Air Quality Impact Assessment

for the

Traffic Signal and Street Widening At Rimpau Avenue/California Avenue

Caltrans District 8

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1.0 Introduction

This report presents an assessment of potential air quality impacts associated with the proposed Traffic Signal and Street Widening at Rimpau Avenue/California Avenue Project being proposed by the City of Corona in cooperation with Caltrans. The evaluation addresses the potential for air emissions during construction and after full buildout of the project, including an assessment of the potential for CO "hot spots" to form due to traffic associated with the proposed project.

2.0 Summary

Figure 1 presents a project location map showing the general vicinity of the project. The project is located in Riverside County, in the South Coast Air Basin (SCAB).

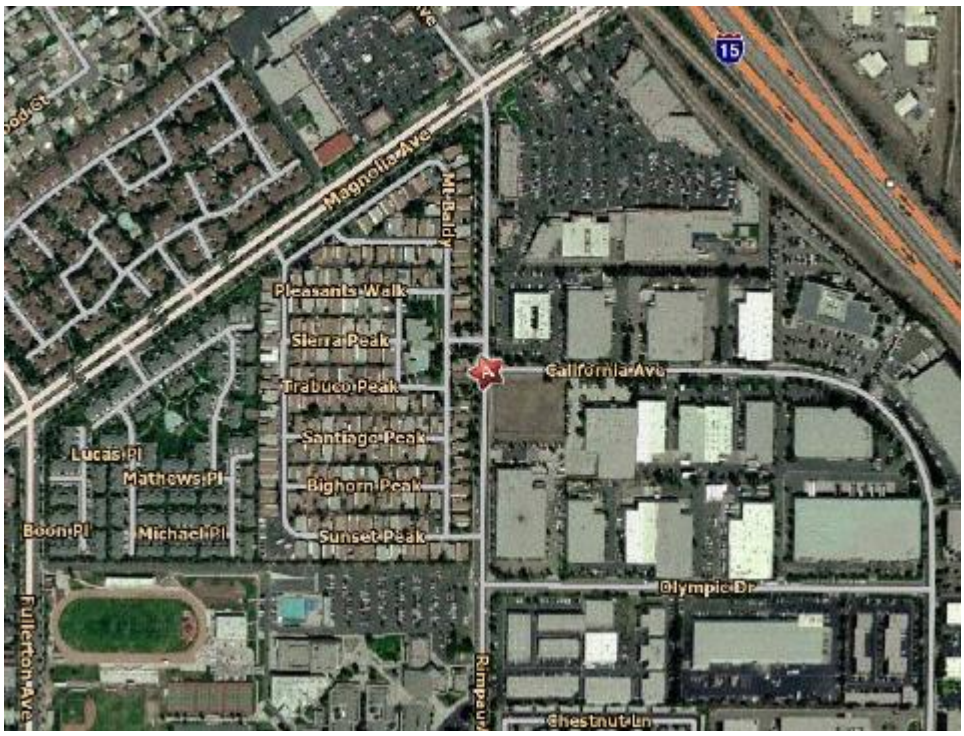


Figure 1. Project Location, Traffic Signal and Street Widening at Rimpau Avenue/California Avenue Project

For regional air quality classification, policy, and regulation, the project is located within the Riverside County portion of the SCAB. Within the SCAB, the South Coast Air Quality Management District (SCAQMD) is the regulatory agency responsible for the administration of federal and state air quality laws, regulations, policies, and standards. Ambient air pollutant concentrations are measured at 35 permanent monitoring stations throughout the Basin. The nearest and most representative air quality monitoring station to the project site is Riverside monitoring stations. Based on data from these stations between the years 2005 to 2007, federal and state standards for ozone (O_3), respirable particulate matter equal to or less than 10 microns in size (PM_{10}), and fine particulate matter equal to or less than 2.5 microns in size ($PM_{2.5}$) were exceeded. No other federal or state ambient air quality standards were exceeded at these monitoring sites during this same period.

The California State Implementation Plan (SIP) is based, in part, on plans developed by local Metropolitan Planning Organizations (MPOs). Transportation measures, such as the proposed action, are analyzed for conformity to the SIP as part of regional transportation plans (RTPs) and regional transportation improvement programs (RTIPs). In Riverside County, the MPO responsible for the preparation of RTPs and the associated air quality analyses is the Southern California Association of Governments (SCAG). The current versions of the regional plans are the *Final 2008 RTP* (2008 RTP) and the *Final Adopted 2006 Regional Transportation Program (RTIP) with Approved Amendments 1-5 and 7* (2006 RTIP). On June 5, 2008, SCAG released the *Draft 2008 RTIP* for public review and comment.

3.0 Project Description

The proposed project includes installation of a new traffic signal; widening of northbound Rimpau Avenue from 280 feet south of California Avenue to 200 feet north of California Avenue; the replacement of existing curb, gutter, and sidewalk; and re-striping to accommodate one left turn lane in the southbound direction of Rimpau Avenue. No new right of way would be required for the proposed improvements, and all proposed

construction work is within existing right of way and within the existing disturbed, un-landscaped area. The project area extends approximately 480 feet through a commercial/residential section of the City of Corona. Appendix A presents engineering drawings showing the existing configuration of the intersection and proposed improvements to the intersection.

The proposed project is fully funded and is included in the Final 2008 Regional Transportation Plan (RTP): Making the Connections (SCAG 2008), which was adopted by SCAG on May 8, 2008. The project is also included in SCAGs Adopted 2008 Regional Transportation Improvement Program (RTIP) as Project No. RIV070710, IN RIVERSIDE COUNTY HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP) PROJECTS LUMP SUM (CONSISTENT W/ 40 CFR PART 93.126, 127, 128 EXEMPT TABLES 2 & 3). The design concept and scope of the proposed project are consistent with the project description in the Final 2008 RTP, the Adopted 2008 RTIP, and the assumptions in the regional emissions analysis. The project listings are presented in Appendix B.

Existing and future ADTs, LOS, and peak hour traffic volumes on Rimpau Avenue and California Avenue are summarized in Table 1.

Table 1. Traffic Volumes – Rimpau Avenue and California Avenue

Segment	Existing			With Improvements		
	am peak	pm peak	LOS	am peak	pm peak	LOS
Rimpau Ave NB Through	772	536	F (am) E (pm)	772	536	A (am) A (pm)
Rimpau Ave NB Right	6	7		6	7	
Rimpau Ave SB Through	516	980		516	980	
Rimpau Ave SB Left	328	218		328	218	
California Ave WB Left	2	2		2	2	
California Ave WB Right	189	404		189	404	

3.1 Purpose of the Project

SCAG has projected that the population of Riverside County is likely to increase by 83 percent between 2000 and 2020. This increase in population has been planned previously and therefore the project would not result in the inducement of unplanned population growth. The purpose of the project is to relieve traffic congestion and delays currently experienced at the intersection of Rimpau Avenue and California Avenue, which is currently controlled as a one-way stop on California Avenue. The intersection currently operates at Level of Service (LOS) F during the am peak hour, and at LOS E during the pm peak hour.

3.2 Alternatives

The only alternatives considered for this project are, the Build Alternative and the No Build Alternative. Under the Build Alternative, a new traffic signal with minor widening would be installed. Under the No Build Alternative, no traffic signal would be installed, and the intersection would continue to operate at an unacceptable level of service during the am and pm peak hours.

4.0 Existing Conditions

This section describes the existing conditions in the project vicinity, including meteorology and climate, regulatory setting, and background air quality.

4.1 Meteorology/Climate

The climate of the proposed project site, and all of the SCAB, is dominated by a semi-permanent high pressure cell over the Pacific Ocean. This cell influences the direction of prevailing winds (westerly to northwesterly) and maintains clear skies for much of the year. The high pressure cell also creates two types of temperature inversions that may act to degrade local air quality.

Subsidence inversions occur during the warmer months as descending air associated with the Pacific high pressure cell comes into contact with cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. The other type of inversion, a radiation inversion, develops on winter nights when air near the ground cools by heat radiation and air aloft remains warm. The shallow inversion layer formed between these two air masses can also trap pollutants. As the pollutants become more concentrated in the atmosphere, photochemical reactions occur that produce ozone, commonly known as smog.

Figure 2 presents a wind rose from the Norco meteorological monitoring station that presents general meteorological trends in the project area. Norco is the closest meteorological monitoring station to the project site. The wind rose provides a graphic representation of the general wind direction and speeds, indicating how and where pollutants may be transported from a given source. As shown in the wind rose, winds are generally from the west and southwest, which results in transport of pollutants inland from coastal areas. Pollutant levels in the SCAB tend to be highest at the inland monitoring stations.

