards. The Basin is designated attainment or unclassified for the remaining State and Federal standards (CARB 2011).

Table 12
State and Federal Ambient Air Quality Attainment Designations
South Coast Air Basin

Criteria Pollutant	State Designation	Federal Designation
Ozone	N	N (Extreme)
$PM_{2.5}$	N	N
PM_{10}	N	N (Serious)*
Carbon Monoxide	A	A/M
Nitrogen Dioxide	N	A/M
Sulfur Dioxide	A	A
Lead**	N	N
Sulfates	A	
Hydrogen Sulfide	U	
Visibility Reducing Particles	U	

N = Nonattainment
A = Attainment
U = Unclassified
U/A = Unclassifiable/Attainment
M = Maintenance
** Federal PM10 attainment redesignation request submitted.*
***State nonattainment designation for lead is based on monitoring data from a new site near a lead acid battery reclamation facility in the Los Angeles County portion of the SCAB, effective December 31, 2010; remainder of the SCAB is Attainment.*
Source: SCAQMD 2011(a), SCAG September 2010. 2011 Federal Transportation Improvement Program; US EPA. December 8, 2010. Electronic Code of Federal Regulations. website url: http://ecfr.gpoaccess.gov/cgi/t/text/text-id?c=ecfr&rgn=div8&view=text&node=40:17.0.1.1.1.3.1.6&idno=40.

Sensitive Receptors

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term sensitive receptors refer to specific population groups, as well as the land uses where individuals would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses would include facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Residential dwellings, schools, parks, playgrounds, childcare centers, convalescent homes, and hospitals are examples of sensitive land uses.

Land uses in the immediate area of the interchange consist predominantly of commercial land uses, including business parks, light industrial, retail, and gas stations. Sensitive land uses in the vicinity of the proposed project include residential dwellings located along Agoura Road south of the interchange. Several multi-family residential properties, Agoura Park, and Agoura High School are located northwest of the interchange. A Montessori School and learning center is located approximately 500 feet northwest of the project area, near the intersection of Driver Avenue and Chesebro Road. Land uses located near the project area are depicted in **Figure 4**.

Project Analyses

Long-term Operational Emissions

Long-term operational emissions associated with the proposed project would be associated with the operation of motor vehicles on area roadways and the US101 on-/off-ramps. Implementation of the proposed project would not result in a change in vehicle operations on the mainline of US 101.

Motor vehicle operational emissions were quantified using EMFAC2007 emission factors for existing (year 2010), opening year 2015, and design year 2035 conditions based on data obtained from the traffic analysis prepared for the proposed project. The modeling conducted includes running exhaust emissions, idle emissions, and PM emissions associated with brake and tire wear, as well as, reentrained road dust. Existing average vehicle speeds used in the analysis ranged from approximately 8 to 16 miles per hour (mph) along local roadways to approximately 58 mph on US 101 ramps. Ramp speeds were projected to decrease slightly in future years, ranging from approximately 56 to 57 mph in year 2015 and from approximately 53 to 55 mph in year 2035. In addition to variations in vehicle speeds, the emissions calculations also took into account average-daily traffic volumes for roadway segments located within the project area, including the US 101 ramps, Palo Comado Canyon Road, and Chesebro Road, and distance of vehicle travel. Based on total daily trips and distances of vehicle travel, total vehicle miles traveled within the project study area was calculated to be approximately 5,391.4 miles for existing conditions, 5,716.9 miles for opening year 2015, and approximately 7,097.8 miles for design year 2035 conditions. In addition to running-exhaust emissions, the modeling analysis included evaluation of idle-exhaust emissions, based on the calculated changes in peak-hour vehicle delay at ramp intersections attributable to the proposed project. In comparison to No-Build Alternative the Build Alternative would result in overall reductions in peak-hour vehicle idling at ramp intersections for both opening year 2015 and design year 2035 conditions. When these reductions in vehicle idling time are multiplied by the number of peak-hour vehicles,

combined reductions in vehicle idling time attributable to the proposed project would total approximately 19 idle-hours/day in opening year 2015 and approximately 124 idle-hours/day in design year 2035 conditions. Road dust emissions were quantified based on the calculated VMT for existing, opening year 2015 and design year 2035 conditions in accordance with US EPA AP-42 methodology assuming a silt loading factor of 0.037 grams per square meter (g/m^2)[2] and an average vehicle weight of 2.7 tons[3]. Modeling assumptions and result are included in **Appendix D**. Estimated daily and annual operational emissions are summarized in **Table 13**.

It is important to note that for CEQA analyses, project-generated emissions are compared to baseline conditions, which is typically defined as existing conditions; whereas, for NEPA analysis purposes, the analysis is based on a comparison of the no-build and build alternative scenarios. Due largely to projected increases in future traffic volumes and corresponding increases in emissions associated with tire/brake wear, slight increases in future year emissions of PM_{10} and $PM_{2.5}$, in comparison to existing conditions, were predicted for both the No-Build Alternative and the Build Alternative. However, as noted in **Table 5**, no substantial change in particulate emissions were noted between the No-Build Alternative and the Build Alternative for both opening year 2015 and design year 2035 conditions.

In comparison to existing conditions, both the No-Build Alternative and the Build Alternative would result in reductions of both daily and annual emissions of CO, ROG, and NOX for opening year 2015 conditions. As noted in **Table 13** and in comparison to existing conditions, the Build Alternative would result in slightly higher overall emission reductions under both opening year 2015 and design year 2035 conditions, when compared to No-Build Alternative conditions. Emissions reductions attributable to the Build Alternative would be predominantly associated with reductions in vehicle delay at intersections within the project area during the peak commute hours.

Regional Conformity

The proposed project is identified as Project ID #LA0G230 and was included in the regional emissions analysis conducted by the South Coast Association of Governments (SCAG) for the conforming *2008 Regional Transportation Plan (RTP), Amendment #4*, and in the *Regional Transportation Improvement Program (RTIP), Amendment #08-34*. SCAG adopted the 2008 RTP Amendment #4 and the corresponding conformity determinations on November 4, 2010. Federal approval of the RTP Amendment #4 conformity determination was issued on December 8, 2010. The proposed project is included in the recent *2011 Federal Transportation Improvement Program, which was adopted by SCAG on September 2, 2010*. Federal approval of the 2011 FTIP was issued on December 14, 2010. As described in the RTP, RTIP, and FTIP, the proposed project includes "widening of the bridge from 2 lanes to 4 lanes, construction of sidewalks and bike lanes, modification of on/off ramps, and modification of various intersections."

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[2] *Based on recently updated US EPA AP-42 methodology for vehicle travel on paved roads (EPA AP42, Miscellaneous Sources. Chapter 13.2.1, Paved Roads. January 2011)*

[3] *Based on average vehicle weight for the South Coast portion of Los Angeles County derived from CARB Emission Inventory Methodology, Section 7.9 Entrained Paved Road Dust Paved Road Travel, July 1997.*

Table 13
Estimated Operational Emissions of Criteria Air Pollutants

Scenario	Emissions									
	Pounds/Day					Tons/Year				
	CO	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO	ROG	NO_X	PM_{10}	$PM_{2.5}$
Existing Year 2010	35.39	3.24	11.49	2.52	1.09	6.46	0.59	2.10	0.46	0.20
Opening Year 2015										
No Build Alternative	33.33	2.43	8.61	2.62	1.10	6.08	0.44	1.57	0.48	0.20
Change - No-Build Alternative vs. Existing Conditions:	-2.06	-0.81	-2.88	0.1	0.01	-0.38	-0.15	-0.53	0.02	0
Build Alternative	33.12	2.40	8.41	2.62	1.10	6.04	0.44	1.54	0.48	0.20
Change - Build Alternative vs. Existing Conditions:	-2.27	-0.84	-3.08	0.1	0.01	-0.42	-0.15	-0.56	0.02	0
Change - Build Alternative vs. No-Build Alternative:	-0.21	-0.03	-0.2	0	0	-0.04	0	-0.03	0	0
Design Year 2035										
No Build Alternative	21.71	7.33	7.57	3.39	1.51	3.96	1.34	1.38	0.62	0.28
Change – No-Build Alternative vs. Existing Conditions:	-13.68	4.09	-3.92	0.87	0.42	-2.5	0.75	-0.72	0.16	0.08
Build Alternative	20.21	7.09	6.04	3.39	1.50	3.69	1.29	1.10	0.62	0.27
Change - Build Alternative vs. Existing Conditions:	-15.18	3.85	-5.45	0.87	0.41	-2.77	0.7	-1.0	0.16	0.07
Change - Build Alternative vs. No-Build Alternative:	-1.5	-0.24	-1.53	0	-0.01	-0.27	-0.05	-0.28	0	-0.01

Emissions modeling was conducted based on EMFAC2007 emission factors obtained for Los Angeles County and data obtained from the US 101/Palo Comado Canyon Road PA/ED, Traffic Impact Analysis (2011), prepared by Kimley-Horn and Associates, Inc. The modeling conducted includes running exhaust emissions, idle emissions, and PM emissions associated with brake and tire wear, as well as, reentrained road dust. Road dust emissions were quantified using the US EPA AP-42 methodology for vehicle travel on paved roads (US EPA AP42, Miscellaneous Sources. Chapter 13.2.1, Paved Roads. January 2011(b).
*Refer to **Appendix D** for modeling assumptions and results.*

The proposed project's design concept and scope have not changed significantly from what was analyzed in the RTP and RTIP. This analysis found that the plan and, therefore, the individual projects contained in the plan, are conforming projects, and will have air quality impacts consistent with those identified in the SIPs for achieving the NAAQS. The U.S. Department of Transportation determined the RTP Amendment #4 and RTIP Amendment #08-34 to conform to the SIP on May 6, 2010 (SCAG 2010). The revised proposed project was included in the recently approved *2011 FTIP, Amendment 11-06*. The 2011 FTIP, Amendment 11-06 was found to be consistent with the 2008 RTP, as currently amended, and Federal approval of *2011 FTIP Amendment 11-06* was issued on May 12, 2011. Relevant excerpts from these plans and the applicable conformity determination is included in **Appendix B** of this report.

Project-Level Conformity

The project-level localized air quality impacts associated with mobile-source CO and PM are evaluated, as follows:

Carbon Monoxide (CO) Analysis

The *Transportation Project-Level Carbon Monoxide Protocol, UCD-ITS-97-21* (CO Protocol), University of California, Davis, December 1997, provides procedures and guidelines for use by agencies to evaluate the potential local level CO impacts of a transportation project. The CO Protocol provides decision flow charts designed to assist the lead agency in evaluating requirements that specifically apply to a proposed action. An evaluation of each flow chart inquiry as they pertain to the proposed project is discussed, as follows (refer to highlighted decision path in **Figure 6**):

Section 3

3.1.1. Is the proposed project exempt from all emission analyses?

No. The proposed project is not exempt from all emission analyses as it does not meet the criteria for projects exempt from all emissions analyses listed in the CO Protocol. In addition, the air quality analyses of projects included in the RTP and RTIP do not include the analyses of local CO impacts, which therefore must be addressed on a project level.

3.1.2. Is the proposed project exempt from regional emission analyses?

No. The proposed project is not exempt from regional emission analyses as it does not meet the criteria for projects exempt from regional emission analyses listed in the CO Protocol.

3.1.3. Is the proposed project locally defined as regionally significant?

Yes. Regionally significant projects are defined in 40 CFR 93.101 as projects that would normally be included in the modeling of a metropolitan area's transportation network, which is the case for this project (Caltrans 2006).

3.1.4. Is the project in a federal attainment area?

No, The proposed project is located within Los Angeles County, which is within the SCAB. The SCAB is currently designated as a nonattainment area with respect to the federal ozone, PM_{10}, and $PM_{2.5}$ standards. In addition, based on monitoring data obtained near a lead acid battery reclamation facility, Los Angeles County is currently designated nonattainment for the federal lead standard.

Figure 6
Project-Level CO Conformity Decision Flow Chart

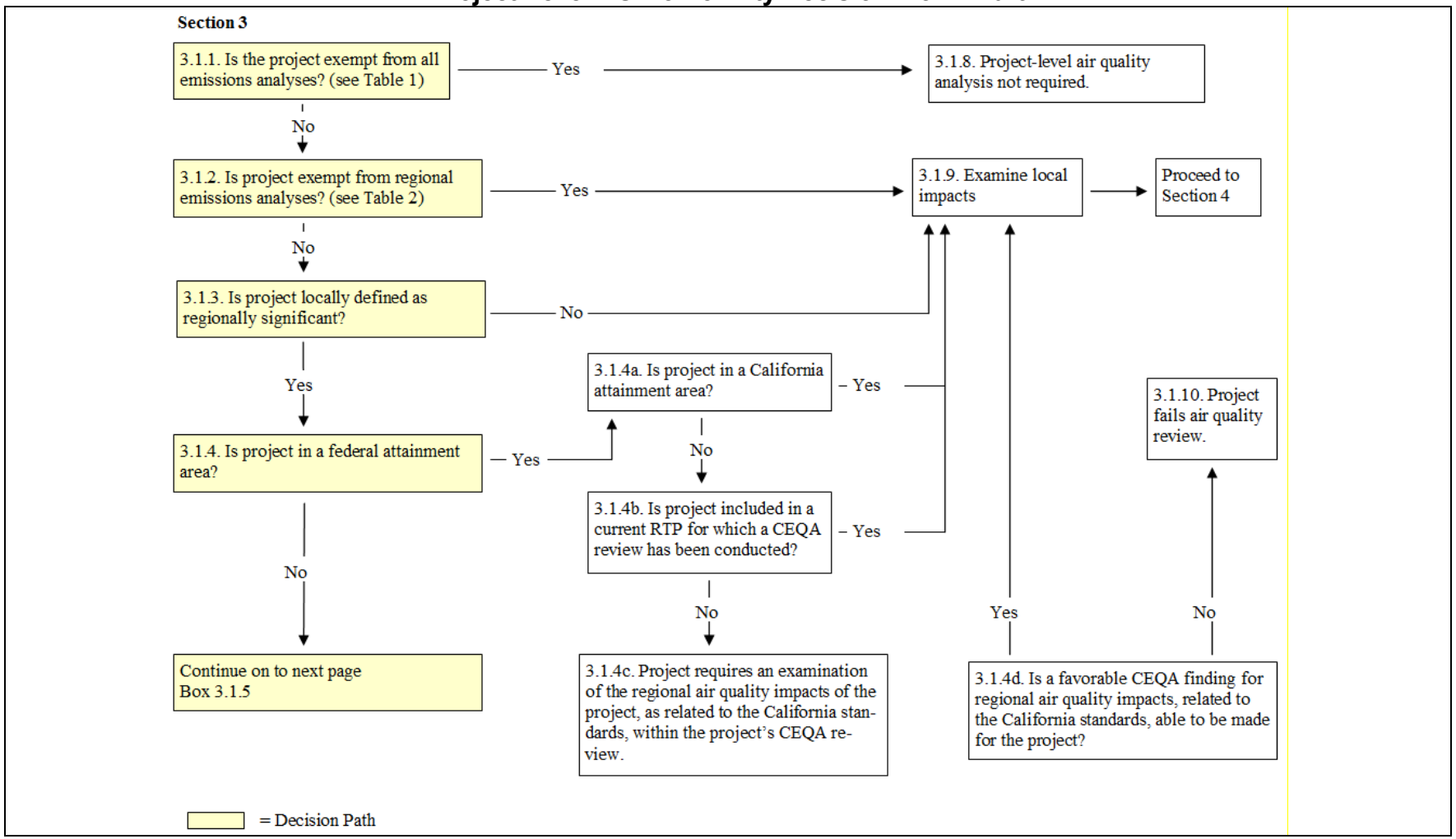


Figure 6
Project-Level CO Conformity Decision Flow Chart (cont.)

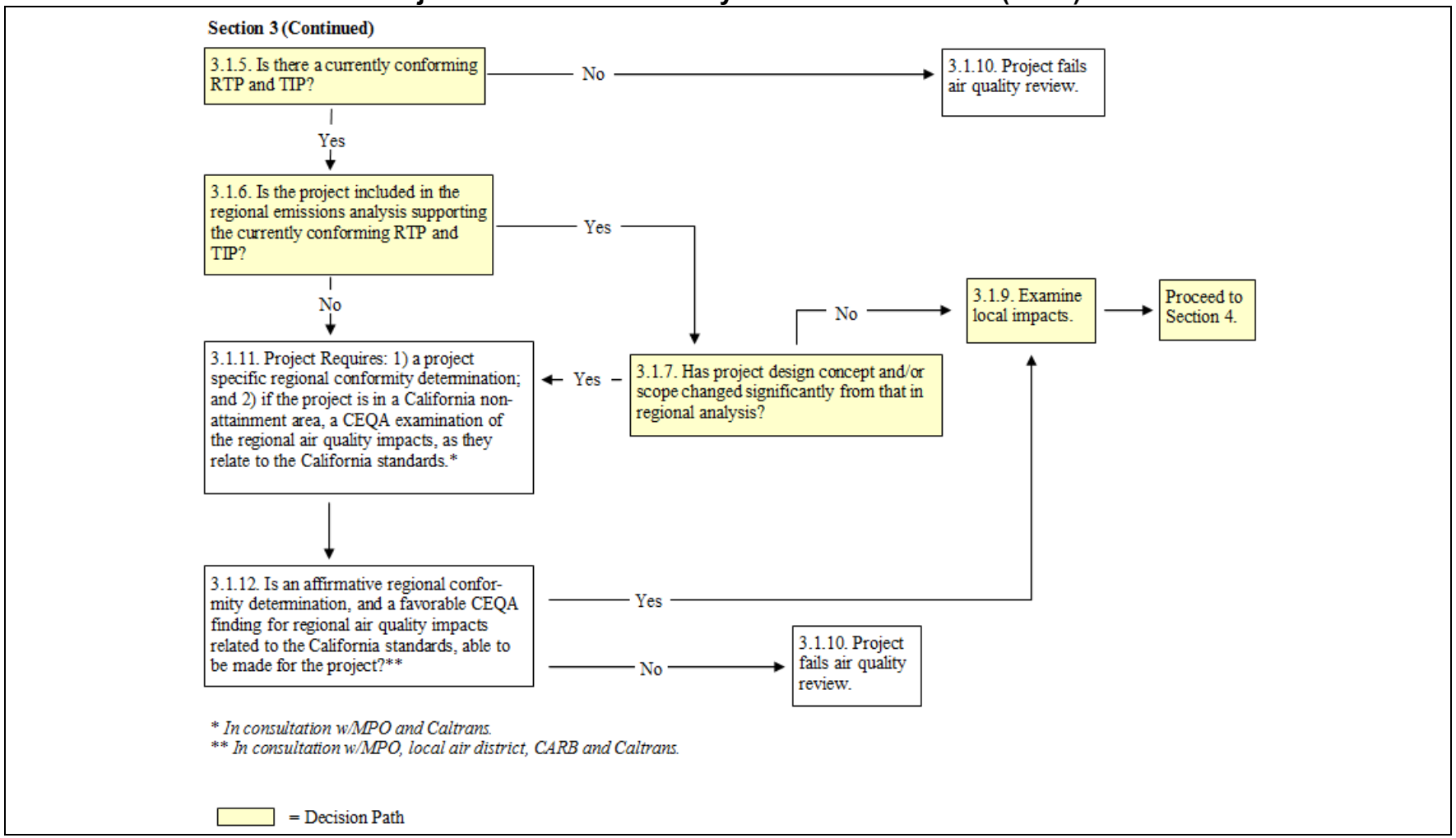


Figure 6
Project-Level CO Conformity Decision Flow Chart (cont.)