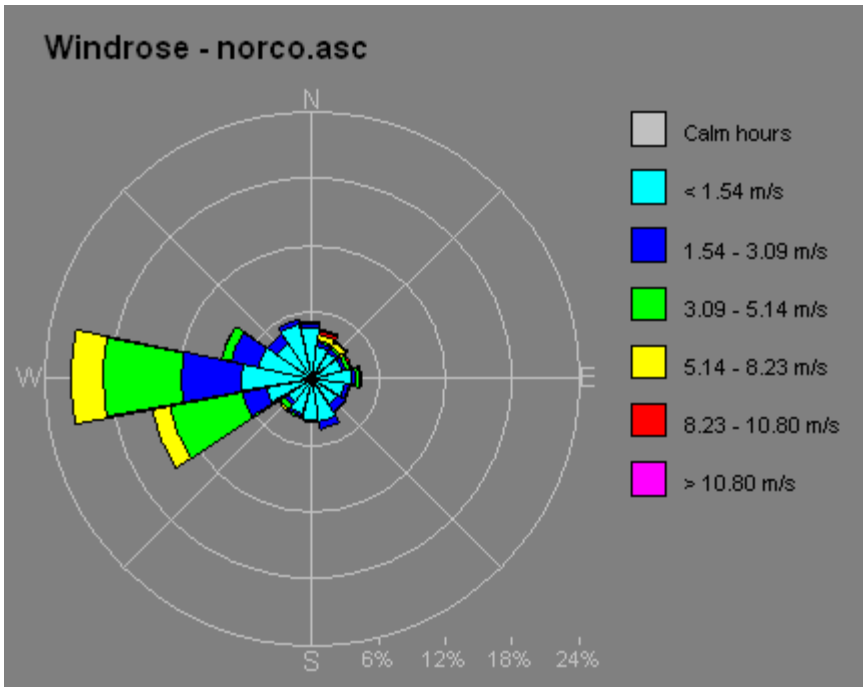


Figure 2. Wind Rose – Norco Meteorological Monitoring Station

Note: m/s = meters per second

4.2 Regulatory Setting

Most of California transportation air quality requirements come from two statutes, the Federal Clean Air Act (FCAA) and the California Clean Air Act (CCAA). The FCAA, as amended in 1990, sets nationwide standards, called National Ambient Air Quality Standards (NAAQS). The U.S. Environmental Protection Agency (USEPA) administers the FCAA, sets the specific air quality and emissions standards and delegates certain responsibilities to other federal agencies and to the states. The USEPA has set both primary (health) and secondary (welfare) standards for the six "criteria pollutants," which are carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulates (PM_{10} and $PM_{2.5}$).

Under the FCAA, the USEPA has designated planning areas throughout the country. Areas are classified as being in "attainment" for a given pollutant if they meet the

prescribed standards. If an area does not meet the standard, it is designated as a "non-attainment" area for that pollutant. Areas that were previously designated as non-attainment areas but have now met the standard (with USEPA approval of a suitable air quality plan) are called "maintenance" areas.

In September 1997, the USEPA promulgated 8-hour O_3 and 24-hour and annual $PM_{2.5}$ national standards. This action has initiated a new planning process to monitor and evaluate emission control measures for these pollutants. On April 15, 2004, the SCAB was designated as a severe non-attainment area for the 8-hour NAAQS for O_3.

The FCAA requires that states produce improvements in air quality over time. This means reducing air pollution to healthful levels in non-attainment areas and developing controls to ensure the air remains healthful in subsequent years. The SIP process is the means by which states develop a collection of regulations and plans to demonstrate this effort to the federal government. In order to meet their transportation planning goals, MPOs and Regional Transportation Planning Agencies (RTPA) create long-range plans and programs, such as Regional Transportation Plans (RTP) and Regional Transportation Improvement Plans (RTIP), which include proposed transportation projects. The projects included in these plans and programs must be consistent with (or conform to) the approved SIP, and hence the requirements of the FCAA. This process is called Transportation Conformity. If a project would contribute to the violation of a standard, it cannot be included in the conforming plan and cannot be built.

In non-attainment or maintenance areas, transportation conformity applies if projects will be funded by the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), or any agency that has been delegated project approval by these agencies. It also applies if projects are determined to be regionally significant as defined in 40 CFR 93.101 and are approved by a regular recipient of federal highway or transit funds, such as Caltrans and most local transportation agencies.

A further demonstration of transportation conformity at the project level is required if a project is located in a non-attainment or maintenance area. The basic demonstration of conformity consists of showing that the project is listed in and consistent with a conforming RTP and RTIP. In addition, a microscale or "hot-spot" analysis for conformity is required if a project is located in a non-attainment area for CO, and/or $PM_{2.5}$ and PM_{10}. Emission reduction measures may be required to ensure that the project will not cause or contribute to new violations of a standard. Caltrans cannot approve a project that would cause or contribute to violation of a federal air quality standard.

The CCAA must be addressed in California Environmental Quality Act (CEQA) documents for transportation projects. Although state air standards for some pollutants are more stringent than federal standards, there is no conformity process under the state law. Over time, as air quality improves under the federal conformity process, it is expected that there will be progress in meeting state standards as well. The California Air Resources Board (ARB) is responsible for establishing state air quality standards and enacting regulations for statewide air pollution control programs, and for submitting the SIP to the USEPA. Local air pollution control districts and air quality management districts directly regulate stationary and some area sources of emissions, but not mobile sources, under the structure set up by the CCAA. The air districts perform most of the air quality planning in California, including the development of SIP submittals under the FCAA. The SCAQMD is the local agency responsible for the administration and enforcement of air quality regulations for the SCAB.

The SCAQMD and the SCAG are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SCAB. The SCAQMD's Air Quality Management Plan is the local plan for attaining and maintaining the ambient air quality standards in the SCAB. The most recent AQMP was adopted in 2007.

In its transportation planning process, SCAG is responsible for development of a RTP that accounts for transportation in the SCAB. As part of the planning process in

developing the RTP, the RTP accounts for transportation improvement projects that will be constructed in the future. The improvement projects are accounted for in the RTIP. As required under 40 CFR Part 93, SCAG, as the metropolitan planning organization for the Southern California region, must demonstrate that the RTP and RTIP are in conformity with the SIP for meeting air quality goals. SCAG has developed the air quality conformity analysis for its current RTP and RTIP, which has been approved by the Federal Department of Transportation. All projects that are included within the currently conforming RTP and RTIP would therefore conform with the SIP.

Table 2 presents a summary of the ambient air quality standards adopted by the federal and California Clean Air Acts.

The following specific descriptions of health effects for each of the criteria air pollutants associated with project construction and operations are based on USEPA (2005a) and CARB (2001).

Ozone. O_3 is considered a photochemical oxidant, which is a chemical that is formed when VOCs and NOx, both by-products of combustion, react in the presence of ultraviolet light. O_3 is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to O_3.

Carbon Monoxide. CO is a product of combustion, and the main source of CO in the SCAB is from motor vehicle exhaust. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease, and can also affect mental alertness and vision.

Table 2. Ambient Air Quality Standards

POLLUTANT	AVERAGE TIME	CALIFORNIA STANDARDS		NATIONAL STANDARDS		
		Concentration	Measurement Method	Primary	Secondary	Measurement Method
Ozone (O_3)	1 hour	0.09 ppm (180 μg/m^3)	Ultraviolet Photometry	--	--	Ultraviolet Photometry
	8 hour	0.070 ppm (137 μg/m^3)		0.075 ppm (147 μg/m^3)	0.075 ppm (147 μg/m^3)	
Carbon Monoxide (CO)	8 hours	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Spectroscopy (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Spectroscopy (NDIR)
	1 hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm (56 μg/m^3)	Gas Phase Chemiluminescence	0.053 ppm (100 μg/m^3)	0.053 ppm (100 μg/m^3)	Gas Phase Chemiluminescence
	1 hour	0.18 ppm (338 μg/m^3)		--	--	
Sulfur Dioxide (SO_2)	Annual Average	--	Ultraviolet Fluorescence	0.030 ppm (80 μg/m^3)	--	Pararosaniline
	24 hours	0.04 ppm (105 μg/m^3)		0.14 ppm (365 μg/m^3)	--	
	3 hours	--		--	0.5 ppm (1300 μg/m^3)	
	1 hour	0.25 ppm (655 μg/m^3)		--	--	
Respirable Particulate Matter (PM_{10})	24 hours	50 μg/m^3	Gravimetric or Beta Attenuation	150 μg/m^3	150 μg/m^3	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 μg/m^3		--	--	
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 μg/m^3	Gravimetric or Beta Attenuation	15 μg/m^3	15 μg/m^3	Inertial Separation and Gravimetric Analysis
	24 hours	--		35 μg/m^3	35 μg/m^3	
Sulfates	24 hours	25 μg/m^3	Ion Chromatography	--	--	--
Lead (Pb)	30-day Average	1.5 μg/m^3	Atomic Absorption	--	--	Atomic Absorption
	Calendar Quarter	--		1.5 μg/m^3	1.5 μg/m^3	
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm (42 μg/m^3)	Ultraviolet Fluorescence	--	--	--
Vinyl Chloride	24 hours	0.010 ppm (26 μg/m^3)	Gas Chromatography	--	--	--

ppm= parts per million
μg/m^3 = micrograms per cubic meter
mg/m^3= milligrams per cubic meter
Source: California Air Resources Board 2008

Nitrogen Dioxide. NO_2 is also a by-product of fuel combustion, and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

Respirable Particulate Matter and Fine Particulate Matter. Respirable particulate matter, or PM_{10}, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Fine particulate matter, or $PM_{2.5}$, refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in this size range has been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} and $PM_{2.5}$ arise from a variety of sources, including road dust, diesel exhaust, combustion, tire and brake wear, construction operations and windblown dust. PM_{10} and $PM_{2.5}$ can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. $PM_{2.5}$ is considered to have the potential to lodge deeper in the lungs.

Sulfur Dioxide. SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil, and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Pb in the atmosphere occurs as particulate matter. Pb has historically been emitted from vehicles combusting leaded gasoline, as well as from industrial sources. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Pb has the potential to cause gastrointestinal, central nervous system, kidney and blood diseases upon prolonged exposure. Pb is also classified as a probable human carcinogen.

Sulfates. Sulfates are the fully oxidized ionic form of sulfur. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO_2) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The CARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and due to fact that they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide. H_2S is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation. Breathing H_2S at levels above the standard would result in exposure to a very disagreeable odor. In 1984, a CARB committee concluded that the ambient standard for H_2S is adequate to protect public health and to significantly reduce odor annoyance.

Vinyl Chloride. Vinyl chloride, a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants and hazardous waste sites, due to microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air causes central nervous system effects, such as dizziness, drowsiness and headaches. Long-term exposure to vinyl chloride through inhalation and oral exposure causes liver damage. Cancer is a major concern from exposure to vinyl chloride via inhalation. Vinyl chloride exposure has been shown to increase the risk of angiosarcoma, a rare form of liver cancer, in humans.

The nearest ambient monitoring station to the proposed project site is the Riverside-Rubidoux station, located approximately 20 miles to the northeast. Because of its inland location in a congested area, the monitoring data from the Riverside-Rubidoux monitoring station represent a conservative estimate of background ambient pollutant concentrations in the City of Corona.

Table 3 provides a summary of the attainment status for each criteria pollutant within the SCAB and the number of air quality violations at the monitoring stations nearest to the site for the period from 2005 through 2007.

Table 3. Attainment Classification and Number of Air Quality Violations at the Nearest Monitoring Station

Pollutant	Averaging Time	Attainment Status		Number of Air Quality Violations		
		Federal	State	2005	2006	2007
Ozone	8 hour	Non-attainment	Non-attainment	32 (N)	30 (N)	46 (N)
	1 hour	N/A	Non-attainment	46 (C)	45 (C)	31 (C)
PM_{10}	Annual Arithmetic Mean	Non-attainment	Non-attainment	(C)	(C)	(C)
	24 hour	Non-attainment	Non-attainment	67 (C)	69 (C)	65 (C)
$PM_{2.5}$	Annual Arithmetic Mean	Non-attainment	Non-attainment	(C)	(C)	(C)
	24 hour	Non-attainment	Non-attainment	4 (N)	1 (N)	3 (N)
NO_2	Annual	Maintenance	Maintenance	0	0	0
	1 hour	Maintenance	Maintenance	0	0	0
CO	8 hour	Maintenance	Attainment	0	0	0
	1 hour	Maintenance	Attainment	0	0	0
SO_2	Annual	Attainment	Attainment	0	0	0
	24 hour	Attainment	Attainment	0	0	0
	3 hour	Attainment	Attainment	0	0	0
	1 hour	Attainment	Attainment	0	0	0

NOTE: (N) = NAAQS; (C) = CAAQS

4.3 Background Air Quality

The SCAQMD operates a network of ambient air monitoring stations throughout the SCAB. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. As discussed in Section 4.2, the nearest ambient monitoring station to the proposed project site is the Riverside-Rubidoux station. Ambient concentrations of pollutants from the Riverside station for the past three years are presented in Table 4, Ambient Background Concentrations.

Table 4. Ambient Background Concentrations
ppm (unless otherwise indicated)

Pollutant	Averaging Time	2005	2006	2007	Most Stringent Ambient Air Quality Standard	Monitoring Station
O_3	8 hour	0.129	0.117	0.111	0.070	Riverside
	1 hour	0.144	0.151	0.131	0.09	Riverside
PM_{10}	Annual	50.4 µg/m^3	52.7 µg/m^3	57.1 µg/m^3	20 µg/m^3	Riverside
	24 hour	123 µg/m^3	109 µg/m^3	559 µg/m^3	50 µg/m^3	Riverside
$PM_{2.5}$	Annual	20.9 µg/m^3	19.0 µg/m^3	19.0 µg/m^3	12 µg/m^3	Riverside
	24 hour	98.7 µg/m^3	68.4 µg/m^3	75.6 µg/m^3	35 µg/m^3	Riverside
NO_2	Annual	0.022	0.020	0.020	0.030	Riverside
	1 hour	0.077	0.076	0.072	0.18	Riverside
CO	8 hour	2.50	2.29	2.93	9.0	Riverside
	1 hour	3.4	2.7	3.8	20	Riverside
SO_2	Annual	0.003	0.001	0.002	0.030	Riverside
	24 hour	0.011	0.003	0.004	0.04	Riverside

[1]Secondary NAAQS
Source: www.arb.ca.gov (all pollutants except 1-hour CO)
www.epa.gov/air/data/monvals.html (1-hour CO)

The Riverside-Rubidoux monitoring station regularly experiences exceedances of the state and federal O_3 standards, the state PM_{10} and the federal $PM_{2.5}$ standards. An exceedance of the 24-hour NAAQS for PM_{10} was recorded in 2007, but this occurred during the southern California fire events and is not representative of typical conditions at the Riverside-Rubidoux monitoring station.

Because of the location of the monitoring station in downtown Riverside where traffic congestion is prevalent, the station has higher concentrations of CO than are measured elsewhere in the region and the background data are not likely to be representative of background ambient CO concentrations in the project vicinity. Use of Riverside background data will therefore provide a conservative estimate of background CO concentrations.

5.0 Impacts

5.1 Regional Impacts

Procedures and guidelines for use by agencies that sponsor transportation projects in evaluating the potential local level CO impacts of a project are contained in Transportation Project-Level Carbon Monoxide Protocol (CO Protocol) (UCD ITS 1997). The CO Protocol provides a methodology for determining the level of analysis, if any, required on a project. The guidelines comply with the Clean Air Act, federal and state conformity rules, and CEQA.

The CO Protocol provides a conformity requirement decision flow chart for new projects that is designed to assist in the evaluation of the requirements that apply to projects. The flow chart in Section 3.1 of the CO Protocol which provides for requirements for new project should be used to determine the conformity requirements that apply to new projects.

The flow chart contained in the CO Protocol was followed to determine the level of analysis required for the Traffic Signal and Street Widening At Rimpau Avenue/California Avenue. The flow chart has been included as Figure 3.