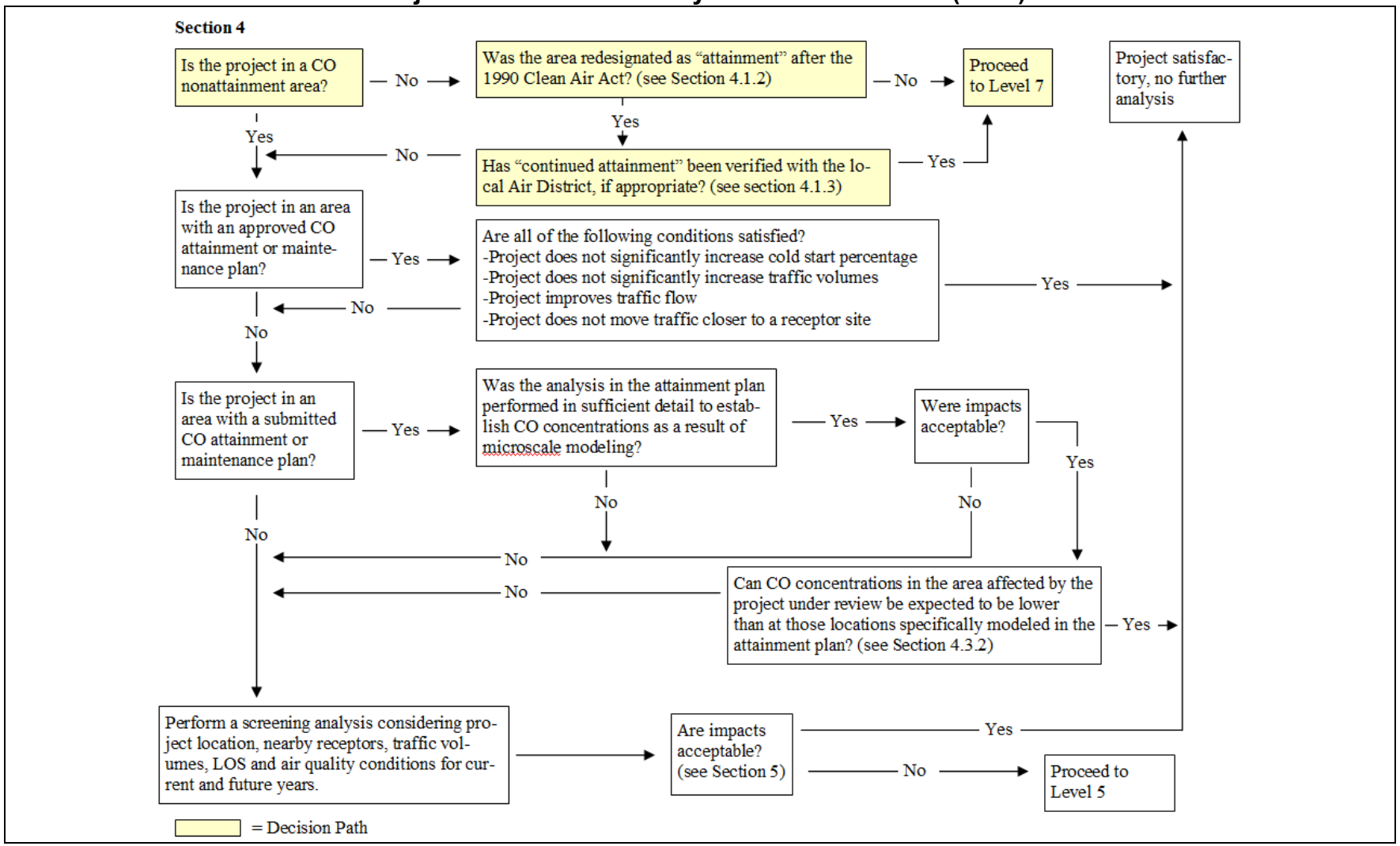
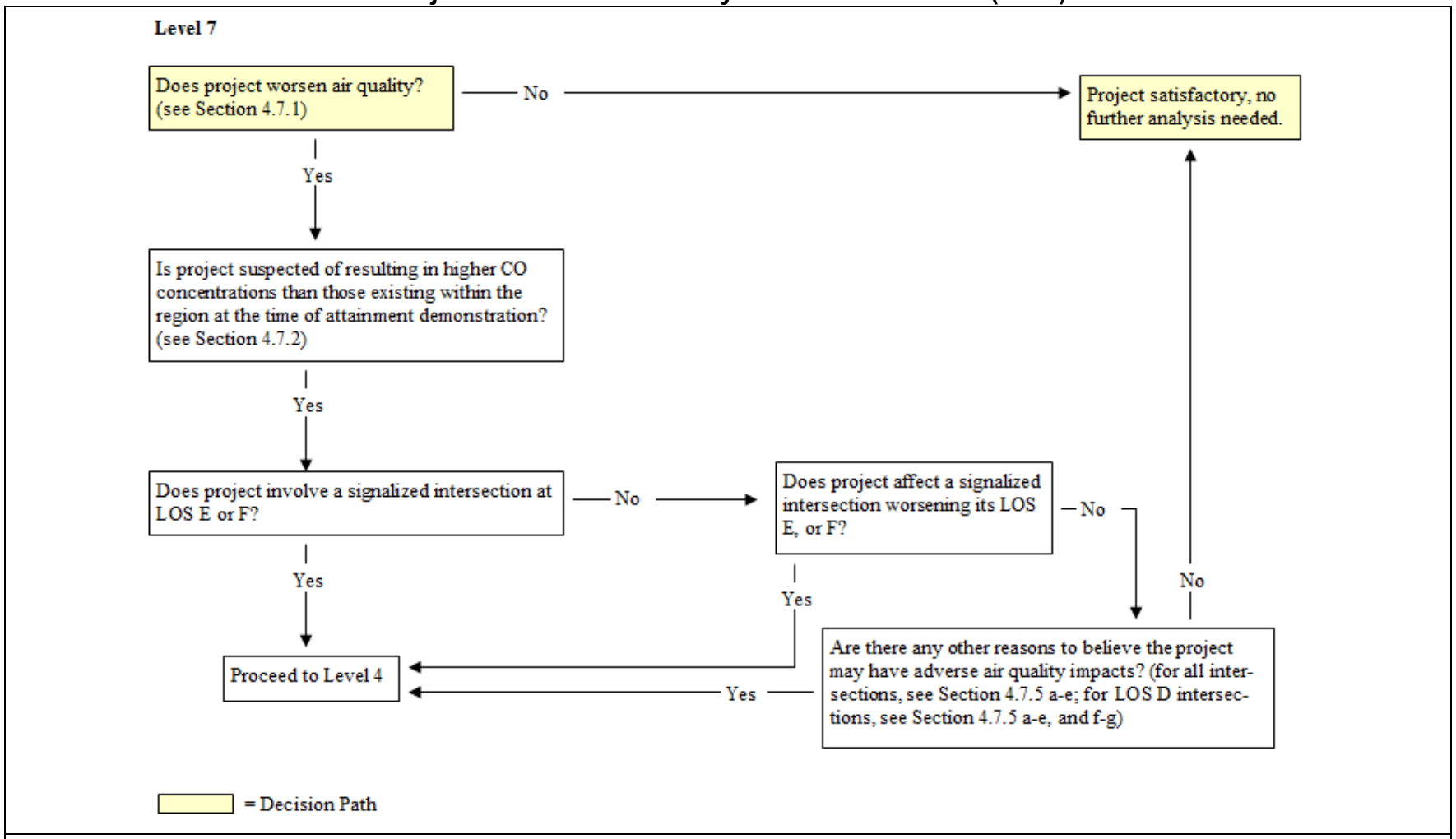


Figure 6
Project-Level CO Conformity Decision Flow Chart (cont.)



Source: University of California, Davis. December 1997. Transportation Project-Level Carbon Monoxide Protocol, UCD-ITS-97-21.

3.1.5. Is there a currently conforming RTP and TIP?

Yes. SCAG adopted the 2008 RTP Amendment #4 on November 4, 2010 and made the corresponding conformity determinations via Resolution 10-524-01. Federal approval of the RTP Amendment #4 conformity determination was issued on December 8, 2010. The proposed project is included in the recent *2011 Federal Transportation Improvement Program, which was adopted by SCAG on September 2, 2010*. Federal approval of the 2011 FTIP was issued on December 14, 2010.

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

Yes. As discussed earlier in this report, the proposed project is identified as Project ID #LA0G230 in the recently approved FTIP and was included in the regional emissions analysis conducted by the South Coast Association of Governments (SCAG) for the conforming *2008 RTP, Amendment #4, and the recently adopted 2011 FTIP*.

3.1.7. Has the project design concept and/or scope changed significantly from that in regional analysis?

As described in the RTP, RTIP, and FTIP, the proposed project includes "widening of the bridge from 2 lanes to 4 lanes, construction of sidewalks and bike lanes, modification of on/off ramps, and modification of various intersections." The proposed project's design concept and scope have not changed significantly from what was analyzed in the RTP and RTIP.

Section 4

Level 1. Is the project in a CO nonattainment area?

No.

If No, was the area redesignated as "attainment" after the 1990 Clean Air Act?

Yes. In March 2005, the SCAQMD adopted a CO Redesignation Request and Maintenance Plan. The *2005 CO Maintenance Plan* meets the requirements of the CAA by demonstrating that the SCAB has attained the CO standard, meets the criteria for applying US EPA's Clean Data Policy, shows continuing CO emissions reductions, includes contingency measures, and shows that federal CO standards will be maintained through at least 2015. In February 2006, the CARB adopted the *2005 South Coast CO Redesignation and Maintenance Plan* as a SIP revision and submitted the SIP revisions to the US EPA for approval (CARB, February 24, 2006. Executive Order G-125-332). The SCAB was designated as "attainment" for CO effective June 11, 2007.

If Yes, has "continued attainment" been verified with the local Air District, if appropriate?

Yes. In accordance with US EPA guidance, the SCAQMD periodically reviews the assumptions and data for attainment inventory and demonstration. The SCAQMD has reevaluated the 2005 *CO Maintenance Plan* as part of the AQMP process in 2007 and 2010. In accordance with US EPA guidance, a revision to the CO Maintenance Plan for the subsequent ten year maintenance planning period will be submitted to the US EPA in 2013. In addition the verification actions identified above, the SCAQMD also analyzes the CO air quality data collected on a daily basis to ensure continued maintenance of the CO standards (SCAQMD 2005).

If *Yes*, *Proceed to Level 7*.

Level 7. Does project worsen air quality (based on the following criteria)?

- The project significantly increases the percentage of vehicles operating in cold start mode. Increasing the number of vehicles operating in cold start mode by as little as 2 percent should be considered potentially significant.

  No. The proposed project would not result in a change in traffic operations, nor would the proposed project result in the development of new land uses could potentially change the percentage of vehicles operating in cold start mode.

- The project significantly increases traffic volumes, increases in traffic volumes in excess of 5 percent should be considered potentially significant. Increasing the traffic volume by less than 5 percent may still be potentially significant if there is also a reduction in average speeds.

  No. As noted in **Table 15**, no change in peak-hour traffic volumes would occur along primarily affected roadway segments as a result of the proposed project. As a result, implementation of the proposed project would not significantly increase traffic volumes.

- The project worsens traffic flow. For uninterrupted roadway segments, a reduction in average speeds (within a range of 3 to 50 mph) should be regarded as worsening traffic flow. For intersection segments, a reduction in average speed or an increase in average delay should be considered as worsening traffic flow.

  No. Based on the traffic analysis prepared for the proposed project, implementation of the proposed project would not result in a change in vehicle speeds on the US 101 ramps. In comparison to No-Build Alternative conditions, no changes in average vehicle speeds are projected to occur along Palo Comado Canyon Road or Chesebro Road. Average vehicle speeds for primarily affected roadway segments are summarized in **Table 14**.

Table 14
Roadway Segment Average Speeds

Segment	Mean Speed (mph)				
	Existing (2010)	Opening Year (2015)		Buildout Year (2035)	
		No Build	Build	No Build	Build
Palo Comado Canyon Rd.	15.5	14.0	14.0	8.0	8.0
Chesebro Rd.	15.0	14.5	14.5	10.5	10.5
US 101 NB On-Ramp	57.6	57.2	57.2	55.0	55.0
US 101 NB Off-Ramp	57.3	56.8	56.8	54.3	54.3
US 101 SB On-Ramp	56.9	56.4	56.4	53.3	53.3
US 101 SB Off-Ramp	57.7	57.3	57.3	55.2	55.2

Source: Kimley-Horn and Associates, Inc. Supplemental Analysis, US 101/Palo Comado Canyon Road PA/ED, Traffic Forecasts for Air Quality Analysis (2011).

In addition, the proposed project does not involve study intersections that are currently signalized. The proposed build alternative would result in the signalization of the Palo Comado/US101 northbound ramps. With signalization, vehicle delay at this intersection is projected to improve. Levels of service at this intersection would improve from a No-Build level of service (LOS) F, to an acceptable level of service (i.e., LOS A/B). Intersection controls and LOS for opening year 2015 and design year 2035 conditions are summarized in **Table 16** and **Table 17**, respectively).

Table 15
Peak-hour Traffic Volumes

Roadway Segment	Opening Year 2015				Design Year 2035			
	No-Build		Build		No-Build		Build	
	AM	PM	AM	PM	AM	PM	AM	PM
Palo Comado Canyon Rd., North of Chesebro Rd.	1,111	948	1,111	948	1,383	1,186	1,383	1,186
Palo Comado Canyon Rd., South of US 101 NB Ramps	1,110	929	1,110	929	1,399	1079	1,399	1079
Palo Comado Canyon Rd., North of US 101 NB Ramps	1464	1,286	1464	1,286	1,706	1,519	1,706	1,519
Palo Comado Canyon Rd., South of Canwood St./Chesebro Rd.	1,421	1,218	1,421	1,218	1,455	1,550	1,455	1,550
Canwood St., West of Palo Comado Canyon Rd.	338	389	338	389	473	622	473	622
Chesebro Rd., East of Palo Comado Canyon Rd.	106	108	106	108	122	124	122	124
Driver Ave., North of Canwood St/Chesebro Rd.	1,103	841	1,103	841	1,269	980	1,269	980
Chesebro Rd., West of Palo Comado Canyon Rd.	806	590	806	590	987	726	987	726
US 101, NB Offramp	661	805	661	805	818	939	818	939
US 101, NB Onramp	201	306	201	306	241	363	241	363
US 101, SB Offramp	378	212	378	212	433	279	433	279

Note: ADTs for the No-Build and Build Alternatives remain the same.
Source: Kimley-Horn and Associates, Inc. Supplemental Analysis, US 101/Palo Comado Canyon Road PA/ED, Traffic Forecasts for Air Quality Analysis (2011).

Table 16
Summary of Intersection Level of Service
Opening Year 2015 Conditions

Intersection	Intersection Control		No Build				Build			
			AM		PM		AM		PM	
	Existing/ No Build	Build	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1-Driver Ave. at Chesebro Rd.	All-way Stop	All-way Stop	61.2	F	44.9	E	61.2	F	44.9	E
2-Palo Comado Canyon Rd. at US 101 NB Ramps	Two-way Stop (stop sign on ramp)	Traffic Signal	52.3	F	69.1	F	7.6	A	8.0	A
3-Dorothy Dr. at US 101 SB Ramps	All-way Stop	All-way Stop	22.1	C	13.4	B	22.1	C	13.4	B
4-Palo Comado Canyon Rd. at Chesebro Rd.	Two-way Stop (stop signs on Chesebro)	Two-way Stop (stop signs on Chesebro)	19.0	C	19.8	C	19.1	C	19.8	C
5-Agoura Rd. at Chesebro Rd.	All-way Stop	All-way Stop	9.3	A	12.0	B	9.3	A	12.0	B

*Source: Kimley-Horn and Associates, Inc. Supplemental Analysis, US 101/Palo Comado Canyon Road PA/ED, Traffic Forecasts for Air Quality Analysis (2011). Refer to **Figure 3** for intersection locations.*

Table 17
Summary of Intersection Level of Service
Opening Year 2035 Conditions

Intersection	Intersection Control		LOS-No Build				LOS-Build			
			AM		PM		AM		PM	
	Existing/ No Build	Build	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1-Driver Ave. at Chesebro Rd.	All-way Stop	All-way Stop	128.1	F	99.3	F	128.1	F	99.3	F
2-Palo Comado Canyon Rd. at US 101 NB Ramps	Two-way Stop (stop sign on ramp)	Traffic Signal	290.3	F	105.4	F	9.8	A	11.5	B
3-Dorothy Dr. at US 101 SB Ramps	All-way Stop	All-way Stop	41.7	E	26.3	D	26.0	D	24.3	C
4-Palo Comado Canyon Rd. at Chesebro Rd.	Two-way Stop (stop signs on Chesebro)	Two-way Stop (stop signs on Chesebro)	63.2	F	36.0	E	63.2	F	36.0	E
5-Agoura Rd. at Chesebro Rd.	All-way Stop	All-way Stop	13.2	B	26.3	D	13.2	B	26.3	D

*Source: Kimley-Horn and Associates, Inc. Supplemental Analysis, US 101/Palo Comado Canyon Road PA/ED, Traffic Forecasts for Air Quality Analysis (2011). Refer to **Figure 3** for intersection locations.*

If No, Are there any other reasons to believe the project may have adverse air quality impacts?

No. The proposed project is located in an attainment area for federal and state CO standards, and the existing CO concentrations in the project area are substantially below the ambient air quality standards. Additionally, the proposed project would result in overall decreases in vehicle congestion and delay, would not affect the percentages of vehicles operating in cold start mode, and would not affect vehicle fleet percentages on area roadways. For these reasons, further analysis of localized mobile-source CO concentrations is not required.

Particulate Matter Analysis

Qualitative PM hot spot analysis is required under the US EPA Transportation Conformity rule for Projects of Air Quality Concern (POAQC), as described in the US EPA's Final Rule of March 10, 2006. Projects that are not POAQC do not require detailed PM hot-spot analysis.

According to the final rule, the following types of projects are considered POAQC:

1) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles (significant number is defined as greater than 125,000 Annual Average Daily Traffic (AADT), and 8 percent or more of such AADT is diesel truck traffic), or in practice 10,000 truck AADT or more regardless of total AADT; significant increase is defined in practice as a 10 percent increase in heavy duty truck traffic).
2) Projects affecting intersections that are at an LOS D, E, or F, with a significant number of diesel vehicles, or that that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.
3) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.
4) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location.
5) Projects in or affecting locations, areas, or categories of sites which are identified in the $PM_{2.5}$ or PM_{10} implementation plan or implementation plan submission, as appropriate, as sites of possible violation.

The proposed project includes widening of the existing Palo Comado Canyon Road/US 101 bridge from two to four lanes, construction of sidewalks, on/off-ramp modifications, and modification of nearby intersections. Estimated average daily truck trips on US 101 and Palo Comado Canyon Road for opening year (2015) and design year (2035) conditions are not projected to exceed 10,000. Traffic volumes are summarized in **Table 18**. The proposed project would not include improvements to the mainline U.S. 101 and would not affect intersections having a significant number of diesel vehicles. As depicted in **Tables 16** and **17**, the proposed project would not result in decreased LOS at any intersections that would be considered unacceptable. The proposed project does not include, nor would it affect, bus or rail terminals or transfer points. The proposed project is an operational improvement that would help improve local traffic circulation and have a beneficial impact on air quality by relieving traffic congestion along Palo Comado Canyon Road. As noted in **Table 13** and in comparison to the no-build alternative, implementation of the proposed project would not

result in an increase in PM emissions for opening year 2015 conditions and would result in overall reductions in PM emissions for design year 2035 conditions.

Table 18
Average Annual Daily Traffic Volumes

Roadway Segment	Average Annual Daily Traffic Opening Year 2015		Average Annual Daily Traffic Design Year 2035	
	Total (All Vehicle Classes)	Truck	Total (All Vehicle Classes)	Truck
Palo Comado Canyon Road	11,400	228	14,820	297
US 101, West of Palo Comado Canyon Road	177,800	7,112	206,500	8,260
US 101, East of Palo Comado Canyon Road	183,000	7,320	212,500	8,500

Note: ADTs for the No-Build and Build Alternatives remain the same.
Source: Kimley-Horn and Associates, Inc. Supplemental Analysis, US 101/Palo Comado Canyon Road PA/ED, Traffic Forecasts for Air Quality Analysis (2011).

The proposed project was submitted to the January 25, 2011 Transportation Conformity Working Group (TCWG) meeting. The TCWG determined that the proposed project is not considered a POAQC for PM because it does not meet the definition of a POAQC as defined in US EPA's Transportation Conformity Guidance. A PM hot-spot analysis is not required. The project interagency review form submitted to the TCWG and the TCWG's determination is included as **Appendix A** to this report.

Mobile Source Air Toxics

The following discussion is based on the *FHWA Memorandum, Subject: INFORMATION: Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA*, dated September 30,2009. The purpose of the guidance is to advise when and how to analyze MSATs in the National Environmental Policy Act (NEPA) process for highways. This guidance is interim, given that MSAT science is still evolving. As the science progresses, FHWA will update the guidance.