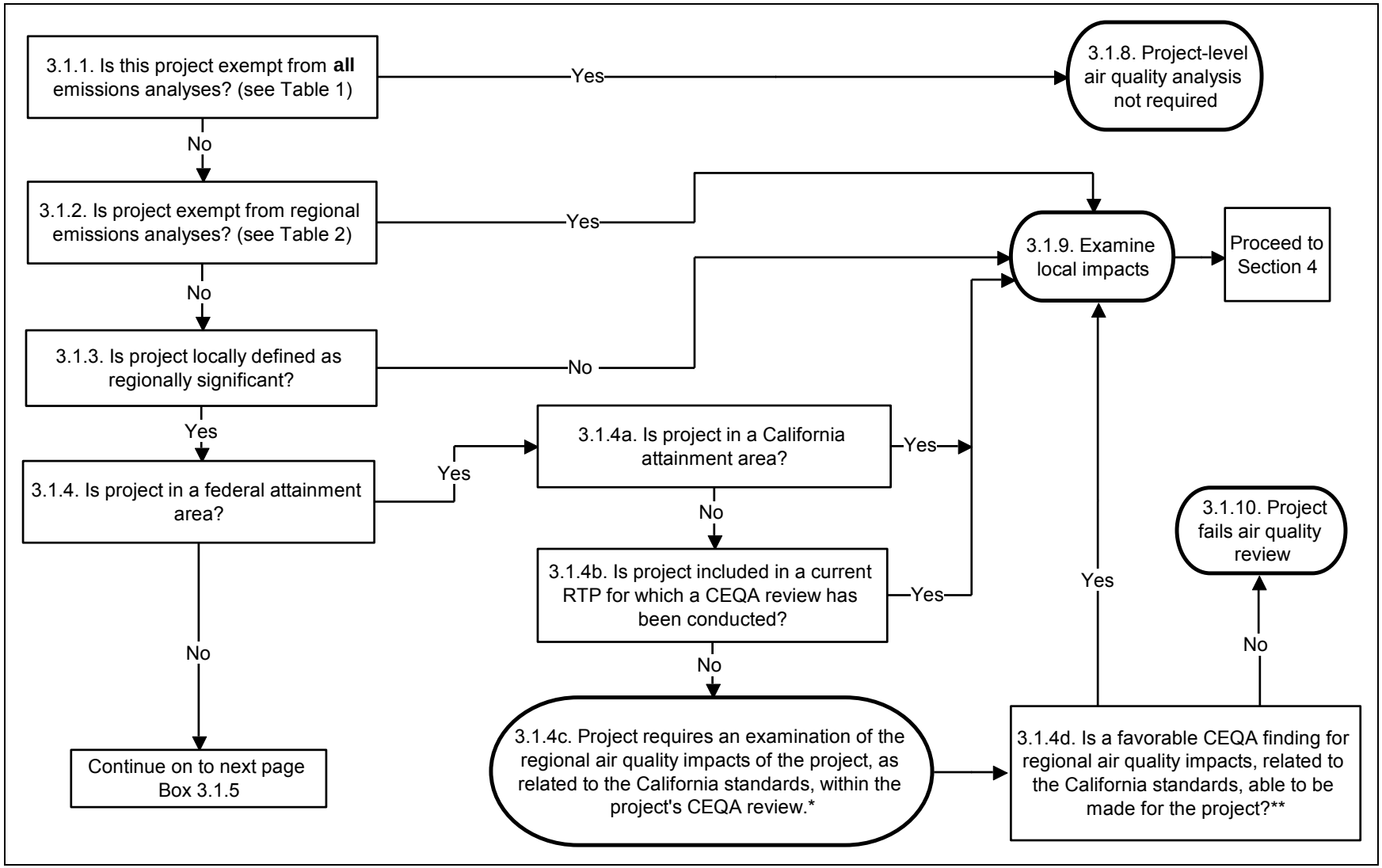


Figure 3. Requirements for New Projects – CO Protocol Flow Chart, Regional Analysis

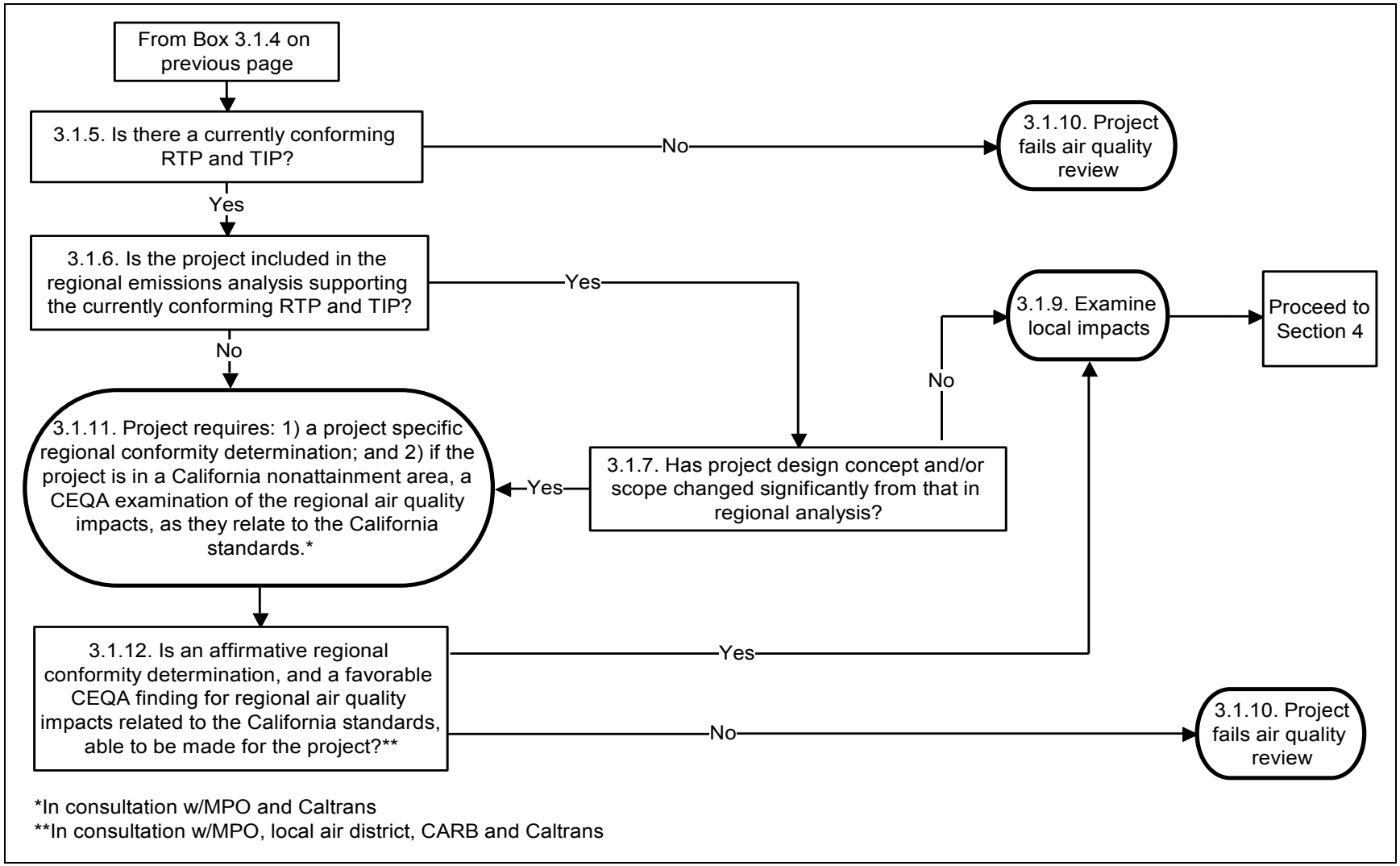


Figure 4 (continued). Requirements for New Projects – CO Protocol Flow Chart, Regional Analysis

The results for each step in the analysis are as follows:

3.1.1. Is this project exempt from all emissions analyses? No. The project was determined not to be exempt from all emissions analyses.

3.1.2. Is project exempt from regional emissions analyses? Yes. The project is an intersection signalization project with minor widening at an individual intersection. According to the CO Protocol, certain projects are ordinarily exempt from all regional emissions analysis according to Table 3 of 40 CFR Part 93.127. Intersection signalization projects at individual intersections are listed in this table as exempt from regional emissions analyses.

5.2 Local Emissions (Hot Spots)

The next step in evaluating the project's potential for air quality impacts is to examine the potential for local impacts. The Transportation Conformity Rules require a statement that:

> Federal projects must not cause or contribute to any new localized CO, PM_{10}, and/or $PM_{2.5}$ violations or increase the frequency or severity of any existing CO, PM_{10}, and/or $PM_{2.5}$ violations in CO, PM_{10}, and $PM_{2.5}$ non-attainment and maintenance areas.

The following sections address the project's potential for localized impacts.

5.2.1 Carbon Monoxide

The CO Protocol states that the determination of project-level CO impacts should be carried out in accordance with the Local CO Analysis flow chart shown in Section 4 of the CO Protocol, reproduced here as Figure 4. The following set of questions and

answers follows the procedures of the flow chart in the CO Protocol that addresses the requirements for Local CO Analysis.

Level 1

Is the project in a CO non-attainment area? No. The project is in a CO attainment/maintenance area.

Was the area redesignated as "attainment" after the 1990 Clean Air Act? Yes. The SCAB was redesignated as attainment for the NAAQS for CO on June 11, 2007.

Has "continued attainment" been verified with the local air district (if appropriate)? Yes. Continued attainment has been verified with the SCAQMD.

Level 7

Does the project worsen air quality? No.
To address whether the project could have the potential to worsen air quality, the CO Protocol indicates that only those projects that are likely to worsen air quality necessitate further analysis. As stated in the CO Protocol, the following criteria were used to evaluate whether the Traffic Signal and Street Widening at Rimpau Avenue/California Avenue Project has the potential to worsen air quality:

Would the project significantly increase the percentage of vehicles operating in cold start mode? No. The Traffic Signal and Street Widening at Rimpau Avenue/California Avenue Project does not increase the percentage of vehicles operating in cold start mode as it is designed to install a signal at an existing intersection operating at an unacceptable LOS currently. There are no uses associated with the project that would increase cold starts.

Would the project significantly increase traffic volumes? No. Based on the Traffic Impact Memorandum (SC Engineering 2008), the project would not result in traffic volume increases at the intersection of Rimpau Avenue and California Avenue.

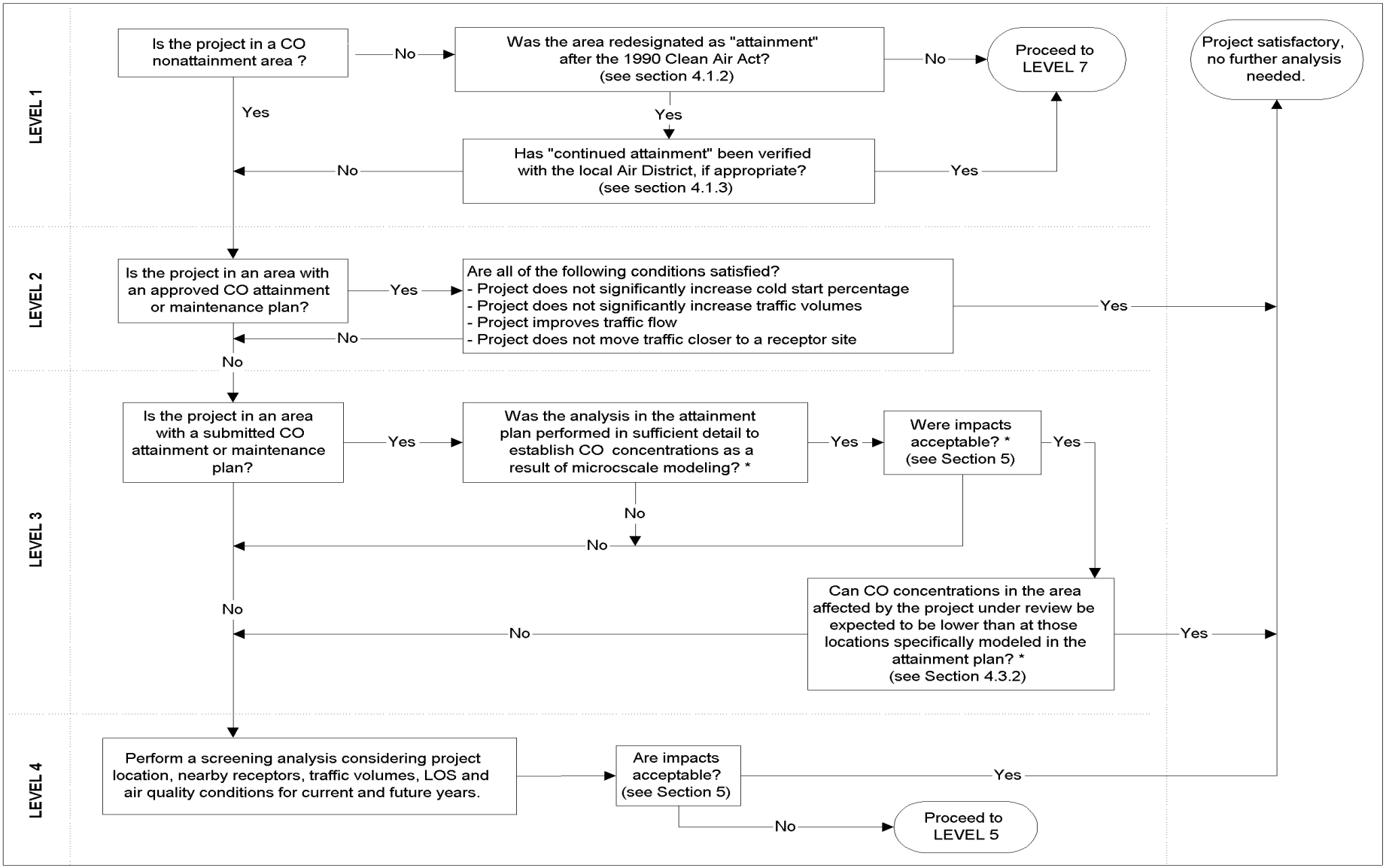


Figure 5. Local CO Analysis – CO Protocol

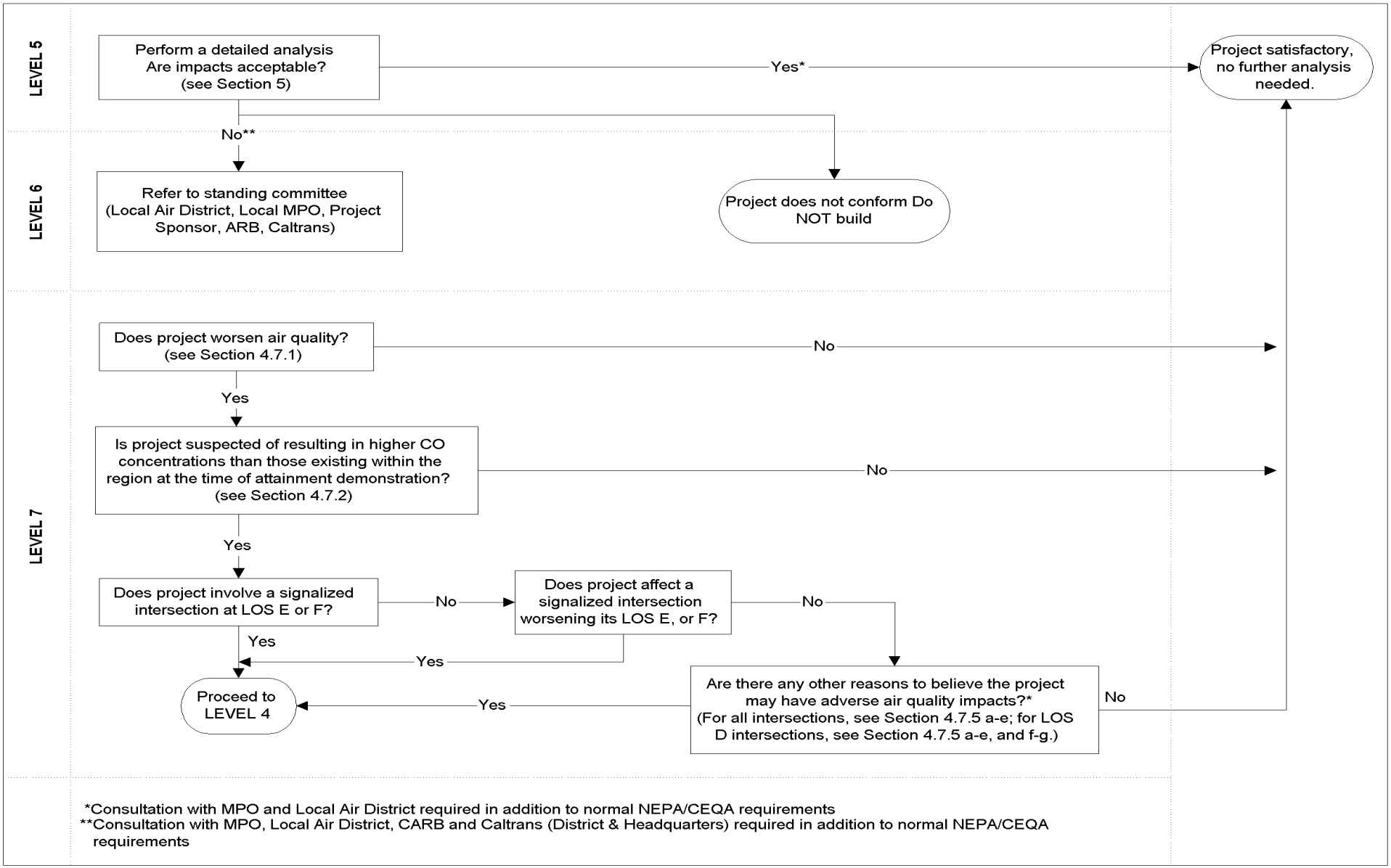


Figure 6 (continued). Local CO Analysis – CO Protocol

Would the project worsen traffic flow? No. The purpose of the project is to alleviate congestion at the intersection of Rimpau Avenue and California Avenue. The intersection is currently operating at LOS F in the am peak hour, and LOS E in the pm peak hour. According to the Traffic Impact Memorandum (SC Engineering 2008), installation of the traffic signal will improve the LOS at the intersection to LOS A in both the am and pm peak hours. The project would not worsen traffic flow.