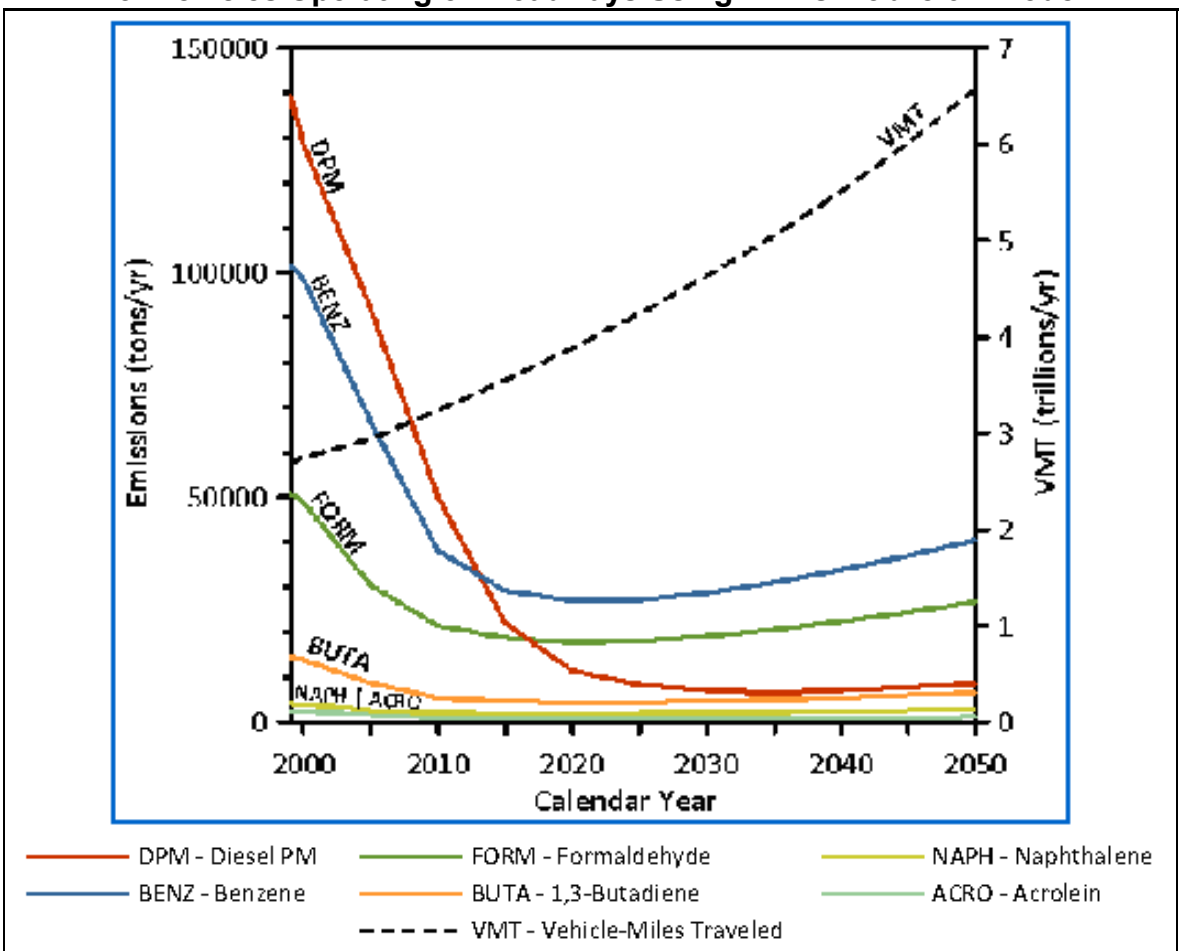
MSATs are a subset of the 188 air toxics defined by the FCAA. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from 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.

Controlling air toxic emissions became a national priority with the passage of the FCAA Amendments (FCAAA) of 1990, whereby Congress mandated that the US EPA regulate 188 air toxics, also known as hazardous air pollutants. The US EPA has assessed this expansive list in their latest rule on the Control of HAPs from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/ncea/iris/index.html). In addition, the US 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) (http://www.epa.gov/ttn/atw/nata1999/). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), 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 (FHWA 2009).

The 2007 US EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using US EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles travelled, 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 7** (FHWA 2009).

Figure 7
National MSAT Emission Trends 1999-2050
For Vehicles Operating on Roadways Using EPA's Mobile 6.2 Model



Note: (1) Annual emissions of polycyclic organic matter are projected to be 561 tons/year for 1999, decreasing to 373 tons/year 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: FHWA 2009.

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

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. In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The US EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the FCAA and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The US EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects". Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations or in the future as vehicle emissions substantially decrease. The FHWA, US EPA, the HEI, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this emerging field.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. The results produced by the US EPA's MOBILE6.2 model, the California EPA's EMFAC2007 model, and the US EPA's DraftMOVES2009 model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model are that MOBILE6.2 significantly underestimates diesel particulate matter (PM) emissions and significantly overestimates benzene emissions.

Regarding air dispersion modeling, an extensive evaluation of US EPA's guideline CAL3QHC model was conducted in a National Cooperative Research Program (NCHRP) study, which documents poor model performance at ten sites across the country - three where intensive monitoring was conducted plus an additional seven with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections.

The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections. Such poor model performance is less difficult to manage for demonstrating compliance with NAAQS for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI. As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The US EPA and the HEI have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the US EPA, as provided by the FCAA, to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires the US EPA to determine a "safe" or "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the US Court of Appeals for the District of Columbia Circuit upheld the US EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Analysis of MSATs in NEPA Documents

The *FHWA's Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA* (September 30, 2009) provides guidance on how MSATs should be addressed. FHWA has developed a tier approach for analyzing MSATs in NEPA documents. Depending on the specific project circumstances, FHWA has identified three categories of analysis (FHWA 2009):

1. No analysis for projects with no potential for meaningful MSAT effects. This category is limited to projects that:

- qualify as a categorical exclusion under 23 CFR 771.117(c);
- are exempt under the Clean Air Act conformity rule under 40 CFR 93.126; or
- have no meaningful impacts on traffic volumes or vehicle mix.

2. Qualitative analysis for projects with low potential MSAT effects. Projects that do not meet Category (1) or (3) criteria should be included in this category.
3. Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects. For a project to be of the magnitude to have a higher potential for MSAT effects, a project must:
    - create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location; or
    - create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000, or greater, by the design year; and also:
    - proposed to be located in proximity to populated areas.

As discussed earlier in this report, the purpose of the proposed project is to reduce traffic congestion along Palo Comado Canyon Road. The proposed project is not projected to result in changes in traffic volumes (refer to **Table 15** and **Table 18**), or meaningful changes in vehicle speeds along roadway segments within the study area (**Table 14**). As noted in **Tables 19** and **20**, the proposed project would result in overall reductions in vehicle delay within the project study area. The proposed project would not affect vehicle mix or vehicle miles traveled relative to the no-build alternative. Furthermore, it is important to note that the estimated maximum design year AADT for Palo Comado Canyon Road would be 14,820, which would be substantially lower than the FHWA criterion value of 140,000 AADT, which is identified as the minimum volume for higher potential MSAT effects (FHWA 2009). Based on this information, the proposed project is identified as a Category (2) project, that is, the project would have a low potential for MSAT effects. As a result, it is expected that the proposed project would not result in an appreciable difference in overall MSAT emissions when compared to the no-build alternative. In addition, it is important to note that emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by 72 percent between 1999 and 2050. As noted earlier, local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

In addition, the widening of Palo Comado Canyon Road and the US 101 on/off-ramps contemplated as part of the proposed build alternative will have the effect of moving some traffic closer to some nearby land uses; therefore, there may be localized areas where ambient concentrations of MSAT could be higher than the No Build Alternative. However, the magnitude and the duration of these potential increases compared to the No-Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, when a roadway is widened, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Furthermore, as noted in **Table**

10, traffic volumes along Palo Comado Canyon Road and the US 101 on/off-ramps would not have a substantial number of diesel trucks (i.e., 10,000 ADT, or greater). Furthermore, MSAT may be lower in other locations when traffic shifts away from nearby land uses. However, on a regional basis, the US EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

Table 19
Intersection Vehicle Delay – AM Peak Hour

Intersection	Intersection Vehicle Delay (seconds)					
	Opening Year (2015)			Buildout Year (2035)		
	No Build	Build	Change	No Build	Build	Change
1-Driver Ave. at Chesebro Rd.	61.2	61.2	0.0	128.1	128.1	0
2-Palo Comado Canyon Rd. at US 101 NB Ramps	52.3	7.6	-44.7	290.3	9.8	-280.5
3-Dorothy Dr. at US 101 SB Ramps	22.1	22.1	0	41.7	26.0	-15.7
4-Palo Comado Canyon Rd. at Chesebro Rd.	19.0	19.1	0.1	63.2	63.2	0
5-Agoura Rd. at Chesebro Rd.	9.3	9.3	0	13.2	13.2	0

Source: Kimley-Horn and Associates, Inc. Supplemental Analysis, US 101/Palo Comado Canyon Road PA/ED, Traffic Forecasts for Air Quality Analysis (2011).

Table 20
Intersection Vehicle Delay – PM Peak Hour

Intersection	Intersection Vehicle Delay (seconds)					
	Opening Year (2015)			Buildout Year (2035)		
	No Build	Build	Change	No Build	Build	Change
1-Driver Ave. at Chesebro Rd.	44.9	44.9	0	99.3	99.3	0
2-Palo Comado Canyon Rd. at US 101 NB Ramps	69.1	8.0	-61.1	218.2	11.5	-206.7
3-Dorothy Dr. at US 101 SB Ramps	13.4	13.4	0	26.3	24.3	-2.0
4-Palo Comado Canyon Rd. at Chesebro Rd.	19.8	19.8	0	36.0	36.0	0
5-Agoura Rd. at Chesebro Rd.	12.0	12.0	0	26.3	26.3	0

Source: Kimley-Horn and Associates, Inc. Supplemental Analysis, US 101/Palo Comado Canyon Road PA/ED, Traffic Forecasts for Air Quality Analysis (2011).

Short-Term Construction Emissions

Construction of the proposed project would occur in multiple phases. Major phases of project construction are anticipated to include the widening of Palo Comado Canyon Road to the north and south of the US 101, reconstruction of US 101 on/off-ramps, and overpass widening activities. The principal sources of pollutant emissions during construction are fugitive dust and engine exhaust from construction equipment. Fugitive dust would be created during site clearing, excavation, and grading; vehicle travel on paved and unpaved surfaces; as well as, material blown from unprotected graded surfaces. Stationary or mobile powered on-site construction equipment would include trucks, tractors, signal boards, excavators, backhoes, concrete saws, graders, trenchers, pavers, and other paving equipment.

Construction of the proposed project is anticipated to commence in February 2013, and be completed and open for traffic in 2015. As a result, project construction would not last more than five years and construction-related emissions would be considered temporary.

CEQA Compliance

As noted earlier in this report, the proposed project is anticipated to have a beneficial or no impact to long-term regional air quality (refer to **Table 13**).

Construction emissions are estimated using the Sacramento Metropolitan Air Quality Management District's (SMAQMD) Road Construction Emissions Model, Version 6.3.2 (http://www.airquality.org/ceqa/index.shtml). 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 review regulations and the SCAQMD in its CEQA guidance, and is used for that purpose in this project analysis. Emissions modeling was conducted for each of the major construction phases of the proposed project, based on the estimated area of daily disturbance and construction phasing durations provided by the project engineer. All other construction activity assumptions, including equipment required, hours of use, number of workers and commute distances, were based on the default parameters contained in the model. All construction activities were assumed to occur in year 2013.

Estimated daily construction emissions are summarized in **Table 21**. Depending on the phase of construction, maximum daily construction emissions would total approximately 4.3 lbs/day of ROG, 19.4 lbs/day of CO, 35.7 lbs/day of NO_x, 6.6 lbs/day of PM_{10}, and 2.4 lbs/day of $PM_{2.5}$. Refer to **Appendix D** for modeling assumptions and results.

Table 21
Estimated Construction Emissions

Construction Phase	Emissions (lbs/day)				
	ROG	CO	NO_X	PM_{10}	$PM_{2.5}$
Overpass Widening	4.3	19.4	35.7	4.6	2.1
Widen Palo Comado Canyon Rd. South of US 101	3.7	17.5	30.0	3.6	1.8
Widen Palo Comado Canyon Rd. North of US 101	3.7	17.4	29.9	2.8	1.6
NB US 101 Off-ramp Improvements	3.8	17.8	30.3	6.6	2.4
NB US 101 On-ramp Improvements	3.7	17.5	30.0	3.6	1.8

Emissions were calculated using the SMAQMD's Road Construction Emissions Model, Version 6.3.2, based on the estimated area of daily disturbance and construction phasing information provided by the project engineer. All other construction activity assumptions, including equipment required, hours of use, number of workers and commute distances, were based on the default parameters contained in the model. Assumes a construction year of 2013. PM emissions reflect total emissions from mobile sources and fugitive dust; includes an estimated 50% reduction in fugitive emissions with compliance with Caltrans Standard Specifications.
*Refer to **Appendix D** for modeling assumptions and results.*

Naturally Occurring Asbestos

Los Angeles County is not among the counties listed as containing or likely to contain serpentine and ultramafic rock (CDMG 2000). Therefore, the discovery of naturally occurring asbestos during project construction would be unlikely. Areas known or suspected as having a potential for naturally occurring asbestos are depicted in **Appendix C**.

Odors

Minor sources of odors would be present during construction. The predominant source of power for construction equipment is diesel engines. Exhaust odors from diesel engines, as well as emissions associated with asphalt paving may be considered offensive to some individuals. However, because odors would be temporary and would disperse rapidly with distance from the source, construction-generated odors would not be anticipated to result in the frequent exposure of receptors to objectionable odorous emissions.

Avoidance and Minimization Measures

As noted earlier in this report, construction of the proposed project would not last more than five years and, as a result, construction-related emissions would be considered temporary.

Construction of the proposed project would be required to comply with Caltrans' Standard Specifications, Section 7-1.01F "Air Pollution Control," and Section 10 "Dust Control." Caltrans' specifications pertaining to dust control and dust palliative requirements are a required part of construction contracts and should effectively reduce and control emission impacts during construction. These requirements include daily watering of areas disturbed by construction activities. In addition, the State Health and Safety Code requires the contractor to prevent visible dust from leaving the construction site. Most of the construction impacts to air quality are short-term in duration and, therefore, will not result in long-term adverse conditions. Implementation of the following measures, some of which may also be required for other purposes such as storm water pollution control, will reduce any air quality impacts resulting from construction activities:

- The construction contractor shall comply with Caltrans' Standard Specifications in Section 14 (2010).
    - Section 14-9.01 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
    - Section 14-9.02 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18.
- Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emission or at the right of way line depending on local regulations.
- Spread soil binder on any unpaved roads used for construction purposes, and all project construction parking areas.
- Wash off trucks as they leave the right-of-way as necessary to control fugitive dust emissions.

- Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.

- Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.

- Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly.

- Establish Environmentally Sensitive Areas (ESAs) or their equivalent near sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited, to the extent feasible.

- Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.

- Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to minimize emission of dust (particulate matter) during transportation.

- Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.

- Route and schedule construction traffic to avoid peak travel times as much as possible, to reduce congestion and related air quality impacts caused by idling vehicles along local roads.

- Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area. Be aware that certain methods of mulch placement, such as straw blowing, may themselves cause dust and visible emission issues and may need to use controls such as dampened straw.

SCAQMD Rules & Regulations

As noted above, Caltrans Standard Specifications, Section 7-1.01F, specifically requires compliance with all applicable laws and regulations related to air quality, which would include applicable SMAQMD rules and regulations. This would include compliance with SCAQMD Rules 402 and 403. SCAQMD Rule 402 requires that air pollutant emissions not be a nuisance off-site. SCAQMD Rule 403 requires that fugitive dust be controlled with the best available control measures in order to reduce dust so that it does not remain visible in the atmosphere beyond the property line of the proposed project. Rule 403 requires that construction activities utilize the applicable best available control measures identified in Rule 403. The applicable control measures target various construction operations such as backfilling, clearing and grubbing, crushing, cut and fill, demolition, earth-moving activities, bulk material import and export, construction staging, stockpiles/bulk material handling, trenching, and loading. The proposed project would implement all applicable measures presented in Rule 403. The applicable measures from Table 1 of Rule 403 suggest methods such as covering stockpiles with tarps, and the application of water to stabilize materials.

Rule 403 also prohibits projects from allowing track-outs to extend 25 feet or more in cumulative length from the point of origin from an active operation. All track-outs are required to be removed at the conclusion of each workday or evening shift. Any projects with a disturbed surface area of five or more acres or with a daily import or export of 100 cubic yards or more of bulk materials must utilize at least one of the specified track-out control measures at each vehicle egress from the site to a paved public road. The specified track-out control measures consist of installation of washed gravel pads, paving project ingress/egress, wheel shakers, wheel washing systems, and any other approved control measures.

CLIMATE CHANGE

Setting

The earth's climate has been warming for the past century. It is believed that this warming trend is related to the release of certain gases into the atmosphere. Greenhouse gases (GHG) absorb infrared energy that would otherwise escape from the earth. As the infrared energy is absorbed, the air surrounding the earth is heated. An overall warming trend has been recorded since the late 19th century, with the most rapid warming occurring over the past two decades. The 10 warmest years of the last century all occurred within the last 15 years. It appears that the decade of the 1990s was the warmest in human history. Human activities have been attributed to an increase in the atmospheric abundance of greenhouse gases.

Greenhouse Gases

The most commonly recognized GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), water vapor, ozone, aerosols, hydrofluorocarbons (HFCs), chlorofluorocarbons (CFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) (CARB 2006, CEC 2008). The following is a brief description of the most commonly recognized GHGs:

Carbon Dioxide

CO_2 is an odorless, colorless natural greenhouse gas. CO_2 is emitted from natural and anthropogenic sources. Natural sources include the following: 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. Nitrous oxide 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.

Water Vapor

Water vapor is the most abundant, important, and variable greenhouse gas. It is not considered a pollutant; in the atmosphere, it maintains a climate necessary for life.

Ozone

Ozone is known as a photochemical pollutant and is a greenhouse gas; however, unlike other greenhouse gases, ozone in the troposphere is relatively short-lived and, therefore, is not global in nature. Ozone is not emitted directly into the atmosphere but is formed by a complex series of chemical reactions between volatile organic compounds, nitrogen oxides, and sunlight.

Aerosols

Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

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 carbon dioxide at one. HFCs are human-made for applications such as air conditioners and refrigerants.

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.

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. The project would not 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. Sulfur hexafluoride 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. The project would not emit SF_6.

Effects of Climate Change

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth, and what the effects of clouds will be in determining the rate at which the mean temperature will increase. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, air pollution episodes, and the consequence of these effects on the economy.

Emissions of GHGs contributing to global climate change are largely attributable to human activities associated with industrial/manufacturing, utility, transportation, residential, and agricultural sectors. About three-quarters of human emissions of CO_2 to the global atmosphere during the past 20 years are due to fossil fuel burning. Atmospheric concentrations of CO_2, CH_4, and N_2O have increased 31 percent, 151 percent, and 17 percent respectively since the year 1750 (CEC 2008). GHG emissions are typically expressed in carbon dioxide-equivalents (CO_2e), based on the GHG's Global Warming Potential (GWP). The GWP is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, one ton of CH_4 has the same contribution to the greenhouse effect as approximately 21 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2.

Worldwide, California is ranked as the 12th largest emitter of GHGs. Based on the most recent GHG emissions inventory, California's gross annual emissions of GHGs in 2004 totaled approximately 500 million metric tons (MMT) of CO_2e. Most of California's emissions, approximately 81 percent, consist of carbon dioxide produced from fossil fuel combustion. The transportation sector is the single largest category of California's GHG emissions, accounting for approximately 39 percent of the state's total GHG emissions, followed by electricity consumption (from both in-state and out-of-state providers), which accounts for a total of roughly 28 percent of the state's total GHG emissions. The contribution from each of the various other use sectors contribute roughly 6 to 10 percent each to the total GHG emissions inventory (CEC 2008).