According to the CO Protocol, the project is considered satisfactory and no further CO analysis is required. Therefore, no localized CO impacts would occur.

5.2.2 Particulate Matter

On March 10, 2006, the USEPA published a final rule that establishes the transportation conformity criteria and procedures for determining which transportation projects must be analyzed for local air quality impacts in $PM_{2.5}$ and PM_{10} non-attainment and maintenance areas. Based on that rule, the USEPA and FHWA published *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Non-attainment and Maintenance Areas* (PM Guidance) (FHWA 2006b).

A hot spot analysis is defined in 40 CFR 93.101 as an estimation of likely future localized $PM_{2.5}$ or PM_{10} pollutant concentrations and a comparison of those concentrations to the relevant air quality standards. A hot spot analysis assesses the air quality impacts on a scale smaller than an entire non-attainment or maintenance area, including, for example, congested roadway intersections and highways or transit terminals. Such an analysis is a means of demonstrating that a transportation project meets Clean Air Act conformity requirements to support state and local air quality goals with respect to potential localized air quality impacts. When a hot spot analysis is required, it is included within the project-level conformity determination that is made by the FHWA or FTA.

The March 2006 PM guidance document describes qualitative hot spot analyses. Quantitative $PM_{2.5}$ hot spot analyses will be required when appropriate methods and modeling guidance are available. Qualitative hot spot analyses involve more streamlined reviews of local factors such as local monitoring data near a proposed project location.

Projects of Air Quality Concern. To meet statutory requirements, the March 10, 2006, final rule requires $PM_{2.5}$ hot spot analyses to be performed for "projects of air quality concern." Qualitative hot spot analyses would be done for these projects. Projects not identified as projects of air quality concern have also met statutory requirements without any further hot spot analyses.

Projects Of Air Quality Concern (POAQC) are projects within a $PM_{2.5}$ non-attainment or maintenance area, funded or approved by the FHWA or FTA, and are one of the following types of projects:

- New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;
- Projects affecting intersections that are LOS D, E, or F with a significant number of diesel vehicles, or those 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;
- New bus and rail terminals, and transfer points, that have a significant number of diesel vehicles congregating at a single location;
- Expanded bus and rail terminals, and transfer points, that significantly increase the number of diesel vehicles congregating at a single location; and
- Projects in, or affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The Traffic Signal and Street Widening at Rimpau Avenue/California Avenue Project would not be a project of air quality concern for $PM_{2.5}$ and PM_{10} emissions because the project would not fall under any of the categories of projects listed above that are

considered POAQCs. The project would not involve a significant increase in the number of diesel vehicles. The project would therefore not be required to conduct a PM_{10} or $PM_{2.5}$ analysis.

5.3 Construction Impacts

Construction is expected to take place in 2009. Construction equipment and activities would result in emissions of criteria pollutants and fugitive dust. Due to the anticipated time period of construction (less than five years), no quantitative estimates of construction emissions are necessary. The project contractor would be required to comply with SCAQMD Rule 403 (SCAQMD 2006), Fugitive Dust, which would result in minimizing PM_{10} and $PM_{2.5}$ emissions. However, the following measure is recommended for incorporation into the project to minimize construction related PM emissions:

- The proposed project should incorporate into the project specifications the applicable provisions of the SCAQMD Rule 403 (SCAQMD 2006); and
- Whenever feasible, the contractor should use diesel-fueled construction equipment with exhaust particulate filters.

6.0 Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards (NAAQS), EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. 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.

This project qualifies under Level 1 of the *Interim Guidance on Air Toxic Analysis in NEPA Documents* (FHWA 2006), i.e., Exempt Projects or Projects with No Meaningful Potential MSAT Effects. The types of projects included in this category are:

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

The purpose of this project is to reduce current and future delay experienced by drivers traveling through the Rimpau Avenue/California Avenue intersection by installing a traffic signal and minor widening of Rimpau Avenue. This project will not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. As such, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSATs to decline significantly over the next 20 years. Even after accounting for a 64 percent increase in VMT, FHWA predicts MSATs will decline in the range of 57 percent to 87 percent, from 2000 to 2020, based on regulations now in effect, even with a projected 64 percent increase in VMT. This will both reduce the background level of MSATs as well as the possibility of even minor MSAT emissions from this project.

7.0 Naturally-Occurring Asbestos

Exposure and disturbance of rock and soil that contains asbestos can result in the release of fibers to the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (proper rock name serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present. Based on the map of naturally-occurring asbestos locations contained in *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos* (California Department of Conservation, Division of Mines and Geology 2000), major ultramafic rock formations are not found in Riverside County. Therefore, construction and grading would not occur in an area with ultramafic rock that could be a source of emissions of naturally-occurring asbestos.

8.0 Climate Change

8.1 Regulatory Setting

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and proactive approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the ARB to develop and implement regulations to reduce automobile and light truck GHG emissions; these regulations will apply to automobiles and light trucks beginning with the 2009 model year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by 2020 and 3) 80% below the 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that ARB create a plan that includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and GHG reduction is also a concern at the federal level; at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change. However, California, in conjunction with several environmental organizations and several other states, sued to force the USEPA to regulate GHGs as a pollutant under the Clean Air Act (*Massachusetts vs. Environmental Protection Agency et al.*, U.S. Supreme Court No. 05–1120. 549 U.S. (Argued November 29, 2006—Decided April 2, 2007). The court ruled that GHGs do fit within the Clean Air Act's definition of a pollutant, and that USEPA does have the authority to regulate GHGS. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting greenhouse gas emissions.

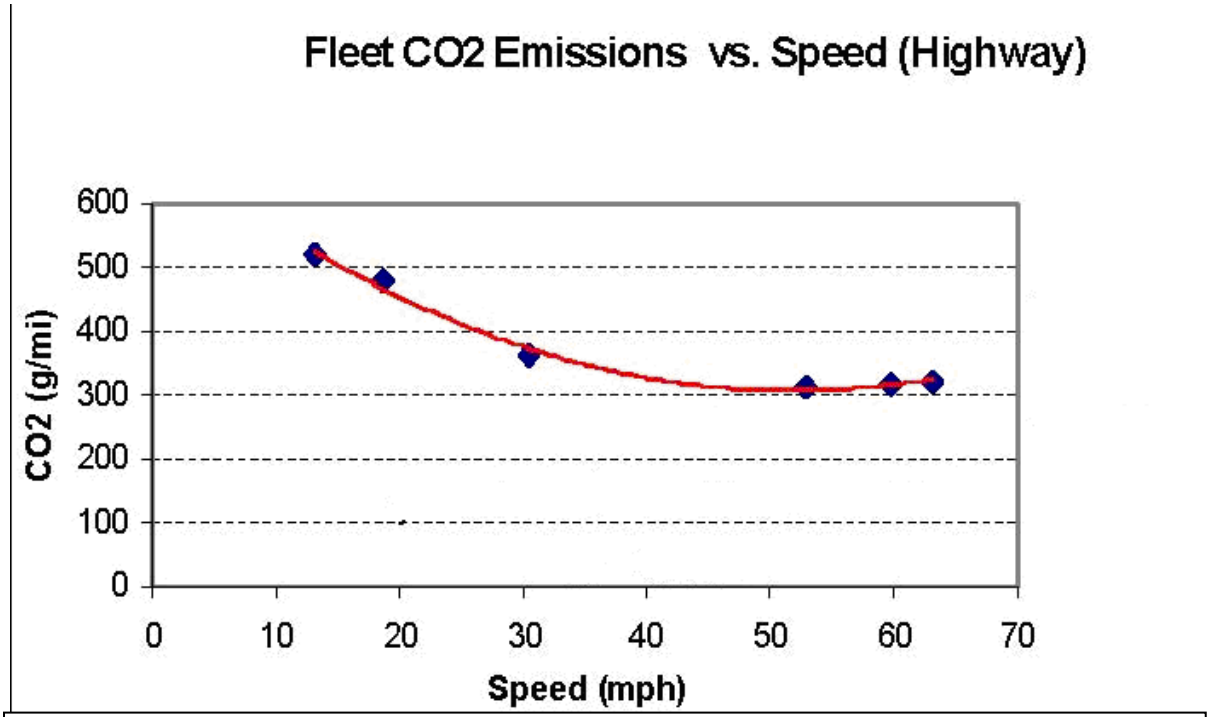
8.2 Climate Change Evaluation

According to a recent white paper by the Association of Environmental Professionals (AEP 2007), "an individual project does not generate enough greenhouse gas emissions

to significantly influence global climate change. Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases."