According to the IPCC's Working Group II Report, climate change impacts to North America may include:

- Diminishing snowpack
- Increasing evaporation
- Exacerbate shoreline erosion
- Exacerbate inundation from sea level rising
- Increased risk and frequency of wildfire
- Increased risk of insect outbreaks
- Increased experiences of heat waves
- Rearrangement of ecosystems as species and ecosystems shift northward and to higher elevations

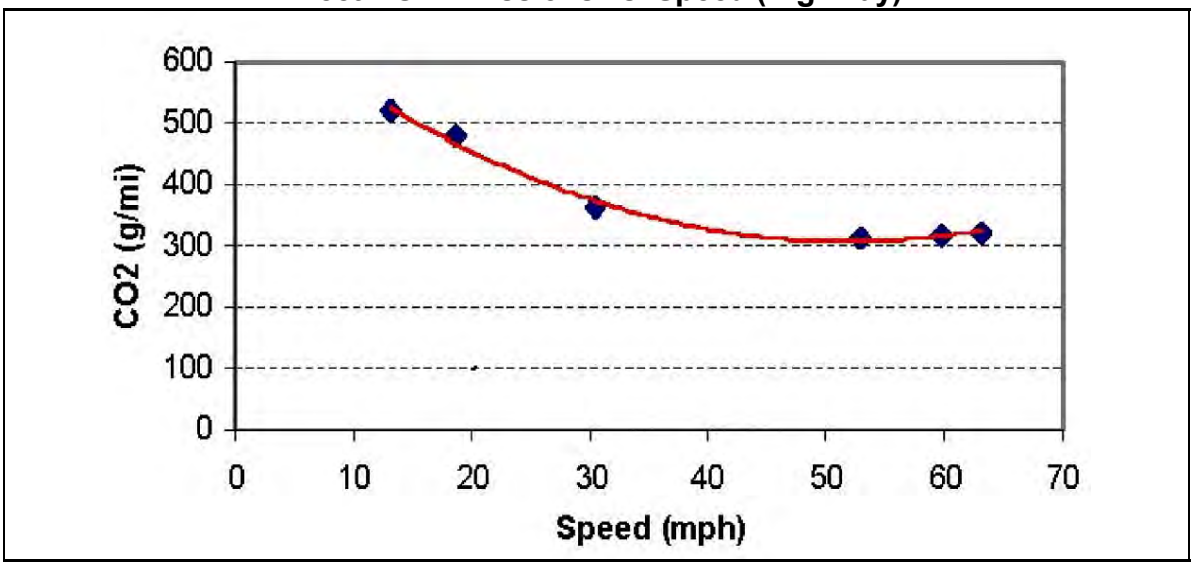
- For California, climate change has the potential to incur/exacerbate the following environmental impacts:
- Air Pollution
- Increased frequency, duration, and intensity of conditions conducive to air pollution formation (particularly ozone)
- Water Resources
- Reduced precipitation
- Changes to precipitation and runoff patterns
- Reduced snowfall (precipitation occurring as rain instead of snow)
- Earlier snowmelt
- Decreased snowpack
- Increased agricultural demand for water
- Agricultural Impacts
- Increased growing season
- Increased growth rates of weeds, insect pests and pathogens
- Coastal Impacts
- Inundation by sea level rise
- Forests and Natural Landscapes Impacts
- Increased incidents and severity of wildfire events
- Expansion of the range and increased frequency of pest outbreaks

Project Analysis

At the present time, neither the US EPA nor FHWA have promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. According to FHWA, 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. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the State of California 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.

One of the main strategies in the Caltrans 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 [mph] miles per hour) and speeds over 55 mph; the most severe emissions occur from 0-25 mph (refer to **Figure 8**). 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.

Figure 8
Fleet CO2 Emissions vs. Speed (Highway)



Source: Center for Clean Air Policy— http://www.ccap.org/Presentations/Winkelman%20TRB%202004%20(1-13-04).pdf

Build Alternative

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. GHG emissions generated during construction and operation of the proposed project are discussed, as follows:

Long-term Operational Emissions

Long-term operational emissions associated with the proposed project would be associated with the operation of motor vehicles on area roadways and the US101 on/off ramps. Implementation of the proposed project would not result in a change in vehicle operations on the mainline of US 101. Motor vehicle operational emissions were quantified using EMFAC2007 emission factors for existing, build year (year 2015) and design year (year 2035) conditions, based on data obtained from the traffic analysis prepared for the proposed project. The modeling conducted includes running exhaust and idle emissions. Estimated annual operational mobile-source GHG emissions are summarized in **Table 22**.

The proposed project would improve local circulation, thereby reducing vehicle delay and associated emissions. In comparison to existing conditions, predicted opening year 2015 GHG emissions within the project study area would increase for both the No-Build Alternative and Build Alternative by approximately 203 and 200 $MTCO_2e$/year, respectively. In opening year 2015 and in comparison to the No-Build Alternative, the Build Alternative would result in additional reductions of approximately 3 $MTCO_2e$/year. The additional reductions in GHG emissions attributable to the proposed Build Alternative would be predominantly associated with reductions in peak-hour vehicle delay at intersections.

Table 22
Annual Greenhouse Gas Emissions

Scenario	Greenhouse Gas Emissions ($MTCO_2e$/year)
Existing Conditions	1,462.35
Build Year 2015	
No-Build	1,664.96
Change - No-Build Alternative vs. Existing Conditions:	202.61
Build	1,662.17
Change - Build Alternative vs. Existing Conditions:	199.82
Change - Build Alternative vs. No-Build Alternative:	-2.79
Design Year 2035	
No-Build	2,752.30
Change - No-Build Alternative vs. Existing Conditions:	1,289.95
Build	2,731.65
Change - Build Alternative vs. Existing Conditions:	1,269.30
Change - Build Alternative vs. No-Build Alternative:	-20.65
*Based on emission factors obtained from the EMFAC2007, version 2.3 computer model and traffic data obtained from the traffic analysis prepared for this project. Includes running exhaust and idle emissions. Refer to **Appendix D** for modeling results.*	

Under design year 2035 conditions, GHG emissions within the project study area for both the No-Build Alternative and the Build Alternative are projected to increase. Under No-Build Alternative conditions GHG emissions would increase by approximately 1,290 $MTCO_2e$ in comparison to existing conditions. In comparison to the No-Build Alternative the Build Alternative would result in mobile-source GHG reductions of approximately 21 $MTCO_2e$/year within the project study area. As noted above, reductions in GHG emissions attributable to the proposed project would be predominantly associated with reductions in peak-hour vehicle delay at intersections.

It is important to note, however, that the GHG emissions are only useful for a comparison between the "build" and "no-build" alternatives. Actual GHG emissions will vary depending on multiple factors, such as fuel mix (EMFAC model emission rates are only for direct engine-out CO_2 emissions not full fuel cycle; fuel cycle emission rates can vary dramatically depending on the amount of additives like ethanol and the source of the fuel components), rate of acceleration, and the aerodynamics and efficiency of the vehicles. In addition, the proposed project is not located in an area that is considered directly vulnerable to projected future sea level rise, is funded and anticipated to commence construction in 2013.

Short-term Construction Emissions

Construction GHG emissions are predominantly associated with emissions generated by motorized offroad equipment and on-road vehicles, including material transport trips and employees traveling to and from the project site. The amount of emissions generated would vary depending on multiple factors, such as the type and number of equipment required and hours of use. GHG emissions can be reduced by use of cleaner more efficient equipment and by implementing traffic management during construction phases to minimize associated vehicle delays on area roadways. The proposed project would comply

with applicable State, Federal, and/or local rules and regulations developed as a result of implementing control and mitigation measures proposed as part of their respective SIPs.

Construction GHG emissions were estimated using the SMAQMD's Road Construction Emissions Model, Version 6.3.2 (http://www.airquality.org/ceqa/index.shtml). While the model was developed for Sacramento conditions in terms of fleet emission factors 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 Review regulations and the SCAQMD in its CEQA guidance, and is used for that purpose in this project analysis. Emissions modeling was conducted based on the estimated area of daily disturbance and overall construction duration associated with each of the major project construction phases, as provided by the project engineer. The modeling assumes that each construction phase would occur over an approximately six-month period. All other construction activity assumptions, including equipment required, hours of use, number of workers and commute distances, were based on the default parameters contained in the model. All construction activities were assumed to occur in year 2013. Short-term construction GHG emission are summarized in **Table 23**. Refer to **Appendix D** for modeling assumptions and results.

Table 23
Construction-Generated Greenhouse Gas Emissions

Construction Activity	Greenhouse Gas Emissions (MTCO2e/year)
Overpass Widening	201
Widen Palo Comado Canyon Rd. South of US 101	182
Widen Palo Comado Canyon Rd. North of US 101	182
NB US 101 Off-ramp Improvements	185
NB US 101 On-ramp Improvements	182
Total:	932

Emissions calculated using the SMAQMD's Road Construction Emissions Model (RCEM), Version 6.3.2, based on estimated area of daily disturbance and construction phasing information provided by the project engineer. All other construction activity assumptions, including equipment required, hours of use, number of workers and commute distances, were based on the default parameters contained in the model. Assumes a construction year of 2013.
*Refer to **Appendix D** for modeling assumptions and results.*

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APPENDIX A
TRANSPORTATION CONFORMITY WORKING GROUP DETERMINATION

PM Conformity Hot Spot Analysis – Project Summary for Interagency Consultation

RTIP ID# *(required)* LA0G230

TCWG Consideration Date January 25, 2011

Project Description *(clearly describe project)*
The California Department of Transportation (Caltrans) and The City of Agoura Hills (City), propose to construct improvements at the US 101/Palo Comado Canyon Road interchange (PM 33.0/34.4), in Los Angeles County within in the City of Agoura Hills. The Build Alternative would include widening the entire length of Palo Comado Canyon Road, between Driver Avenue to the north and Chesebro Road to the south; from two to four lanes. Within these limits, the Palo Comado Canyon Road Overcrossing would be widened from one lane in each direction to provide two lanes in each direction, along with a dedicated left-hand turn lane, for a total of five striped lanes. A Class II bike lane and sidewalks would be provided on both sides of the overcrossing.

The Build Alternative would maintain the existing layout of the interchange ramps; however, the northbound on- and off-ramps would be slightly re-configured, with an additional lane being provided on the northbound off-ramp at the Palo Comado Canyon Road intersection. The intersection of the northbound ramps and Palo Comado Road would be signalized; the remaining intersections would remain un-signalized. Proposed improvements would not change the number of lanes on any freeway on or off ramps, nor affect any portion of the freeway mainline. Project construction is anticipated to begin in February 2013, and be completed and open for traffic in 2015. The project design/horizon year is 2035.

The project location is depicted in **Figure 1. Figure 2** outlines the existing facilities. The proposed improvements are depicted in **Figure 3**. Nearby land uses are depicted in **Figure 4**.

Type of Project *(use Table 1 on instruction sheet)*

Reconfigure Existing Interchange

County	**Narrative Location/Route & Postmiles**
Los Angeles	City of Agoura Hills – US 101/Palo Comado Canyon Road interchange (PM 33.0/34.4) Caltrans Projects – EA# 257200

Lead Agency: Caltrans

Contact Person	**Phone#**	**Fax#**	**Email**
Andrew Yoon, PE	213-897-6117	213-897-1634	andrew_yoon@dot.ca.gov

Hot Spot Pollutant of Concern *(Check one or both)* **PM2.5 x** **PM10 x**

Federal Action for which Project-Level PM Conformity is Needed *(Check appropriate box)*

Categorical Exclusion (NEPA)	x	EA or Draft EIS	FONSI or Final EIS	PS&E or Construction	Other

Scheduled Date of Federal Action: 2011

NEPA Delegation – Project Type *(Check appropriate box)*

Exempt	Section 6004 – Categorical Exemption	x	Section 6005 – Non-Categorical Exemption

Current Programming Dates *(as appropriate)*

	PE/Environmental	ENG	ROW	CON
Start	July 2009	August 2011	December 2011	Feb 2013
End	August 2011	August 2012	September 2012	Dec 2014

Project Purpose and Need (Summary): *(attach additional sheets as necessary)*

Purpose:

- Reduce existing and forecasted traffic congestion within the project limits;
- Improve circulation at the US 101/Palo Comado Canyon Road interchange and adjacent roadway network;
- Improve safety at the US 101/Palo Comado Canyon Road interchange; and
- Accommodate pedestrian and bicycle traffic along Palo Comado Canyon Road.

Need:
Palo Comado Canyon Road has seen significant increase in traffic levels due to the increased development in the area. The recent General Plan Update (2010) has identified Palo Comado Canyon Road and the intersections in the vicinity of US 101 freeway as deficient under existing as well as future forecast conditions.

Currently, the distance, between the existing Canwood Street intersection and the US 101 northbound ramps intersection on Palo Comado Canyon Road is approximately 100 feet (centerline to centerline). This configuration presents a nonstandard access control distance beyond the northbound off-ramp termini, and it does not have the capacity to handle the forecasted increase in traffic demand. Furthermore, the planned developments around Chesebro Road, Palo Comado Canyon Road, and Canwood Streets west of Palo Comado Canyon Road will substantially increase traffic volumes on the local roadway network, as well as the US 101 interchange. Roadway improvements are needed to keep traffic operation Level of Service (LOS) on the roadways and intersections within an acceptable range.
The need for this project is as follows:

- Planned development of the vacant lands adjacent to the interchange will increase traffic volumes around the area, and improvements to the interchange and the roadway network are needed to accommodate additional traffic demands and relieve congestion.
- The existing access road, Canwood Street, has an intersection approximately 100 feet (centerline to centerline) from the existing northbound on-ramp intersection at the Palo Comado Canyon Road interchange. Improvements are needed to provide better access control and traffic circulation.

Surrounding Land Use/Traffic Generators *(especially effect on diesel traffic)*

Existing Land Use
The area surrounding the project site consists of a mix of residential, commercial, and school properties. The neighborhood along Agoura Road south of the interchange is mostly residential with single family homes, while the properties in the immediate area of the interchange are mostly commercial, including business parks, light industrial, retail, and gas stations. Gas stations exist in the north east and northwest quadrants of the interchange adjacent to the northbound ramps. Most of the remaining areas in the northeast quadrant of the interchange are vacant land, except for an equestrian community located near the interchange of Palo Comado Canyon Road and Driver Avenue. Several multi-family residential properties, Agoura Park, and Agoura High School are located northwest of the interchange. Existing land uses are depicted in **Figure 4**.

Future Land Use
The area has scattered vacant lots zoned commercial and residential, which are also planned for future development.

Opening Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

Summary of Intersection Level of Service
Opening Year 2015 Conditions

Segment	Baseline		Project	
	AM	PM	AM	PM
Driver at Chesebro	F	E	F	E
Palo Comado Rd at US 101 WB Ramps	F	F	A	A
Dorothy Dr at US 101 EB Ramps	C	B	C	B
Palo Comado Rd at Chesebro	C	C	C	C
Agoura at Chesebro	A	B	A	B

Refer to Figure 2 for intersection locations.
Source: Kimley-Horn and Associates, Inc. October 2010.

Summary of Roadway, Mainline & On/Off-Ramp Level of Service
Opening Year 2015 Conditions

Segment	Baseline		Project	
	AM	PM	AM	PM
Palo Comado Canyon Road	F	F	C	C
	NB	SB	NB	SB
US 101 Mainline	D	D	D	D
US 101 NB ON-RAMP: LOS D	D		D	
US 101 NB OFF-RAMP: LOS D	D		D	
US 101 SB ON-RAMP: LOS D	D		D	
US 101 SB OFF-RAMP: LOS D	D		D	

Source: Kimley-Horn and Associates, Inc. October 2010.

Average Daily Trips (Year 2015):
Palo Comado Canyon Road: 11,400 ADT
US101, West of Palo Comado Canyon Road: 177,800 ADT
US101, East of Palo Comado Canyon Road: 183,000 ADT

Percent and Number of Average Daily Truck Trips (Year 2015):
Palo Comado Canyon Road: 2%, 228
US101, West of Palo Comado Canyon Road: 4%, 7,112 Truck ADT
US101, East of Palo Comado Canyon Road: 4%,7,320 Truck ADT

Note: ADTs for the Build and No-Build Alternatives remain the same.
No improvement is proposed on the mainline US 101.

RTP Horizon Year / Design Year: Build and No Build LOS, AADT, % and # trucks, truck AADT of proposed facility

Summary of Intersection Level of Service
Opening Year 2035 Conditions

Segment	Baseline		Project	
	AM	PM	AM	PM
Driver at Chesebro	F	F	F	F
Palo Comado Rd at US 101 WB Ramps	F	F	A	B
Dorothy Dr at US 101 EB Ramps	E	D	E	D
Palo Comado Rd at Chesebro	F	E	F	E
Agoura at Chesebro	B	D	B	D

Refer to Figure 2 for intersection locations.
Source: Kimley-Horn and Associates, Inc. October 2010.

Summary of Roadway, Mainline & On/Off-Ramp Level of Service
Opening Year 2015 Conditions

Segment	Baseline		Project	
	AM	PM	AM	PM
Palo Comado Canyon Road	F	F	C	C
	NB	SB	NB	SB
US 101 Mainline	D	D	D	D
US 101 NB ON-RAMP: LOS D	D		D	
US 101 NB OFF-RAMP: LOS D	D		D	
US 101 SB ON-RAMP: LOS D	D		D	
US 101 SB OFF-RAMP: LOS D	D		D	

Source: Kimley-Horn and Associates, Inc. October 2010.

Average Daily Trips (Year 2035):
Palo Comado Canyon Road: 14,820 ADT
US101, West of Palo Comado Canyon Road: 206,500 ADT
US101, East of Palo Comado Canyon Road: 212,500 ADT

Percent and Number of Average Daily Truck Trips (Year 2035):
Palo Comado Canyon Road: 2%, 297 Truck ADT
US101, West of Palo Comado Canyon Road: 4%, 8,260 Truck ADT
US101, East of Palo Comado Canyon Road: 4%, 8,500 Truck ADT

Note: ADTs for the Build and No-Build Alternatives remain the same.
No improvement is proposed on the mainline US 101.

Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT
Palo Comado Canyon Road (Build/No Build): 11,400 ADT, 2% Truck, 228 Truck ADT

RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT
Palo Comado Canyon Road (Build/No Build): 14,820 ADT, 2% Truck, 297 Truck ADT

Describe potential traffic redistribution effects of congestion relief *(impact on other facilities)*
The proposed project is an interchange improvement/modification intended to better manage existing traffic flow and enhance safety. Based on the traffic analysis prepared for this project and as indicated above, neither mainline nor cross-street ADT is anticipated to change with implementation of the proposed project. In addition, implementation of the proposed project is anticipated to result in improvements to levels of services on Palo Comado Road and at the intersection of Palo Comado Rd and US 101 WB Ramps. Project improvements would not provide new, nor enhanced access to any parcels along Palo Comado Rd, or any other roadway facility. As such, no traffic redistribution effects are anticipated to occur as a result of proposed project improvements.

Comments/Explanation/Details *(attach additional sheets as necessary)*

The proposed project will not alter local traffic patterns, nor will it affect diesel trucks traffic volumes on area roadways. In addition, the proposed improvements would not be a traffic generator project and would not redirect traffic flow in the project area. Although the improvements are being proposed to increase capacity for the purpose of accommodating future growth, the traffic study indicates that the proposed project would not result in a change in build vs. no build traffic volumes on area roadways, including the US 101 mainline and off-/on-ramps. In addition, as noted above, ADT truck volumes on US 101 for opening year 2015 and horizon year 2035 are not projected to exceed the FHWA and EPA's POAQC criteria of 10,000 diesel truck ADT (diesel truck traffic of 8% or more for roadways with 125,000 ADT or more).

Based on the information provided above, the proposed project is not expected to introduce a significant amount of diesel truck traffic, would not generate additional diesel truck traffic above levels anticipated without implementation of the project, and is in compliance with the SIP/RTIP. Therefore, the project qualifies for a finding of "Not POAQC" based on the definition contained in 40 CFR 93.123(b)(1).

References

City of Agoura Hills. March 2010. *General Plan 2035 Final EIR. Volume I-Part II.*

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Kimley-Horn and Associates, Inc. October 2010. *US 101/Palo Comado Canyon Road PA/ED, Draft Traffic Impact Analysis.*

Parsons Transportation Group, Inc. February 23, 2009. *Project Study Report to Request for Conceptual Approval and Programming for Capital Cost.*

Figure 1: Project Vicinity & Location Maps

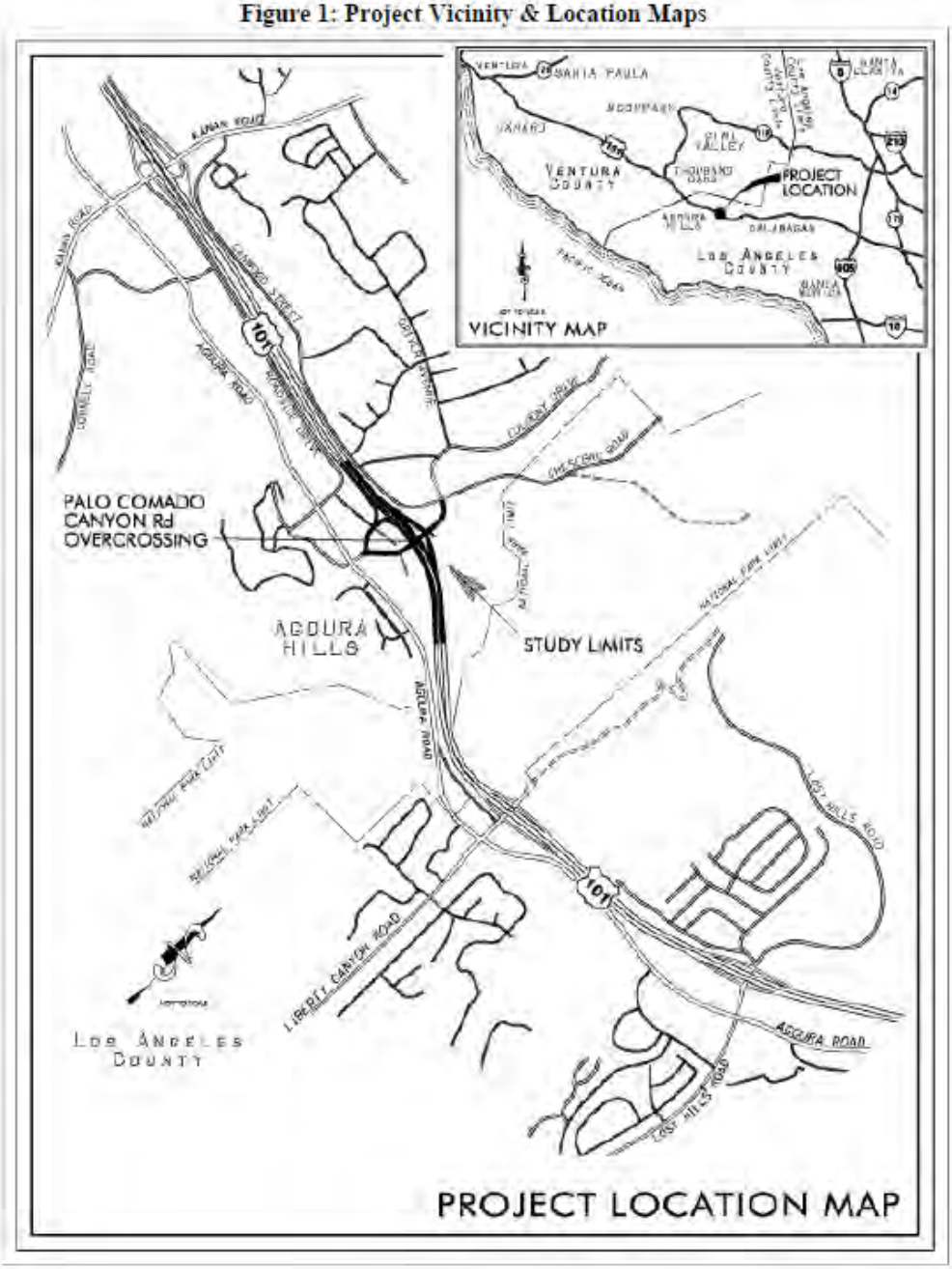


Figure 2: Intersections within Project Area

Figure 3: Build Alternative

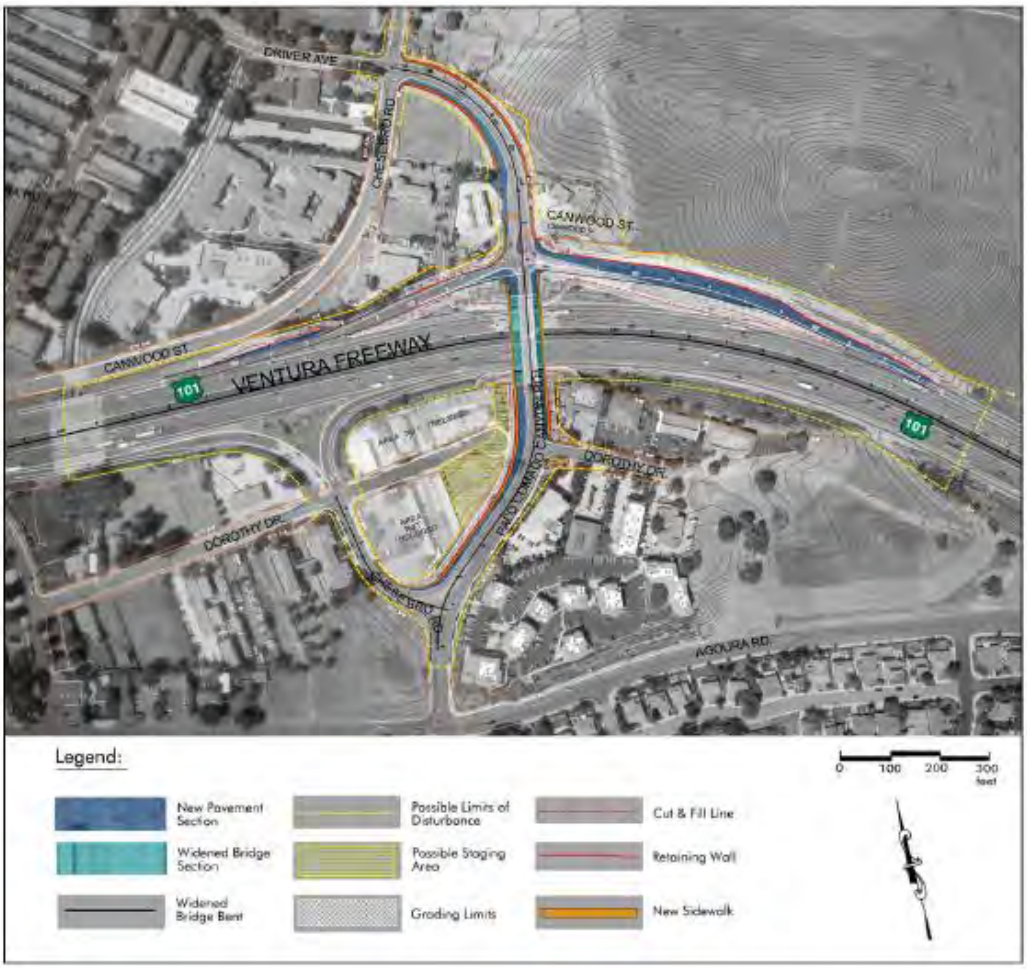


Figure 4: Existing Land Uses

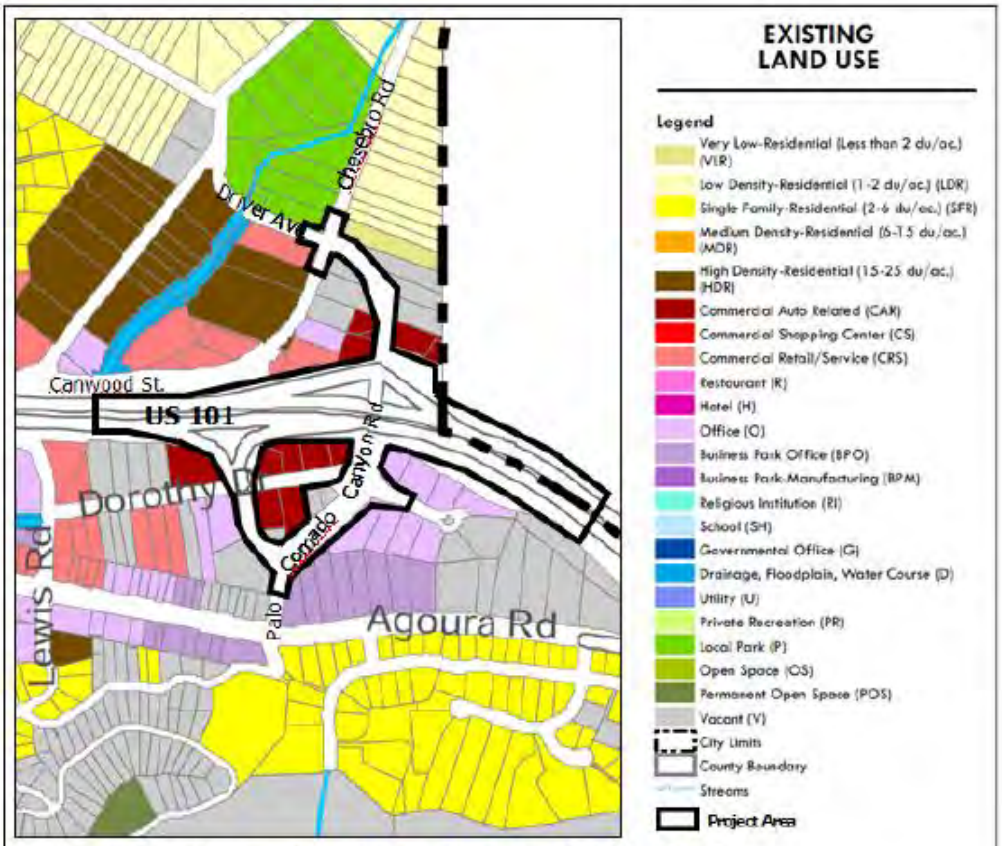
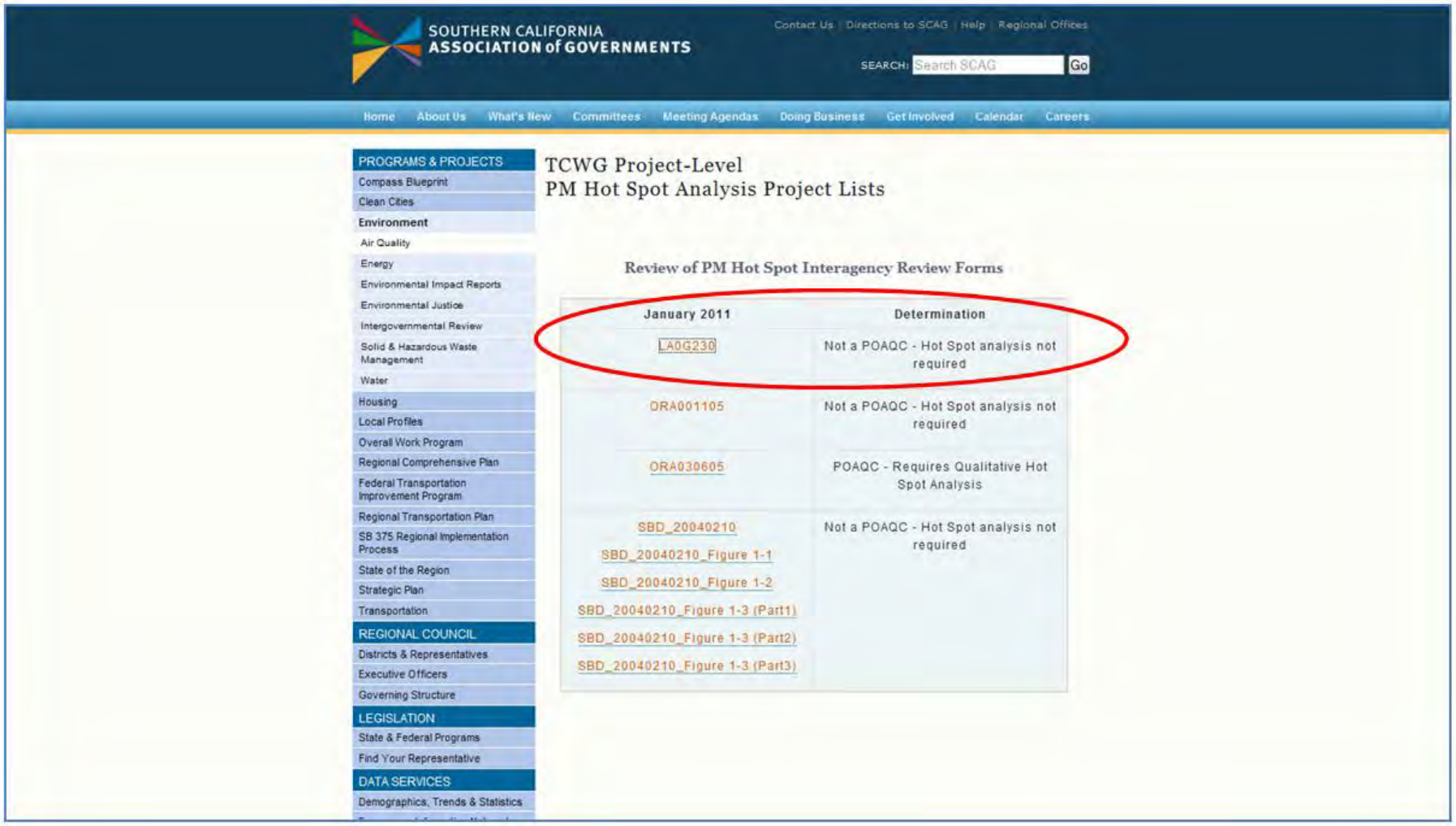


Image Source: City of Agoura Hills. March 2010. General Plan 2035 Final EIR, Volume I-Part II.

TCWG Determination



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TCWG Project-Level
PM Hot Spot Analysis Project Lists

Review of PM Hot Spot Interagency Review Forms

January 2011	Determination
LA0G230	Not a POAQC - Hot Spot analysis not required
ORA001105	Not a POAQC - Hot Spot analysis not required
ORA030605	POAQC - Requires Qualitative Hot Spot Analysis
SBD_20040210 SBD_20040210_Figure 1-1 SBD_20040210_Figure 1-2 SBD_20040210_Figure 1-3 (Part1) SBD_20040210_Figure 1-3 (Part2) SBD_20040210_Figure 1-3 (Part3)	Not a POAQC - Hot Spot analysis not required

Source: Southern California Association of Governments. Transportation Conformity Working Group Project-Level PM Hot Spot Analysis Project Lists. Website url: http://www.scag.ca.gov/tcwg/projectlist/january11.htm

APPENDIX B
REGIONAL TRANSPORATION CONFORMITY

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

RTP

2008 REGIONAL TRANSPORTATION PLAN

Making the Connections

Amendment #4

ADOPTED

NOVEMBER 2010

CO	SYS*	LEAD AGENCY	RTP ID	RTIP ID	RTE	BEG PM	END PM	STREET	FROM	TO	DESCRIPTION	ADDITIONAL DETAILS, IF AVAILABLE	2008 RTIP	NO BUILD	NETWORK YR / PROJECT COMPLETION BY?** 2008	2009	2010	2012	2014	2020	2030	2035
LA	S	VERNON	17190	17190	710	21.9	22.0	I-710	ATLANTIC BLVD	BANDINI BLVD	BTWN ATLANTIC BL & BANDINI BL UNDERCROSSINGS- PHASE I: RECONFIG NB 710 ON-RAMP - CONSTRUCT ~400 MTR LOOP RAMP LOCATED ~300 MTRS N/O ATLANTIC/BANDINI, NEW RAMP CROSSES ATLANTIC ON NEW BRIDGE STRUCTURE CONNECTING TO EXISTING ON-RAMP W/O ATLANTIC; RELOCATE NB ON-RAMP; EXTEND SB ON-RAMP @ ATLANTIC ~120 MTRS W/O EXISTING RAMP TERMINUS AND 2-LN FACILITY W/O DIVERGENCE PT AND NB OFF-RAMP AT BANDINI; EXTEND NB RAMP TO 2 LANES	RECONFIGURATION OF THE NORTHBOUND 710 ON-RAMP FROM ATLANTIC/BANDINI BLVD - CONSTRUCT APPROX 400 METER-LONG LOOP RAMP, LOCATED APPROX 300 METERS NORTH OF THE ATLANTIC/BANDINI INTERSECTION. THE NEW RAMP CROSSES ATLANTIC BLVD ON A NEW BRIDGE STRUCTURE CONNECTING TO THE EXISTING ON-RAMP WEST OF ATLANTIC BLVD,AND RELOCATE I-710 NORTHBOUND ON RAMP	√	√	√							
LA	S	LOS ANGELES COUNTY MTA	1M0101		710	26.5	32.7	SR-710 Gap Closure	Valley Boulevard	California Bl & Pasadena Ave	CONSTRUCT 4 TOLL LANES IN EACH DIRECTION IN TUNNEL TO COMPLETE THE SR-710 FREEWAY	RETAIN EXISTING CONNECTIVITY, DO NOT ADD NB OR SB ACCESS WHERE IT DOES NOT CURRENTLY EXIST.									√	
LA & SB	S	TBD	1C0404		TBD	0.0	0.0	HIGH DESERT CORRIDOR	I-5 in LA County	US-395 in San Bernardino County (connecting with Route 220 project #20020144)	HIGH DESERT CORRIDOR (TOLL FOR LA COUNTY PORTION): E-W 4 MF EACH DIR ALONG AVE P-8 FROM SR-14 TO 50TH ST E., 3 MF EACH DIR FROM 50TH ST E TO 240TH ST E., EXWY 3 LNS EACH DIR FROM 240TH ST E TO US-395 (CONNECTING AT SB CO #20020144). N-S EXWY 2 LNS EACH DIR ALONG AVE D (SR-14 TO OLD SIERRA HWY), AVE E (TO 90TH ST E), 90TH ST E (CONNECTING TO AVE P-8 PWY AT 120TH ST E), AND SOUTH TO SR-138 NEAR 150TH ST E., E-W EXWY 3 LNS EACH DIR ON SR-138 FROM I-5 TO SR-14.	Note: this corridor project is located in both LA and SB counties; this single project entry covers both counties							√			
LA	L		LAE2246	LAE2246	0	0.0	0.0	RANCHO VISTA BL	3RD ST E & 8TH ST E		RANCHO VISTA BLVD - WIDEN INTERSECTION AT 3RD ST EAST AND INTERSECTION AT 8TH ST. EAST/LOCKHEED WAY - 6 LANES; MODIFY TRAFFIC SIGNALS, DRAINAGE, SIDEWALKS, MEDIANS, UTILITY RELOCATIONS						√					
LA	L	AGOURA HILLS	LA0G344	LA0G344	0	0.0	0.0	REYES ADOBE RD	OVERCROSSING OF THE 101 FREEWAY		WIDENING OF THE REYES ADOBE ROAD OVERCROSSING OF THE 101 FREEWAY FROM 3 LANES TO 6 LANES, ALONG WITH BIKE LANES AND SIDEWALKS	FROM 3 LANES TO 6 LANES.	√	√				√				
LA	L	AGOURA HILLS	LA99G343	LA99G343	101	34.4	35.3	US-101	KANAN RD. INTERCHANGE		U.S. 101 FWY/KANAN RD. INTERCHANGE IMPROVEMENTS SAFETEA-LU # 3099 NB OFF RAMP 1 TO 2 LANES	THERE ARE NO ADDITIONAL THRU LANES TO BE ADDED TO THE 101 FREEWAY BUT THERE IS ONE ADDITIONAL LANE ADDED TO THE NB OFF RAMP (1 to 2)	√	√				√				
LA	L	AGOURA HILLS	1A1001	LA0G230	101	33.0	34.4	US-101	PALO COMADO CANYON BRIDGE AT CHESEBRO RD		U.S. 101 FREEWAY AND PALO COMADO CANYON ROAD BRIDGE-AT CHESEBRO ROAD (PM 33.0/34.4). WIDENING OF BRIDGE FROM 2-LANES TO 4-LANES, CONSTRUCTION OF SIDEWALKS AND BIKE LANES, MODIFICATION OF ON/OFF RAMPS, AND MODIFICATION OF VARIOUS INTERSECTIONS.								√				
LA	L	ALHAMBRA	LA97107	LA97107	0	0.0	0.0	FREMONT AVE	COMMONWEALTH ROAD	VALLEY BLVD	ON FREMONT AVE FROM COMMONWEALTH RD TO VALLEY BL - ADD SOUTHBOUND THROUGH LANE AND RIGHT TURN LANE	ADD SOUTHBOUND LANE	√	√	√							
LA	L	ALHAMBRA	LA99G56	LA99G56	0	0.0	0.0	MISSION RD	1ST STREET	EAST CITY LIMITS	MISSION RD RECONSTRUCTION & WIDEN FROM 1ST ST TO EAST CL (TEA21# 654) -- FROM 2 TO 5 LANES IN EACH DIRECTION (3,000 FT)	WIDEN FROM 2 TO 5 LANES IN EACH DIRECTION	√	√	√							
LA	L	ALHAMBRA	LAE3018	LAE3018	0	0.0	0.0	VALLEY BL	I-710	MARGUERITA	VALLEY BLVD CAPACITY IMPROVEMENTS BETWEEN 710 AND MARGUERITA. ADD 1 LN EACH DIR (CURRENTLY PARKING LNS CONVERT TO TRAVEL LANES DURING PEAK)	ADD 1 LANE IN EA DIR FROM 710 TO MARGUERITA (CURRENTLY PARKING LANE CONVERTING TO TRAVEL LANES DURING PEAK HOURS. WEST PEAK IS MORNING AND EASTBOUND IS EVENING PEAK)	√	√				√				
LA	L	ARCADIA	LAF1197	LAF1197	0	0.0	0.0	HUNTINGTON DR.	COLORADO PLACE	SANTA ANITA AVE	Huntington Dr Capacity Improvements. MITIGATION COSTS EXCLUDED [Project involves traffic flow and capacity improvements incl the addition of a through lane, turn lanes & reconstruction of median & channelizing islands]	Existing- 2 lanes E/W, After Implementation- 3 westbound, Description, 2 eastbound lanes. Widening will be for .5 miles. Project will widen the Huntington Drive roadway between Colorado Place and Santa Anita Avenue to provide a third travel lane	√					√				
LA	L	AZUSA	LAE1904	LAE1904	0	0.0	0.0	AZUSA AVE AND SAN GABRIEL AVE	AZUSA AVE AND SAN GABRIEL AVE (THESE TWO STREETS CURRENTLY MERGE)		RECONSTRUCT AZUSA AVE AND SAN GABRIEL AVE FOR TWO WAY TRAFFIC IN AZUSA FROM BASELINE TO SIERRA MADRE	NO NEW LANES WILL BE ADDED. ONLY DIRECTION WILL CHANGE WITH A STRIPED MEDIAN. THE LENGTHS AND LIMITS ARE BASELINE ON SOUTH NORTHERLY TO SIERRA MADRE. SAN GABRIEL LENGTH IS 1.75 MILES.AZUSA AVE. LENGTH IS 1.62 MILES.	√	√				√				
LA	L	BALDWIN PARK	LAE2517	LAE2517	0	0.0	0.0	MAINE AVE	RAMONA BLVD	BOGART AVE	WIDEN MAINE AVE TO 4 THRU LANES IN BALDWIN PARK (2517)(E/P,PS/E ONLY)	ADD 1 THRU LANE RESULTING IN A TOTAL OF 4 THRU LANES, 1 RIGHT TURN ONLY LANE AND 1 LEFT TURN ONLY LANE	√						√			
LA	L	BEVERLY HILLS	LA0C8098	LA0C8098	0	0.0	0.0	SANTA MONICA BL	DOHENY DRIVE	WILSHIRE BLVD	SANTA MONICA BLVD WIDEN FROM DOHENY DR TO WILSHIRE BLVD (WIDEN FROM 4 TO 5)	WIDEN FROM 4 TO 5 LANES	√	√			√					