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing the *Climate Action Program at Caltrans* (Caltrans 2006). Transportation's contribution to GHG emissions is dependent on three factors: the types of vehicles on the road, the type of fuel the vehicles use, and the time/distance the vehicles travel.

One of the main strategies in Caltrans' Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 mph; the most severe emissions occur from 0-25 miles per hour (see Figure 3 below). Relieving congestion by enhancing operations and improving travel times in high congestion travel corridors will lead to an overall reduction in GHG emissions.



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

Figure 7. Carbon Dioxide Emissions versus Speed

The Traffic Signal and Street Widening at Rimpau Avenue/California Avenue Project is designed to reduce congestion and vehicle time delays. Increases in traffic would occur with or without the project. The project is designed to reduce vehicle hours traveled by reducing congestion and queuing times at the intersection, and will improve overall traffic flow. Due to the reduction in vehicle hours traveled and improved traffic flow, carbon dioxide emissions should be reduced despite future increases in traffic.

Caltrans recognizes the concern that carbon dioxide emissions raise for climate change. However, accurate modeling of GHG emissions levels, including carbon dioxide at the project level, is not currently possible. No federal, state or regional regulatory agency has provided methodology or criteria for GHG emission and climate change impact analysis. Therefore, Caltrans is unable to provide a scientific or regulatory based conclusion regarding whether the project's contribution to climate change is cumulatively considerable.

Caltrans continues to be actively involved on the Governor's Climate Action Team as ARB works to implement AB 1493 and AB 32. As part of the *Climate Action Program at Caltrans* (December 2006), Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans is working closely with local jurisdictions on planning activities; however, Caltrans does not have local land use planning authority. Caltrans is also supporting efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks. However it is important to note that the control of the fuel economy standards is held by the USEPA and ARB. Lastly, the use of alternative fuels is also being considered; Caltrans is participating in funding for alternative fuel research at the University of California Davis.

To the extent that it is applicable or feasible for the project, the following measures can also help to reduce the GHG emissions and potential climate change impacts from projects:

1. Use of reclaimed water — currently 30% of the electricity used in California is used for the treatment and delivery of water. Use of reclaimed water helps conserve this energy, which reduces GHG emissions from electricity production.
2. Landscaping — reduces surface warming and through photosynthesis decreases carbon dioxide.
3. Portland cement — use of lighter color surfaces such as Portland cement helps to reduce the albedo effect and cool the surface; in addition, Caltrans has been a leader in the effort to add fly ash to Portland cement mixes. Adding fly ash reduces the GHG emissions associated with cement production — it also can make the pavement stronger.
4. Use of energy efficient lighting, such as LED traffic signals.
5. Idling restrictions for trucks and equipment.

9.0 Conclusions

Based on the analysis of the project, the project is consistent with the applicable air quality plans. The project will not cause or contribute to new localized exceedances of

CO, PM, and/or MSAT ambient air quality standards, nor will it increase the frequency or severity of any existing exceedances. Because no significant impacts have been identified, no mitigation measures are required.

10.0 References

California Air Resources Board. 1998. *Final Carbon Monoxide Redesignation and Maintenance Plan for Ten Federal Planning Areas.*

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

California Department of Transportation. 2007. *Standard Environmental Reference. Chapter 11 – Air Quality*. October.

Federal Highway Administration. 2006. *Interim Guidance on Air Toxic Analysis in NEPA Documents*. February 3.

SC Engineering. 2008. *Traffic Impact Memorandum, Rimpau Avenue at California Avenue – New Traffic Signal*. June 30.

U.S. Environmental Protection Agency. 2006. *Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Non-attainment and Maintenance Areas*. March.

University of California Davis. 1997. *Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol*

Appendix A

Proposed Street Improvements

PROJECT NO. 42-905

TRAFFIC SIGNAL AND STREET WIDENING AT RIMPAU AVENUE / CALIFORNIA AVENUE

CITY COUNCIL

EUGENE MONTANEZ
MAYOR

JEFF MILLER
PRO TEM

STEVE NOLAN

STAN SKIP WORTH

KAREN SPIEGEL

CORONA
"THE CIRCLE CITY"
Incorporated
July 13, 1896
To Cherish Our Past-To Plan Our Future

BASIS OF BEARINGS

THE BEARING OF N.0°07'14"E. AS SHOWN ON TRACT NO. 21503, MB 167/45-49 CENTERLINE OF RIMPAU AVENUE, WAS USED AS THE BASIS OF BEARINGS FOR THIS PROJECT.

UNDERGROUND UTILITIES & STRUCTURES

THE EXISTENCE AND APPROXIMATE LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE , THERE ARE NO EXISTING UTILITIES OR STRUCTURES EXCEPT AS SHOWN ON THESE PLANS. THE ENGINEER ASSUMES NO LIABILITY AS TO THE EXACT LOCATION OF SAID SUBSTRUCTURES NOR FOR UTILITIES OR IRRIGATION SUBSTRUCTURES WHOSE LOCATIONS ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY AND IRRIGATION COMPANIES PRIOR TO WORK ON EXCAVATION TO DETERMINE EXACT LOCATION OF ALL SUBSTRUCTURES AFFECTING THIS WORK, WHETHER OR NOT SHOWN HEREON, AND FOR ANY DAMAGE OR PROTECTION TO THESE SUBSTRUCTURES.

PRIVATE ENGINEER'S NOTICE TO CONTRACTOR

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN ON OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATIONS" OF THE U.S. DEPARTMENT OF LABOR, AND WITH THE STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS " CONSTRUCTION SAFETY ORDERS". THE CIVIL ENGINEER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR THE CONTRACTOR OR SUBCONTRACTOR'S COMPLIANCE WITH SAID REGULATIONS AND ORDERS. CONTRACTOR FURTHER AGREES THAT HE SHALL ASSUME SOLE COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION ON THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER, THE CITY AND CIVIL ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.

Underground Service Alert
DIGALERT
Call: TOLL FREE
1-800
227-2600
TWO WORKING DAYS BEFORE YOU DIG

LEGEND

67.60	EXISTING ELEVATION
A.C.	ASPHALT CONCRETE PAVEMENT
ANC.	ANCHOR
BOT	BOTTOM
CNTL. BX.	CONTROL BOX
CH. LK.	CHAIN LINK
C.F.	CURB FACE
℄	CENTER LINE
E.G.	EDGE OF GUTTER
E.W.	EDGE OF WALK
F.F.	FINISH FLOOR
F.G.	FINISH GRADE
F.H.	FIRE HYDRANT
F.L.	FLOW LINE
FN.	FENCE
INV.	INVERT
P.C.C.	PORTLAND CEMENT CONCRETE
SMH	SEWER MANHOLE
SDMH	STORM DRAIN MANHOLE
T.C.	TOP OF CURB
T.W.	TOP OF WALL
U.P.	UTILITY POLE
W.M.	WATER METER
W.V.	WATER VALVE

PORTLAND CEMENT CONCRETE
ASPHALT CONCRETE PAVEMENT
DEMO AREA
GRIND ASPHALT CONCRETE PAVEMENT
EXISTING CURB AND GUTTER
PROPERTY LINE
EXISTING TREE

NOTE: "THE SURVEY, TOPO, AND BASE DRAWINGS FOR THIS DESIGN WERE PROVIDED BY THE CITY OF CORONA, AND THE DESIGN OF SHEETS 4 & 5 WERE PREPARED BY OTHERS."

CONSTRUCTION NOTES

1. CONSTRUCT 4" A.C. OVER 14" A.B.
2. CONSTRUCT 8" P.C.C. CURB & GUTTER PER CITY STD. 104-0, TYPE 8.
3. CONSTRUCT P.C.C. CROSS-GUTTER PER CITY STD. 106-0.
4. CONSTRUCT P.C.C. SIDEWALK PER CITY STD. 103-0.
5. CONSTRUCT WHEELCHAIR CURB RAMP PER CITY STD. 102-0, CASE "B" WITH TRUNCATED DOME PANEL.
6. SAW-CUT AND JOIN.
7. PROTECT IN PLACE
8. ADJUST TO GRADE
9. RELOCATE STREET LIGHT AND/OR PULL BOX.
10. CONSTRUCT P.C.C. DRIVEWAY APPROACH PER CITY STD. 100 - 0 (ALLEY APPROACH) MODIFIED PER PLAN, W=25'.
11. REMOVE AND REPLACE F.H.
12. GRIND EXISTING SURFACE AS NECESSARY TO ACCOMMODATE 1 1/2" MIN. A.C. OVERLAY.
13. HEADER CUT AND JOIN.
14. RELOCATE PALM TREE.
15. RELOCATE MONUMENT SIGN.

STORM DRAIN NOTES

* 1 INSTALL 10± OF 36" R.C.P. 1750-D S.D. PIPE AT 20.52% PER DETAIL ON SHEET 3.

* 2 CONSTRUCT CATCH BASIN W=28' PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (2006 EDITION) STD. NO. 300-2 AND LOCAL DEPRESSION PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (2006 EDITION) STD. NO. 313-2 CASE "E".

* 3 INSTALL CONCRETE COLLAR FOR RCP (36") PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (2006 EDITION) STD. PLAN 380-3.

* NOTES TO CONTRACTOR:

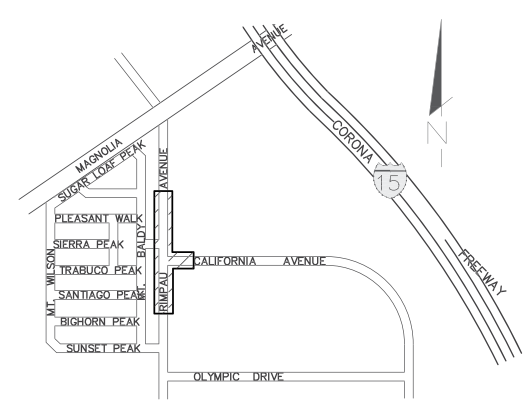
A - CONTRACTOR TO VERIFY LOCATION & ELEVATION PRIOR TO CONSTRUCTION.
B - CONTRACTOR TO MAINTAIN EXISTING PIPE ALIGNMENT.
C - SLOPE FLOOR OF BASIN AT 1.0% MIN. GRADE TOWARDS OUTLET PIPE.

CURVE DATA

#	Δ	R	L	T
A	11°36'03"	149.19'	30.21'	15.15'
B	90°00'39"	35.00'	54.98'	35.01'
C	89°59'21"	35.00'	54.97'	34.99'
D	85°53'48"	7.5'	11.24'	6.98'
E	93°59'48"	6.5'	10.66'	6.97'

DEMOLITION NOTES

A GRIND ASPHALT CONCRETE PER CONSTRUCTION PLAN.
B REMOVE CATCH BASIN, LOCAL DEPRESSION & GRATES.
C REMOVE CROSS GUTTER AND SPANDREL.
D REMOVE ITEMS AS NOTED.
E REMOVE SIDEWALK.
F REMOVE CURB AND GUTTER.
G PROTECT IN PLACE ITEM AS NOTED.
H TO BE RELOCATED, BY OTHERS.
I RELOCATE ITEM AS NOTED.
J SAW-CUT AND JOIN.
K HEADER CUT AND JOIN.
L REMOVE A.C. PAVEMENT, MIN. 18".



VICINITY MAP
N.T.S

GENERAL

1. All work and materials shall comply with the Specifications and Standard Plans of the City of Corona Public Works and Utilities Departments, and the latest edition of the Standard Specifications for Public Works Construction.

These drawings and the date herein are made part of the Specifications.

2. Prior to any construction work, the contractor shall obtain a City business license, a Public Works Construction Permit.

3. Inspection to be called for through the City of Corona: (951) 279-3511 (Public Works), 24 hours prior to starting work.

4. The contractor shall notify Underground Service Alert (1-800-422-4133) two full working days (48 hours minimum) in advance of any construction activities, and obtain an identification number prior to permit issuance, including pavement removal, excavation and A.C. overlay, which could affect any underground utility.

5. The contractor shall notify all affected utility companies at least two full working days (48 hours minimum) prior to beginning any construction in the vicinity of their facilities.

6. The contractor shall excavate inspection holes ("potholes") and determine the location and depth of all underground structures and utilities that are in the vicinity of and/or may be affected by the proposed improvement work prior to any construction work which could damage or conflict with said structures and/or utilities.

7. All material and methods to be subject to the approval of the City Engineer.

8. Repair or replace any existing damaged or altered existing improvements within public right-of-way as directed by the City Engineer.

9. If any existing utilities or any other facilities conflict with the proposed improvements, work shall stop and the Engineer notified immediately.

10. All irrigation lines to be removed, relocated or reconstructed as shown and/or as directed by the City Engineer, salvaged values and heads to be returned to the Director of Parks and Community Service.

11. All Survey Monuments shall be protected and perpetuated in place. Any disturbed or covered monuments shall be reset by a registered Civil Engineer or a licensed Land Surveyor at the direction of the City Engineer.

12. City approval of plans does not relieve the developer or contractor from responsibility for the correction of error and omission discovered during construction. Upon request, the required plan revisions shall be promptly submitted to the City Engineer for approval.

13. As-built original plans to be furnished to the City of Corona after completion of construction by the contractor.

STREETS

1. Actual thickness of base material to be determined by soil test and recommended by the Soils Engineer. R-values, sand equivalents and structural section of streets shall be submitted to the City of Corona for approval upon completion of rough grading unless approved otherwise by the Engineer.

2. The contractor shall not order or place any Portland cement concrete or asphalt concrete paving until the forms and subgrade and/or aggregate base have been inspected and approved by the engineer in the field.

3. All new or existing manhole shall be adjusted to grade in accordance per City of Corona Standard Plan 111-0.

4. The final or surface layer of asphalt concrete shall not be placed until all on-site improvements have been completed, including all grading and until all unacceptable concrete work has been removed and replaced unless approved otherwise by the Engineer.

SHEET INDEX

SHEET 1 TITLE SHEET
SHEET 2 TOPOGRAPHICAL SURVEY MAP & DEMOLITION PLAN
SHEET 3 STREET IMPROVEMENT PLANS
SHEET 4 TRAFFIC SIGNAL PLAN
SHEET 5 SIGNING AND STRIPING PLAN

OSBORN K&A DALTON SURVEYING ENGINEERING LAND PLANNING Engineering, Inc.
357 N. SHERIDAN STREET
SUITE 117
CORONA, CALIFORNIA 92880
TEL (951) 279-1800
FAX (951) 279-4380

Designed by M.L. | Drawn by A.G. | Checked by E.J.A.
PLANS PREPARED UNDER SUPERVISION OF
Date

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

BENCH MARK: C-132 APRIL 1988 ELEV. 775.638
A 2 1/2" BRASS DISK STAMPED C-132 SET IN TOP CURB LOCATED 5' N. OF BCR N/E CURB RET. C.L. INT. MAGNOLIA ST. & FULLERTON AVE.

Scale: 1" = 20'

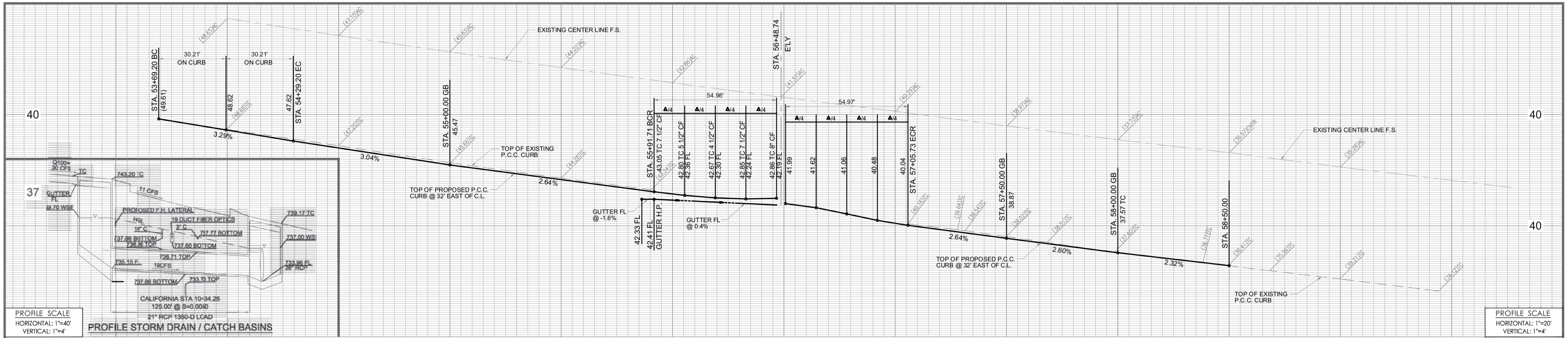
Engineering
Utilities