* S - State Hwy, L - Local Hwy, T - Transit
** The actual completion date may vary, e.g. a project completed in 2016 would have a network year of 2020.

AGOURA HILLS	1A1001	LA0G230	101	33.0	34.4	US-101	PALO COMADO CANYON BRIDGE AT CHESEBRO RD		U.S. 101 FREEWAY AND PALO COMADO CANYON ROAD BRIDGE-AT CHESEBRO ROAD (PM 33.0/34.4). WIDENING OF BRIDGE FROM 2-LANES TO 4-LANES, CONSTRUCTION OF SIDEWALKS AND BIKE LANES, MODIFICATION OF ON/OFF RAMPS, AND MODIFICATION OF VARIOUS INTERSECTIONS.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CALIFORNIA DIVISION
650 Capitol Mall, Suite 4-100
Sacramento, CA. 95814

May 6, 2010

IN REPLY REFER TO
HDA-CA
Document #: S

Mr. Randall H. Iwasaki, Director
California Department of Transportation
1120 N Street
Sacramento, California 94274-0001

ATTENTION: Rachel Falsetti, Transportation Programming, MS-82

Mr. Hasan Ikhrata, Executive Director
Southern California Association of Governments
818 West 7th Street, 12th Floor
Los Angeles, CA 90017

Re: - 2008 SCAG Regional Transportation Plan Amendment #3
- 2008 SCAG Regional Transportation Improvement Program Amendment #34
- Conformity Determination for SCAG's Amendments

Dear Mr. Iwasaki and Mr. Ikhrata:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed our review of the Southern California Association of Governments' (SCAG) 2008 Regional Transportation Improvement Program (RTIP) Amendment #34 as requested by your letter of April 14, 2010.

We find SCAG's RTIP Amendment #34 was developed based on a continuing, cooperative, and comprehensive transportation planning process in accordance with 23 USC 134 & 135, 49 USC 5303-5305, and 23 CFR 450. The California Department of Transportation assures this amendment has met the financial constraint requirements included in our transportation planning regulations, i.e. 23 CFR 450.324(e).

MOVING THE
AMERICAN
ECONOMY

The FHWA and the FTA have also completed our review of the conformity determination for the SCAG Amendment #3 to the 2008 Regional Transportation Plan (RTP), *Making the Connections,* and Amendment #34 to the 2008 RTIP. A FTA/FHWA air quality conformity determination is required for these Amendments pursuant to the Environmental Protection Agency's (EPA) *Transportation Conformity Rule*, 40 CFR Parts 51 and 93, and the United States Department of Transportation's *Metropolitan Planning Rule*, 23 CFR Part 450.

On April 1, 2010, SCAG adopted Amendment #3 to the 2008 RTP and Amendment #34 to the 2008 RTIP and made the corresponding conformity determinations via Resolution 10-518-01. The conformity analysis submitted by SCAG indicates that all air quality conformity requirements have been met. Based on our review, we find that Amendment #3 to the 2008 RTP and Amendment #34 to the 2008 RTIP conform to the applicable state implementation plan in accordance with the provisions of 40 CFR Parts 51 and 93. In accordance with the July 15, 2004, *Memorandum of Understanding (MOU) between the Federal Highway Administration, California Division and the Federal Transit Administration, Region IX*, the FTA has concurred with this conformity determination. Additionally, this conformity determination was made after consultation with the EPA, Region 9 office.

This letter constitutes approval of Federal Statewide Transportation Improvement Program (FSTIP) Amendment #34. The SCAG RTIP Amendment #34 is approved and included into California's 2009 FSTIP, with the understanding the eligibility of individual projects is subject to the applicant's satisfaction of all FTA and FHWA administrative requirements.

If you have any questions regarding this approval, please do not hesitate to contact Ms. Michelle Noch of the FHWA Los Angeles Metropolitan Office at (213) 202-3953 or Mr. Ted Matley of the FTA at (415) 744-2590.

Sincerely,

For
Walter "Butch" Waidelich
Division Administrator
Federal Highway Administration

Leslie Rogers
Regional Administrator
Federal Transit Administration

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CALIFORNIA DIVISION
650 Capitol Mall, Suite 4-100
Sacramento, CA. 95814

December 8, 2010

IN REPLY REFER TO
HDA-CA

Mr. Hasan Ikhrata, Executive Director
Southern California Association of Governments
818 West 7th Street, 12th Floor
Los Angeles, CA 90017

Re: Conformity Determination for 2008 SCAG Regional Transportation Plan Amendment #4

Dear Mr. Ikhrata:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed our review of the conformity determination for the Southern California Association of Governments' (SCAG) Amendment #4 to the 2008 Regional Transportation Plan (RTP), *Making the Connections* as requested by your letter of November 5, 2010.

A FTA/FHWA air quality conformity determination is required for this Amendment pursuant to the Environmental Protection Agency's (EPA) *Transportation Conformity Rule*, 40 CFR Parts 51 and 93, and the United States Department of Transportation's *Metropolitan Planning Rule*, 23 CFR Part 450.

On November 4, 2010, SCAG adopted Amendment #4 to the 2008 RTP and made the corresponding conformity determinations via Resolution 10-524-01. The conformity analysis submitted by SCAG indicates that all air quality conformity requirements have been met. Based on our review, we find that Amendment #4 to the 2008 RTP conform to the applicable state implementation plan in accordance with the provisions of 40 CFR Parts 51 and 93. In accordance with the July 15, 2004, *Memorandum of Understanding (MOU) between the Federal Highway Administration, California Division and the Federal Transit Administration, Region IX*, the FTA has concurred with this conformity determination. Additionally, this conformity determination was made after consultation with the EPA, Region 9 office.

If you have any questions regarding this conformity, please do not hesitate to contact Ms. Aimee Kratovil of the FHWA California Division Office at (916) 498-5866 or Mr. Ted Matley of the

MOVING THE
AMERICAN
ECONOMY

FTA at (415) 744-2590.

Sincerely,

S/Leslie Rogers

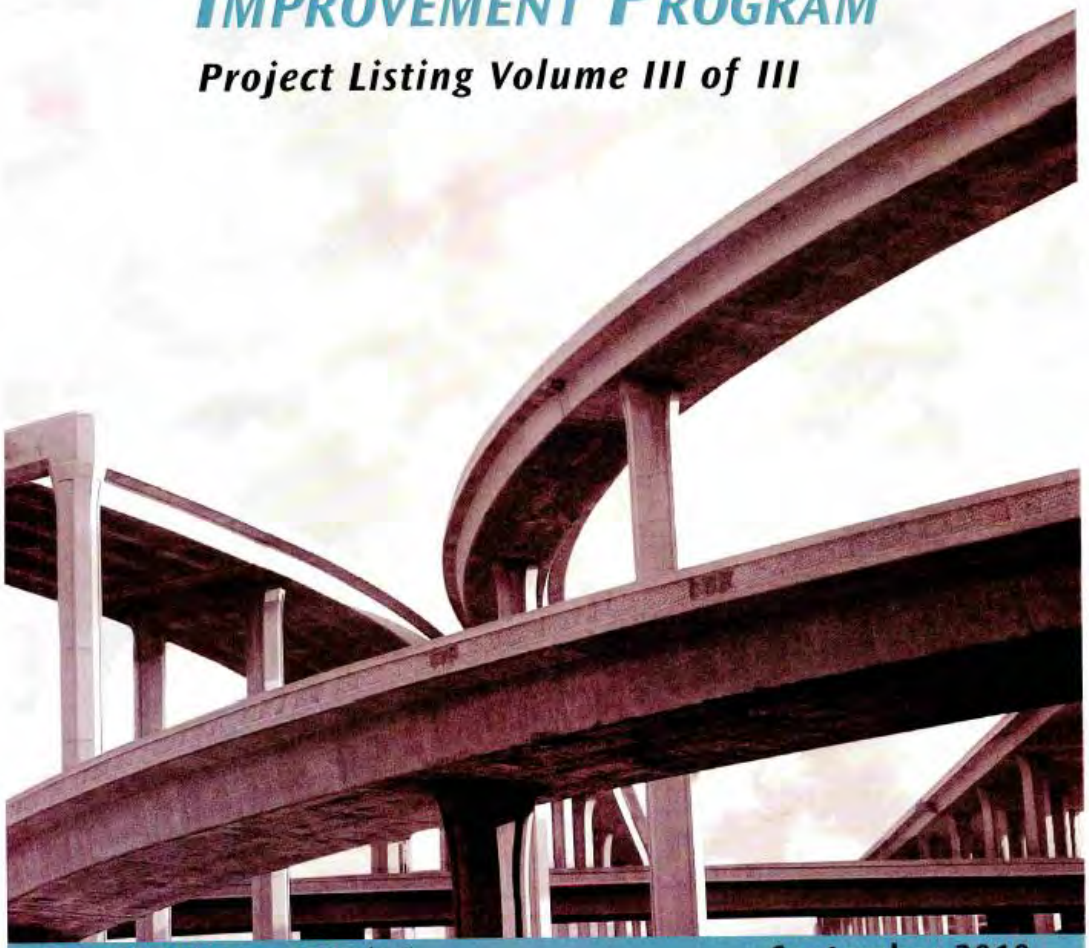
Leslie Rogers
Regional Administrator
Federal Transit Administration

For
Walter "Butch" Waidelich
Division Administrator
Federal Highway Administration

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

2011 FINAL FEDERAL TRANSPORTATION IMPROVEMENT PROGRAM

Project Listing Volume III of III



FY 2010/11 – 2015/16

September 2010

2011

FEDERAL TRANSPORTATION IMPROVEMENT PROGRAM

(FISCAL YEAR 2010/11-2015/16)

PROJECT LISTING

(Volume III of III)

September 2010

SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

Final 2011 Federal Transportation Improvement Program

Los Angeles County Project Listing
State Highway
Cost in Thousands

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
LA0D31	Los Angeles	SCAB		1M	NCR88	101	15.3	16.1	S	NON-EXEMPT	0
Description:							PTC	11,993	Agency	CALTRANS	

Route 101: CONSTRUCT ONE ADDITIONAL LANE FOR BOTH NORTH AND SOUTH BOUND OFF-RAMPS AT VAN NUYS BLVD. (RIP 1 M, IIP 8 M) (EA # 199630) (PPNO 2789) (DEMO= NAT. CORRIDOR PLANNING AND BORDER DEV.)

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
NATIONAL HWY SYSTEM - IIP			8,417	8,417		8,417						8,417
STATE CASH - IIP	2,171	314	1,091	3,576	2,485	1,091						3,576
LA0D31 Total	2,171	314	9,508	11,993	2,485	9,508						11,993

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
LA0G230	Los Angeles	SCAB		1AL04	CAR75	101	33	34.4	S	NON-EXEMPT	0
Description:							PTC	21,500	Agency	AGOURA HILLS	

U.S. 101 FREEWAY AND PALO COMADO CANYON ROAD BRIDGE-AT CHESEBRO ROAD (PM 33.0/34.4). Widening of bridge from 2-lanes to 4-lanes, construction of sidewalks and bike lanes, modification of on/off ramps, and modification of various intersections.

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
CITY FUNDS	1,500		20,000	21,500	1,500		20,000					21,500
LA0G230 Total	1,500		20,000	21,500	1,500		20,000					21,500

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
LA0G208	Los Angeles	SCAB		1OM0702	STUDY	101	65	65	S	EXEMPT	0
Description:							PTC	6,580	Agency	CALABASAS	

Lost Hills Road Bridge & US 101 Interchange Study project - will conduct the EIR and PS&E for the the proposed replacement of the existing bridge and interchange.

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
CITY FUNDS	2,580			2,580				1,080	1,500			2,580
LA0G208 Total	2,580			2,580				1,080	1,500			2,580

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
LAE1609	Los Angeles	SCAB		LAE1609	PLN40	105	1.6	2	S	EXEMPT - 93.126	0
Description:							PTC	400	Agency	LOS ANGELES, CITY OF	

Route 105: STUDY REPORT FOR INTERCHANGE IMPROVEMENTS AT LAX AIRPORT (E/P, PS/E ONLY)

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
DEMO-SAFETEA-LU	320			320		320						320
AGENCY	80			80		80						80
LAE1609 Total	400			400		400						400

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
LAF1204	Los Angeles	SCAB		LAF1204	CAR63	118	4.8	4.82	S	NON-EXEMPT	0
Description:							PTC	1,055	Agency	LOS ANGELES, CITY OF	

Route 118: 118 Freeway Westbound Off-Ramp at Tampa Av. This project will extend the right-turn only from the WB SR-118 off-ramp at Tampa Av and will install an additional SB left-turn lane on Tampa at the EB SR-118 on-ramp.

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
CITY FUNDS	83		285	368		23	60	93	192			368

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

Adopted 2011 Federal Transportation Improvement Program

Los Agneles County
State Highway
Including Amendments 1-7 and 9
(In 000`s)

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
LA0B416	Los Angeles	SCAB		REG0701	NCR27	101	.8	1.2	S	TCM Committed	0
Description:							PTC	3,916	Agency	LOS ANGELES, CITY OF	

Route 101: IN LOS ANGELES - DOWNTOWN OVER FREEWAY 101 - PEDESTRIAN BRIDGE ENHANCEMENT

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
LOCAL TRANS FUNDS			2,696	2,696	2,696							2,696
STP ENHANCE-IIP TEA			1,220	1,220	1,220							1,220
LA0B416 Total			3,916	3,916	3,916							3,916

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
LA0D31	Los Angeles	SCAB	L278	LA0D31	NCR88	101	15.3	16.1	S	NON-EXEMPT	2
Description:							PTC	11,993	Agency	CALTRANS	

Route 101: CONSTRUCT ONE ADDITIONAL LANE FOR BOTH NORTH AND SOUTH BOUND OFF-RAMPS AT VAN NUYS BLVD. (RIP 1 M, IIP 8 M) (EA # 199630) (PPNO 2789) (DEMO= NAT. CORRIDOR PLANNING AND BORDER DEV.)

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
NATIONAL HWY SYSTEM - IIP			8,417	8,417		8,417						8,417
STATE CASH - IIP	2,171	314	1,091	3,576	2,485	1,091						3,576
LA0D31 Total	2,171	314	9,508	11,993	2,485	9,508						11,993

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
LA0G230	Los Angeles	SCAB		1AL04	CAR75	101	33	34.4	S	NON-EXEMPT	0
Description:							PTC	21,500	Agency	AGOURA HILLS	

U.S. 101 FREEWAY AND PALO COMADO CANYON ROAD BRIDGE-AT CHESEBRO ROAD (PM 33.0/34.4). Widening of bridge from 2-lanes to 4-lanes, construction of sidewalks and bike lanes, modification of on/off ramps, and modification of various intersections.

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
CITY FUNDS	1,500		20,000	21,500	1,500		20,000					21,500
LA0G230 Total	1,500		20,000	21,500	1,500		20,000					21,500

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amendment
LA0D344	Los Angeles	SCAB	L400	LA0D344	CAR75	101	36.1	36.3	S	NON-EXEMPT	0
Description:							PTC	11,072	Agency	AGOURA HILLS	

WIDENING OF THE REYES ADOBE ROAD OVERCROSSING OF THE 101 FREEWAY FROM 3 LANES TO 6 LANES, ALONG WITH BIKE LANES AND SIDEWALKS

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	Total
ARRA - REGIONAL SURFACE TRANSPORTATION PROGRAM			690	690	690							690
FHWA CORRIDORS AND BORDERS PROGRAM			1,282	1,282	1,282							1,282
INTERSTATE MAINTENANC - EARMARK			732	732	732							732
TRANS AND COMM AND SYS PRESRV PILOT PROG			226	226	226							226
AGENCY			726	726	726							726
CITY FUNDS	940		4,032	4,972	4,972							4,972

U.S. Department of Transportation
Federal Highway Administration

Federal Highway Administration
California Division

650 Capitol Mall, Suite 4-100
Sacramento CA 95814
(916) 498-5001
(916) 498-5008 fax

May 12, 2011

In Reply Refer To:
HDA-CA

Ms. Cindy McKim, Director
California Department of Transportation
1120 N Street
Sacramento, CA 95814

Attention: Federal Resources Office, M.S. 82
For Rachel Falsetti, Division of Transportation Programming

Dear Ms. McKim:

SUBJECT: SCAG 2010/11 – 2013/14 FTIP/FSTIP AMENDMENT NO. 11-06 AND CONFORMITY DETERMINATION

The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) have completed our reviews of Amendment No. 11-06 to the Southern California Association of Governments' (SCAG) 2010/11 – 2013/14 Federal Transportation Improvement Program (FTIP) that was submitted by your letter dated April 25, 2011. As detailed in your letter's enclosure, this amendment requests to add fifty-four (54) new individual and two (2) new grouped project listings, to modify sixty-six (66) individual and thirteen (13) grouped project listings previously approved for inclusion in the 2010/11 – 2013/14 Federal Statewide Transportation Improvement Program (FSTIP), and to remove ten (10) individual project listings previously approved for inclusion in SCAG's FTIP and California's FSTIP.

We have determined that the added project listings and modifications, as part of SCAG's FTIP Amendment No. 11-06, do not require a new regional emissions analysis because each of the projects was found to conform as part of a previous analysis. Acceptance of this amendment is pursuant to a joint FHWA and FTA air quality conformity determination for the amended SCAG FTIP, which is required by the U.S. Environmental Protection Agency's (EPA) transportation conformity rule – via 40 Code of Federal Regulations (CFR) Part 51 and 40 CFR § 93.122(g) – and the FHWA/FTA Metropolitan Planning Regulations – 23 CFR § 450. This finding has been coordinated with Region IX of the EPA in accordance with the procedures outlined in the *National Memorandum of Understanding (MOU) between the Department of Transportation (DOT) and EPA on Transportation Conformity*, dated April 25, 2000. Accordingly, we find that the SCAG 2010/11 – 2013/14 FTIP, including Amendment No. 11-06, conforms to the applicable State Implementation Plan (SIP) for air quality.

Pursuant to the July 15, 2004 *MOU, between the FHWA – California Division and FTA – Region IX*, and based on our review of information submitted with the State's proposed 2010/11 – 2013/14 FSTIP, which includes revenues, proposed project funding information to demonstrate financial constraint, and statewide and metropolitan planning process documentation, we accept these FSTIP modifications proposed for the SCAG region in accordance with the Final Rule on Statewide and Metropolitan

Transportation Planning that was published in the February 14, 2007 Federal Register. We have determined that the amended SCAG FTIP, including Amendment No. 11-06, is financially constrained as required by the Federal surface transportation programs authorizing legislation and statewide planning, metropolitan planning, and programming regulations. SCAG's FTIP was developed through a continuing, cooperative, and comprehensive transportation planning process in accordance with the metropolitan transportation planning provisions of 23 United States Code (U.S.C.) § 134 and 49 U.S.C. Chapter 53. Any project or project phase, however, listed in SCAG's FTIP that is not included in SCAG's Regional Transportation Plan (RTP) is not approved for inclusion in the FSTIP pursuant to 23 CFR § 450.216(k) and § 450.324(g).

Project listings and/or project phases that indicate no funds are proposed for obligation during the four-year SCAG FTIP period cannot be advanced to implementation without an action by the FHWA and FTA on the FSTIP pursuant to 23 CFR §§ 450.216(l) and 450.328(e). In addition, project or project phase funding included in SCAG's FTIP proposed for obligation outside the fiscally constrained portion of the FTIP is accepted by the FHWA and FTA as "informational" in accordance with 23 CFR §§ 450.216(a) and 450.324(a).

We are approving the 2010/11 – 2013/14 FSTIP with the understanding that the eligibility of individual projects for funding is subject to the applicant's satisfaction of all administrative and statutory requirements. This joint FHWA and FTA approval of the FSTIP does not constitute an eligibility determination for the federal funds proposed for obligation on the listed projects. If you have any questions or need additional information concerning our FSTIP approval for this SCAG FTIP amendment, please contact Michael Morris of the FHWA California Division office at (916) 498-5887, or by email at michael.morris@dot.gov; or Ted Matley of the FTA Region IX office at (415) 744-2590, or by email at ted.matley@dot.gov.

Sincerely,

/s/ Leslie T. Rogers

Leslie T. Rogers
Regional Administrator
Federal Transit Administration

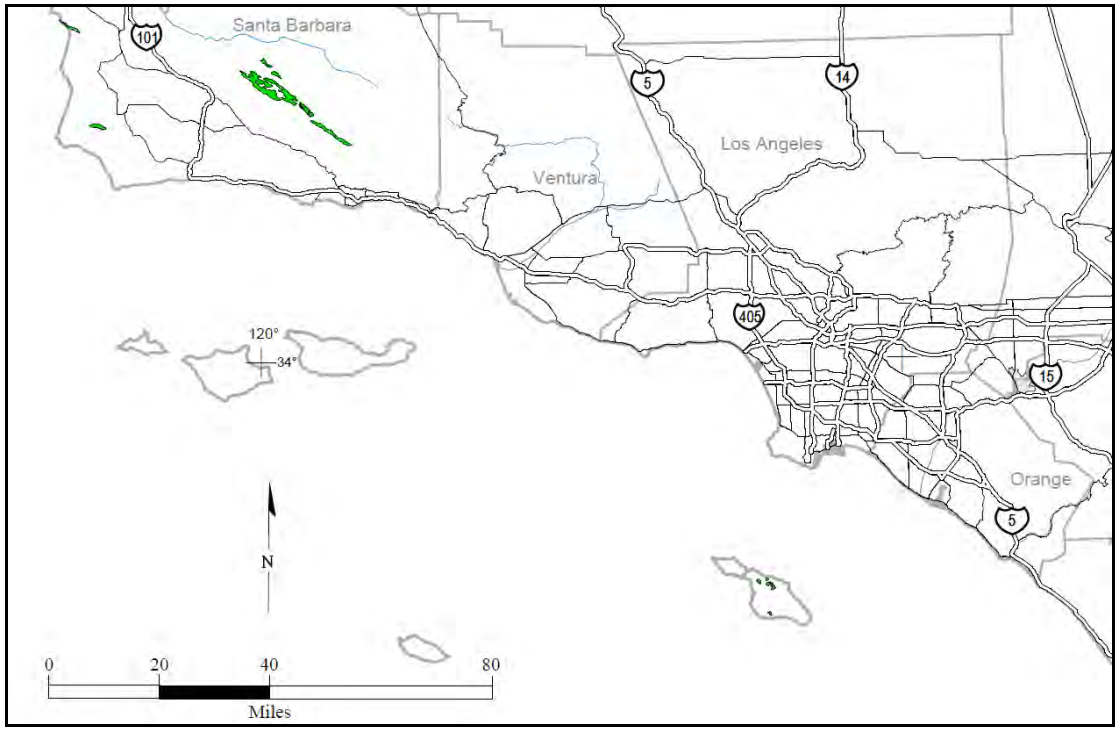
For
Robert F. Tally, Jr.
Acting Division Administrator
Federal Highway Administration

cc: (email)
Hasan Ikhrata, SCAG
Rich Macias, SCAG
Rosemary Ayala, SCAG
Ted Matley, FTA Region IX
Abhijit Bagde, Caltrans Programming (abhijit_bagde@dot.ca.gov)
Muhaned Aljabiry, Caltrans (muhaned_aljabiry@dot.ca.gov)
Karina O'Connor, EPA Region IX
Lisa Hanf, EPA Region IX
Aimee Kratovil, FHWA-CA
Michael Morris, FHWA-CA

cc:
SCAG 2010/11 FTIP Binder

MM/

APPENDIX C
AREAS KNOWN/LIKELY TO CONTAIN NATURALLY OCCURRING ASBESTOS
Los Angeles County & Surrounding Areas



State of California. Department of Conservation, Division of Mines and Geology. August 2000. A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos. Open File Report 2000-19.

APPENDIX D
EMISSIONS MODELING

LONG-TERM OPERATIONAL EMISSIONS

EMISSIONS SUMMARY

	CO	ROG	NOX	PM10 EX	PM10 B&T	PM10 RD		PM2.5 EX	PM2.5 B&T	PM2.5 RD		CO2	CH4
2010 EXISTING													
RUNNING EXHAUST:	34.23	3.04	10.53	0.62				0.57				8327.72	0.12
BRAKE & TIRE WEAR:					0.26				0.09				
REENTRAINED ROAD PM:						1.63				0.41			
INTERSECTION IDLE EMISSIONS:	1.16	0.21	0.96	0.01				0.01				81.58	0.01
TOTAL	35.39	3.24	11.49	0.64	0.26	1.63	2.52	0.59	0.09	0.41	1.09	8409.31	0.13
TOTAL (TONS/YR):	6.46	0.59	2.10	0.12	0.05	0.30	0.46	0.11	0.02	0.07	0.20	1534.70	0.02
TOTAL (MTONS/YR):												1392.28	0.02
TOTAL (MTCO2E):												1462.35	
2015 NO BUILD	CO	ROG	NOX	PM10 EX	PM10 B&T	PM10 RD		PM2.5 EX	PM2.5 B&T	PM2.5 RD		CO2	CH4
RUNNING EXHAUST:	32.47	2.29	7.79	0.62				0.57				9473.69	0.45
BRAKE & TIRE WEAR:					0.27				0.10				
REENTRAINED ROAD PM:						1.73				0.43			
INTERSECTION IDLE EMISSIONS:	0.86	0.15	0.82	0.01				0.01				65.19	0.01
TOTAL	33.33	2.43	8.61	0.63	0.27	1.73	2.62	0.57	0.10	0.43	1.10	9538.87	0.46
TOTAL (TONS/YR):	6.08	0.44	1.57	0.11	0.05	0.32	0.48	0.10	0.02	0.08	0.20	1740.84	0.08
TOTAL (MTONS/YR):												1584.17	0.08
TOTAL (MTCO2E):												1664.96	
2015 BUILD	CO	ROG	NOX	PM10 EX	PM10 B&T	PM10 RD		PM2.5 EX	PM2.5 B&T	PM2.5 RD		CO2	CH4
RUNNING EXHAUST:	32.47	2.29	7.79	0.62				0.57				9473.69	0.45
BRAKE & TIRE WEAR:					0.27				0.10				
REENTRAINED ROAD PM:						1.73				0.43			
INTERSECTION IDLE EMISSIONS:	0.65	0.11	0.62	0.01				0.01				49.17	0.00
TOTAL	33.12	2.40	8.41	0.62	0.27	1.73	2.62	0.57	0.10	0.43	1.10	9522.86	0.45
TOTAL (TONS/YR):	6.04	0.44	1.54	0.11	0.05	0.32	0.48	0.10	0.02	0.08	0.20	1737.92	0.08
TOTAL (MTONS/YR):												1581.51	0.08
TOTAL (MTCO2E):												1662.17	

EMISSIONS SUMMARY (CONT.)

2035 NO BUILD	CO	ROG	NOX	PM10 EX	PM10 B&T	PM10 RD		PM2.5 EX	PM2.5 B&T	PM2.5 RD		CO2	CH4
RUNNING EXHAUST:	18.36	6.78	4.16	0.90				0.84				15510.95	0.43
BRAKE & TIRE WEAR:					0.34				0.12				
REENTRAINED ROAD PM:						2.14				0.54			
INTERSECTION IDLE EMISSIONS:	3.35	0.55	3.40	0.01				0.01				263.49	0.02
TOTAL	21.71	7.33	7.57	0.91	0.34	2.14	3.39	0.85	0.12	0.54	1.51	15774.44	0.45
TOTAL (TONS/YR):	3.96	1.34	1.38	0.17	0.06	0.39	0.62	0.16	0.02	0.10	0.28	2878.84	0.08
TOTAL (MTONS/YR):												2619.74	0.07
TOTAL (MTCO2E):												2752.30	

2035 BUILD	CO	ROG	NOX	PM10 EX	PM10 B&T	PM10 RD		PM2.5 EX	PM2.5 B&T	PM2.5 RD		CO2	CH4
RUNNING EXHAUST:	18.36	6.78	4.16	0.90				0.84				15510.95	0.43
BRAKE & TIRE WEAR:					0.34				0.12				
REENTRAINED ROAD PM:						2.14				0.54			
INTERSECTION IDLE EMISSIONS:	1.85	0.30	1.88	0.01				0.01				145.29	0.01
TOTAL (LBS/DAY):	20.21	7.09	6.04	0.91	0.34	2.14	3.39	0.85	0.12	0.54	1.50	15656.24	0.44
TOTAL (TONS/YR):	3.69	1.29	1.10	0.17	0.06	0.39	0.62	0.15	0.02	0.10	0.27	2857.26	0.08
TOTAL (MTONS/YR):												2600.11	0.07
TOTAL (MTCO2E):												2731.65	

NOTES:

Idle emissions are based on AM & PM pk-hr delay. Off-peak hour vehicle delays are not considered substantial and, therefore, are not included in the emissions calculations.

Reentrained road PM calculated using methodology obtained from EPA AP42, Miscellaneous Sources. Chapter 13.2.1, Paved Roads. January 2011.

MTCO2e = Metric tons of CO2 equivalent. Calculated based on a global warming potential of 21 for CH4 and 1 for CO2. Includes US EPA assumption that GHG emissions from other pollutants (CH4, N2O, and hydrofluorcarbons) from leaking air conditioners account for 5 percent of emissions from vehicles.

RUNNING EXHAUST & BRAKE/TIRE WEAR PM EMISSIONS

SUMMARY OF TRAFFIC DATA USED FOR EMISSIONS CALCULATIONS

	SPEED			AVERAGE DAILY TRIPS			DISTANCE OF TRAVEL	
	EX	2015	2035	EX	2015	2035	METERS	MILES
NB ON RAMP	57.6	57.2	55	2850	2960	3380	150	0.09
NB OFF RAMP	57.3	56.8	54.3	4950	5140	5880	150	0.09
SB ON RAMP	56.9	56.4	53.3	5200	5400	6180	150	0.09
SB OFF RAMP	57.5	57.3	55.2	2450	2540	2910	150	0.09
PALO COMADO RD	15.5	14	8	10627	11400	14820	505	0.31
CHESEBRO RD	15	14.5	10.5	7940	8300	9490	125	0.08

ADT volumes for ramps and Chesebro Road were calculated assuming peak-hour volumes represent approximately 10 percent of the daily volumes. This assumption is consistent with the assumption used for the calculation of ADT volumes for Palo Comado Canyon Road, as identified in the traffic analysis prepared for this project.

Sources: Kimley Horn and Associates, Inc. May 2011. *Supplemental Analysis, US 101/Palo Comado Canyon Road PA/ED, Traffic Forecasts for Air Quality Analysis; Kimley-Horn and Associates, Inc. June 21, 2011.Memorandum: Palo Comado Canyon Road/US 101 Interchange Improvements Project-PA&ED ADT and Peak Hour Traffic Volumes.*

OPERATIONAL MOBILE SOURCE EMISSIONS

YEAR 2010

EMFAC2007 (v2.3) EMISSION FACTORS (g/mi): 2010

SPEED	CO (60F)	ROG (85F)	NOX (75F)	PM10 EX	PM10 B&T	PM2.5 EX	PM2.5 B&T	CO2	CH4
58	2.655	0.122	0.847	0.029	0.022	0.027	0.008	498.507	0.027
57	2.621	0.119	0.834	0.029	0.022	0.026	0.008	490.874	0.026
57	2.621	0.119	0.834	0.029	0.022	0.026	0.008	490.874	0.026
58	2.655	0.122	0.847	0.029	0.022	0.027	0.008	498.507	0.027
16	3.045	0.308	0.925	0.062	0.022	0.057	0.008	791.691	0.052
15	3.121	0.336	0.957	0.066	0.022	0.061	0.008	827.065	0.057

EMISSIONS (lbs/day): 2010

	MILES/ DAY	CO (60F)	ROG (85F)	NOX (75F)	PM10 EX	PM10 B&T	PM10 RD	PM2.5 EX	PM2.5 B&T	PM2.5 RD*	CO2	CH4
NB ON RAMP	265.64	1.5213	0.0699	0.4853	0.0166	0.0126	0.0802	0.0155	0.0046	0.0201	285.64	0.02
NB OFF RAMP	461.37	2.6084	0.1184	0.8300	0.0289	0.0219	0.1393	0.0259	0.0080	0.0348	488.51	0.01
SB ON RAMP	484.67	2.7401	0.1244	0.8719	0.0303	0.0230	0.1464	0.0272	0.0084	0.0366	513.18	0.01
SB OFF RAMP	228.35	1.3078	0.0601	0.4172	0.0143	0.0108	0.0690	0.0133	0.0039	0.0172	245.55	0.02
PALO COMADO RD	3334.67	21.9027	2.2154	6.6535	0.4460	0.1582	1.0071	0.4100	0.0575	0.2518	5694.63	0.03
CHESEBRO RD	616.71	4.1518	0.4470	1.2731	0.0878	0.0293	0.1862	0.0811	0.0106	0.0466	1100.22	0.03
	5391.41	34.2320	3.0352	10.5310	0.6238	0.2558	1.6282	0.5730	0.0930	0.4070	8327.72	0.12
										TONS:	4.16	0.00
										MTONS:	3.78	0.00
										MTCO2e**:	3.93	

RUNNING EXHAUST & BRAKE/TIRE WEAR PM EMISSIONS (CONT.)

YEAR 2015		EMFAC2007 (v2.3) EMISSION FACTORS (g/mi): 2015										
	SPEED	CO (60F)	ROG (85F)	NOX (75F)	PM10 EX	PM10 B&T		PM2.5 EX	PM2.5 B&T		CO2	CH4
	57	1.687	0.074	0.537	0.024	0.022		0.022	0.008		501.98	0.019
	57	1.687	0.074	0.537	0.024	0.022		0.022	0.008		494.39	0.019
	56	1.675	0.072	0.53	0.024	0.022		0.021	0.008		494.39	0.019
	57	1.687	0.074	0.537	0.024	0.022		0.022	0.008		501.98	0.019
	14	2.983	0.228	0.67	0.06	0.022		0.055	0.008		870.181	0.043
	15	2.892	0.208	0.646	0.056	0.022		0.051	0.008		831.657	0.04
	MILES/	EMISSIONS (lbs/day): 2015										
	DAY	CO (60F)	ROG (85F)	NOX (75F)	PM10 EX	PM10 B&T	PM10 RD	PM2.5 EX	PM2.5 B&T	PM2.5 RD*	CO2	CH4
NB ON RAMP	275.89	1.0039	0.0440	0.3196	0.0143	0.0131	0.0833	0.0131	0.0048	0.0208	298.73	0.01
NB OFF RAMP	479.08	1.7433	0.0765	0.5549	0.0248	0.0227	0.1447	0.0227	0.0083	0.0362	510.90	0.02
SB ON RAMP	503.31	1.8185	0.0782	0.5754	0.0261	0.0239	0.1520	0.0228	0.0087	0.0380	536.74	0.02
SB OFF RAMP	236.74	0.8615	0.0378	0.2742	0.0123	0.0112	0.0715	0.0112	0.0041	0.0179	256.34	0.01
PALO COMADO RD	3577.23	23.0174	1.7593	5.1699	0.4630	0.1698	1.0803	0.4244	0.0617	0.2701	6714.50	0.33
CHESEBRO RD	644.67	4.0216	0.2892	0.8983	0.0779	0.0306	0.1947	0.0709	0.0111	0.0487	1156.49	0.06
	5716.93	32.4662	2.2850	7.7923	0.6182	0.2713	1.7265	0.5652	0.0987	0.4316	9473.69	0.45
										TONS:	4.74	0.00
										MTONS:	4.30	0.00
										MTCO2e**:	4.43	

YEAR 2035		EMFAC2007 (v2.3) EMISSION FACTORS (g/mi): 2035										
	SPEED	CO (60F)	ROG (85F)	NOX (75F)	PM10 EX	PM10 B&T		PM2.5 EX	PM2.5 B&T		CO2	CH4
	55	0.689	0.03	0.161	0.017	0.022		0.016	0.008		509.76	0.008
	54	0.687	0.03	0.16	0.017	0.022		0.016	0.008		502.14	0.008
	53	0.687	0.029	0.159	0.017	0.022		0.016	0.008		502.14	0.008
	55	0.687	0.03	0.161	0.017	0.022		0.016	0.008		509.76	0.008
	8	1.379	0.134	0.313	0.074	0.022		0.069	0.008		1198.913	0.035
	11	1.253	3.353	0.273	0.059	0.022		0.055	0.008		1020.425	0.029
	MILES/	EMISSIONS (lbs/day): 2035										
	DAY	CO (60F)	ROG (85F)	NOX (75F)	PM10 EX	PM10 B&T	PM10 RD	PM2.5 EX	PM2.5 B&T	PM2.5 RD*	CO2	CH4
NB ON RAMP	315.04	0.4682	0.0204	0.1094	0.0116	0.0149	0.0951	0.0109	0.0054	0.0238	346.40	0.01
NB OFF RAMP	548.05	0.8121	0.0355	0.1891	0.0201	0.0260	0.1655	0.0189	0.0095	0.0414	593.61	0.01
SB ON RAMP	576.01	0.8536	0.0360	0.1976	0.0211	0.0273	0.1740	0.0199	0.0099	0.0435	623.90	0.01
SB OFF RAMP	271.23	0.4019	0.0176	0.0942	0.0099	0.0129	0.0819	0.0094	0.0047	0.0205	298.23	0.00
PALO COMADO RD	4650.40	13.8328	1.3442	3.1397	0.7423	0.2207	1.4044	0.6921	0.0802	0.3511	12026.38	0.35
CHESEBRO RD	737.10	1.9922	5.3311	0.4341	0.0938	0.0350	0.2226	0.0874	0.0127	0.0557	1622.43	0.05
	7097.83	18.3609	6.7847	4.1641	0.8988	0.3368	2.1435	0.8386	0.1225	0.5359	15510.95	0.43
										TONS:	7.76	0.00
										MTONS:	7.04	0.00
										MTCO2e**:	7.24	

*U.S. Environmental Protection Agency (EPA). *AP42, Miscellaneous Sources. Chapter 13.2.1, Paved Roads. January 2011.*

**Adjusted based on a global warming potential of 21 for CH4 and 1 for CO2. Includes US EPA assumption that GHG emissions from other pollutants - CH4, N2O, and hydrofluorcarbons (HFCs) from leaking air conditioners account for 5 percent of emissions from vehicles.

Paved Road Dust

Silt Loading	0.037	g/m2
Vehicle Weight:	2.7	tons
Particle Size Multiplier:	1	PM10
	0.25	PM2.5
	grams PM10/mile	
	PM10	PM2.5
Emission Factors:	0.14	0.03

**EPA AP42, Miscellaneous Sources. Chapter 13.2.1, Paved Roads. January 2011.*

Vehicle weight derived from ARB's Section 7.9, Entrained Paved Road Dust Paved Road Travel (July 1997) for Los Angeles County.

2010		**ROAD DUST (LBS/DAY)**	
	MILES/DAY	**PM10**	**PM2.5**
NB ON RAMP	265.64	0.08	0.02
NB OFF RAMP	461.37	0.14	0.03
SB ON RAMP	484.67	0.15	0.04
SB OFF RAMP	228.35	0.07	0.02
PALO COMADO RD	3334.67	1.01	0.25
CHESEBRO RD	616.71	0.19	0.05
	5391.41	1.63	0.41

2015		**ROAD DUST (LBS/DAY)**	
	MILES/DAY	**PM10**	**PM2.5**
NB ON RAMP	275.89	0.08	0.02
NB OFF RAMP	479.08	0.14	0.04
SB ON RAMP	503.31	0.15	0.04
SB OFF RAMP	236.74	0.07	0.02
PALO COMADO RD	3577.23	1.08	0.27
CHESEBRO RD	644.67	0.19	0.05
	5716.93	1.73	0.43

2035		**ROAD DUST (LBS/DAY)**	
	MILES/DAY	**PM10**	**PM2.5**
NB ON RAMP	315.04	0.10	0.02
NB OFF RAMP	548.05	0.17	0.04
SB ON RAMP	576.01	0.17	0.04
SB OFF RAMP	271.23	0.08	0.02
PALO COMADO RD	4650.40	1.40	0.35
CHESEBRO RD	737.10	0.22	0.06
	7097.83	2.14	0.54

IDLE EMISSIONS

AM PEAK HOUR - VEHICLE DELAY SUMMARY

	DELAY VEHICLE COUNT			COMPARISON OF INTERSECTION AVG VEHICLE DELAY (SECONDS) - AM PEAK-HOUR						
					2015			2035		
INTERSECTION	EXISTING VEHICLES	2015 VEHICLES	2035 VEHICLES	EXISTING	NO BUILD	BUILD	CHANGE IN DELAY	NO BUILD	BUILD	CHANGE IN DELAY
DRIVER at CHESEBRO	1420	1484	1785	54	61.2	61.2	0.0	128.1	128.1	0.0
PALO COMADO at US101 NB RAMPS	591	461	818	53.7	52.3	7.6	-44.7	290.3	9.8	-280.5
DOROTHY DR at SB RAMPS	1037	879	1263	24.1	22.1	22.1	0.0	41.7	26.0	-15.7
PALO COMADO at CHESEBRO	274	287	395	20.7	19.0	19.1	0.1	63.2	63.2	0.0
AGOURA at CHESEBRO	577	602	889	9.5	9.3	9.3	0.0	13.2	13.2	0.0
OVERALL CHANGE/VEHICLE:							-44.6			-296.2

PM PEAK HOUR- VEHICLE DELAY SUMMARY

	DELAY VEHICLE COUNT			COMPARISON OF INTERSECTION AVG VEHICLE DELAY (SECONDS) - PM PEAK-HOUR						
					2015			2035		
INTERSECTION	EXISTING VEHICLES	2015 VEHICLES	2035 VEHICLES	EXISTING	NO BUILD	BUILD	CHANGE IN DELAY	NO BUILD	BUILD	CHANGE IN DELAY
DRIVER at CHESEBRO	1222	1278	1638	61.6	44.9	44.9	0.0	99.3	99.3	0.0
PALO COMADO at US101 NB RAMPS	730	805	939	190.9	69.1	8.0	-61.1	218.2	11.5	-206.7
DOROTHY DR at SB RAMPS	842	878	1112	17.8	13.4	13.4	0.0	26.3	24.3	-2.0
PALO COMADO at CHESEBRO	177	186	234	19.5	19.8	19.8	0.0	36.0	36.0	0.0
AGOURA at CHESEBRO	807	843	1240	15	12.0	12.0	0.0	26.3	26.3	0.0
OVERALL CHANGE/VEHICLE:							-61.1			-208.7

Note: Off-peak hour vehicle delays are not considered substantial and, therefore, are not included in the emissions analysis.

Source: *Supplemental Analysis, US 101/Palo Comado Canyon Road PA/ED, Traffic Forecasts for Air Quality Analysis (2010).*

IDLE EMISSIONS (CONT.)

YEAR 2010		EMFAC2007 (v2.3) EMISSION FACTORS (g/idle hr): 2010						
	SPEED	CO (60F)	ROG (85F)	NOX (75F)	PM10 EX	PM2.5 EX	CO2	CH4
	0	4.854	0.877	4.038	0.06	0.055	341.823	0.039
	G/SEC:	0.001	0.000	0.001	0.000	0.000	0.095	0.000
AM PKHR IDLE EMISSIONS EXISTING-NO BUILD:		0.430	0.078	0.357	0.005	0.005	30.261	0.003
PM PKHR IDLE EMISSIONS EXISTING-NO BUILD:		0.729	0.132	0.606	0.009	0.008	51.322	0.006
TOTAL (AM&PM PKHR):		1.159	0.209	0.964	0.014	0.013	81.583	0.009

YEAR 2015		EMFAC2007 (v2.3) EMISSION FACTORS (g/idle hr): 2015						
	SPEED	CO (60F)	ROG (85F)	NOX (75F)	PM10 EX	PM2.5 EX	CO2	CH4
	0	4.953	0.856	4.73	0.045	0.041	374.852	0.038
	G/SEC:	0.0013758	0.0002378	0.0013139	0.0000125	1.139E-05	0.1041256	1.056E-05
AM PKHR IDLE EMISSIONS EXISTING-NO BUILD:		0.441	0.076	0.421	0.004	0.004	33.379	0.003
PM PKHR IDLE EMISSIONS EXISTING-NO BUILD:		0.420	0.073	0.401	0.004	0.003	31.810	0.003
TOTAL-NO BUILD (AM&PM PKHR):		0.861	0.149	0.823	0.008	0.007	65.189	0.007
AM PKHR IDLE EMISSIONS EXISTING-BUILD:		0.379	0.065	0.362	0.003	0.003	28.655	0.003
PM PKHR IDLE EMISSIONS EXISTING-BUILD:		0.271	0.047	0.259	0.002	0.002	20.519	0.002
TOTAL-BUILD (AM&PM PKHR):		0.650	0.112	0.620	0.006	0.005	49.174	0.005

YEAR 2035		EMFAC2007 (v2.3) EMISSION FACTORS (g/idle hr): 2035						
	SPEED	CO (60F)	ROG (85F)	NOX (75F)	PM10 EX	PM2.5 EX	CO2	CH4
	0	5.51	0.896	5.592	0.021	0.022	433.164	0.04
	G/SEC:	0.0015306	0.0002489	0.0015533	5.833E-06	6.111E-06	0.1203233	1.111E-05
AM PKHR IDLE EMISSIONS EXISTING-NO BUILD:		1.874	0.305	1.902	0.007	0.007	147.351	0.014
PM PKHR IDLE EMISSIONS EXISTING-NO BUILD:		1.477	0.240	1.499	0.006	0.006	116.139	0.011
TOTAL-NO BUILD (AM&PM PKHR):		3.352	0.545	3.402	0.013	0.013	263.490	0.024
AM PKHR IDLE EMISSIONS EXISTING-BUILD:		1.033	0.168	1.049	0.004	0.004	81.227	0.008
PM PKHR IDLE EMISSIONS EXISTING-BUILD:		0.815	0.133	0.827	0.003	0.003	64.064	0.006
TOTAL-BUILD (AM&PM PKHR):		1.848	0.301	1.876	0.007	0.007	145.290	0.013

Emfac2007 does not identify an idle emission factor. For modeling comparison purposes idle emissions were calculated based on a vehicle speed "0."

Note: Off-peak hour vehicle delays are not considered substantial and, therefore, are not included in the emissions analysis.

SHORT-TERM CONSTRUCTION EMISSIONS

Road Construction Emissions Model Version 6.3.2

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Clear Data Input & User Overrides

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Input Type		
Project Name	Overpass Widening	
Construction Start Year	2013	Enter a Year between 2005 and 2025 (inclusive)
Project Type	3	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	6.0	months
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.06	miles
Total Project Area	0.3	acres
Maximum Area Disturbed/Day	0.3	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported		yd^3/day
Soil Exported		yd^3/day
Average Truck Capacity	20.0	yd^3 (assume 20 if unknown)

Road Construction Emissions Model, Version 6.3.2

Emission Estimates for ->	Overpass Widening			Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day	PM2.5 (lbs/day	PM2.5 (lbs/day	CO2 (lbs/day)
Grubbing/Land Clearing	3.3	14.1	28.2	4.1	1.1	3.0	1.7	1.0	0.6	3,153.6
Grading/Excavation	4.3	19.4	35.7	4.6	1.6	3.0	2.1	1.5	0.6	4,310.2
Drainage/Utilities/Sub-Grade	3.3	13.9	25.7	4.3	1.3	3.0	1.8	1.2	0.6	2,924.3
Paving	2.0	7.8	11.6	1.0	1.0	-	0.9	0.9	-	1,143.9
Maximum (pounds/day)	4.3	19.4	35.7	4.6	1.6	3.0	2.1	1.5	0.6	4,310.2
Total (tons/construction project)	0.2	1.0	1.9	0.3	0.1	0.2	0.1	0.1	0.0	221.9

Notes:	
Project Start Year ->	2013
Project Length (months) ->	6
Total Project Area (acres) ->	0
Maximum Area Disturbed/Day (acres) ->	0
Total Soil Imported/Exported (yd^3/day)->	0

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.

Road Construction Emissions Model

Version 6.3.2

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	PCC Rd S of US 101	
Construction Start Year	2013	Enter a Year between 2005 and 2025 (inclusive)
Project Type	2	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	6.0	months
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.13	miles
Total Project Area	0.9	acres
Maximum Area Disturbed/Day	0.2	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported		yd^3/day
Soil Exported		yd^3/day
Average Truck Capacity	20.0	yd^3 (assume 20 if unknown)

Clear Data Input & User Overrides

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Emission Estimates for ->	PCC Rd S of US 101			Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day	PM2.5 (lbs/day	PM2.5 (lbs/day	CO2 (lbs/day)
Grubbing/Land Clearing	3.3	14.3	28.4	3.4	1.2	2.2	1.5	1.1	0.5	3,177.7
Grading/Excavation	3.7	17.5	30.0	3.6	1.4	2.2	1.8	1.3	0.5	3,592.3
Drainage/Utilities/Sub-Grade	3.3	14.1	25.8	3.5	1.3	2.2	1.7	1.2	0.5	2,948.4
Paving	2.0	8.0	11.7	1.0	1.0	-	0.9	0.9	-	1,167.9
Maximum (pounds/day)	3.7	17.5	30.0	3.6	1.4	2.2	1.8	1.3	0.5	3,592.3
Total (tons/construction project)	0.2	1.0	1.7	0.2	0.1	0.1	0.1	0.1	0.0	201.4
Notes: Project Start Year ->	2013									
Project Length (months) ->	6									
Total Project Area (acres) ->	1									
Maximum Area Disturbed/Day (acres) ->	0									
Total Soil Imported/Exported (yd^3/day)->	0									

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.

Road Construction Emissions Model

Version 6.3.2

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	PCC Rd N of US101	
Construction Start Year	2013	Enter a Year between 2005 and 2025 (inclusive)
Project Type	2	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	6.0	months
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.13	miles
Total Project Area	0.6	acres
Maximum Area Disturbed/Day	0.1	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported		yd^3/day
Soil Exported		yd^3/day
Average Truck Capacity	20.0	yd^3 (assume 20 if unknown)

Clear Data Input & User Overrides

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Emission Estimates for ->	PCC Rd N of US101			Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day	PM2.5 (lbs/day	PM2.5 (lbs/day	CO2 (lbs/day)
Grubbing/Land Clearing	3.3	14.3	28.4	2.6	1.2	1.4	1.3	1.1	0.3	3,177.7
Grading/Excavation	3.7	17.4	29.9	2.8	1.4	1.4	1.6	1.3	0.3	3,590.0
Drainage/Utilities/Sub-Grade	3.3	14.1	25.8	2.7	1.3	1.4	1.5	1.2	0.3	2,948.4
Paving	2.0	8.0	11.7	1.0	1.0	-	0.9	0.9	-	1,167.9
Maximum (pounds/day)	3.7	17.4	29.9	2.8	1.4	1.4	1.6	1.3	0.3	3,590.0
Total (tons/construction project)	0.2	1.0	1.7	0.2	0.1	0.1	0.1	0.1	0.0	201.4
Notes: Project Start Year ->	2013									
Project Length (months) ->	6									
Total Project Area (acres) ->	1									
Maximum Area Disturbed/Day (acres) ->	0									
Total Soil Imported/Exported (yd^3/day)->	0									

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.

Road Construction Emissions Model

Version 6.3.2

Data Entry Worksheet

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The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	NB Offramp Improvements	
Construction Start Year	2013	Enter a Year between 2005 and 2025 (inclusive)
Project Type	2	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	6.0	months
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.24	miles
Total Project Area	2.1	acres
Maximum Area Disturbed/Day	0.5	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported		yd^3/day
Soil Exported		yd^3/day
Average Truck Capacity	20.0	yd^3 (assume 20 if unknown)

Clear Data Input & User Overrides

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Emission Estimates for ->	NB Offramp Improvements			Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day	PM2.5 (lbs/day	PM2.5 (lbs/day	CO2 (lbs/day)
Grubbing/Land Clearing	3.4	14.6	28.7	6.3	1.2	5.1	2.1	1.1	1.1	3,215.5
Grading/Excavation	3.8	17.8	30.3	6.6	1.5	5.1	2.4	1.3	1.1	3,638.5
Drainage/Utilities/Sub-Grade	3.4	14.4	26.1	6.5	1.4	5.1	2.3	1.2	1.1	2,986.3
Paving	2.1	8.4	12.0	1.0	1.0	-	1.0	1.0	-	1,205.8
Maximum (pounds/day)	3.8	17.8	30.3	6.6	1.5	5.1	2.4	1.3	1.1	3,638.5
Total (tons/construction project)	0.2	1.0	1.7	0.4	0.1	0.3	0.1	0.1	0.1	204.2
Notes: Project Start Year ->	2013									
Project Length (months) ->	6									
Total Project Area (acres) ->	2									
Maximum Area Disturbed/Day (acres) ->	1									
Total Soil Imported/Exported (yd^3/day)->	0									

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.

Road Construction Emissions Model

Version 6.3.2

Data Entry Worksheet

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The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	NB Onramp Improvements	
Construction Start Year	2013	Enter a Year between 2005 and 2025 (inclusive)
Project Type	2	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	6.0	months
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.13	miles
Total Project Area	0.9	acres
Maximum Area Disturbed/Day	0.2	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported		yd^3/day
Soil Exported		yd^3/day
Average Truck Capacity	20.0	yd^3 (assume 20 if unknown)

Clear Data Input & User Overrides

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Emission Estimates for ->	NB Onramp Improvements			Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day	PM2.5 (lbs/day	PM2.5 (lbs/day	CO2 (lbs/day)
Grubbing/Land Clearing	3.3	14.3	28.4	3.4	1.2	2.2	1.5	1.1	0.5	3,177.7
Grading/Excavation	3.7	17.5	30.0	3.6	1.4	2.2	1.8	1.3	0.5	3,592.3
Drainage/Utilities/Sub-Grade	3.3	14.1	25.8	3.5	1.3	2.2	1.7	1.2	0.5	2,948.4
Paving	2.0	8.0	11.7	1.0	1.0	-	0.9	0.9	-	1,167.9
Maximum (pounds/day)	3.7	17.5	30.0	3.6	1.4	2.2	1.8	1.3	0.5	3,592.3
Total (tons/construction project)	0.2	1.0	1.7	0.2	0.1	0.1	0.1	0.1	0.0	201.4
Notes: Project Start Year ->	2013									
Project Length (months) ->	6									
Total Project Area (acres) ->	1									
Maximum Area Disturbed/Day (acres) ->	0									
Total Soil Imported/Exported (yd^3/day)->	0									

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.

APPENDIX E
APPLICABLE SCAQMD RULES & REGULATIONS

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	✓ Mix backfill soil with water prior to moving ✓ Dedicate water truck or high capacity hose to backfilling equipment ✓ Empty loader bucket slowly so that no dust plumes are generated ✓ Minimize drop height from loader bucket
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	✓ Maintain live perennial vegetation where possible ✓ Apply water in sufficient quantity to prevent generation of dust plumes
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	✓ Follow permit conditions for crushing equipment ✓ Pre-water material prior to loading into crusher ✓ Monitor crusher emissions opacity ✓ Apply water to crushed material to prevent dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Cut and fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration ✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
Demolition – mechanical/manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	✓ Limit vehicular traffic and disturbances on soils where possible ✓ If interior block walls are planned, install as early as possible ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-moving activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	✓ Grade each project phase separately, timed to coincide with construction phase ✓ Upwind fencing can prevent material movement on site ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Importing/exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	✓ Use tarps or other suitable enclosures on haul trucks ✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage ✓ Comply with track-out prevention/mitigation requirements ✓ Provide water while loading and unloading to reduce visible dust plumes
Landscaping	10-1 Stabilize soils, materials, slopes	✓ Apply water to materials to stabilize ✓ Maintain materials in a crusted condition ✓ Maintain effective cover over materials ✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes ✓ Hydroseed prior to rain season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs ✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	✓ Dedicate water truck or high capacity hose to screening operation ✓ Drop material through the screen slowly and minimize drop height ✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	✓ Limit size of staging area ✓ Limit vehicle speeds to 15 miles per hour ✓ Limit number and size of staging area entrances/exists
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	✓ Add or remove material from the downwind portion of the storage pile ✓ Maintain storage piles to avoid steep sides or faces

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas ✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching ✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114)	✓ Empty loader bucket such that no visible dust plumes are created ✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	✓ Haul waste material immediately off-site

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Unpaved roads/parking lots	19-1 Stabilize soils to meet the applicable performance standards; and 19-2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
Vacant land	20-1 In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Table 2
DUST CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Earth-moving (except construction cutting and filling areas, and mining operations)	(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Earth-moving: Construction cut areas and mining operations:	(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c)	Apply chemical stabilizers within five working days of grading completion; OR
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a)	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	(3c)	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Unpaved Roads	(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	(5a)	Apply chemical stabilizers; OR
	(5b)	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	(5c)	Install temporary coverings; OR
	(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	(6a)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

TABLE 3
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY	CONTROL MEASURES
Earth-moving	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice per hour during active operation; OR (3C) Stop all vehicular traffic.
Open storage piles	(1D) Apply water twice per hour; OR (2D) Install temporary coverings.
Paved road track-out	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Table 4
(Conservation Management Practices for Confined Animal Facilities)

SOURCE CATEGORY	CONSERVATION MANAGEMENT PRACTICES
Manure Handling **(Only applicable to Commercial Poultry Ranches)**	(1a) Cover manure prior to removing material off-site; AND (1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND (1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d). (1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material.
Feedstock Handling	(2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins.
Disturbed Surfaces	(3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR (3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR (3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface.
Unpaved Roads	(4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR (4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR (4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface.
Equipment Parking Areas	(5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR (5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches).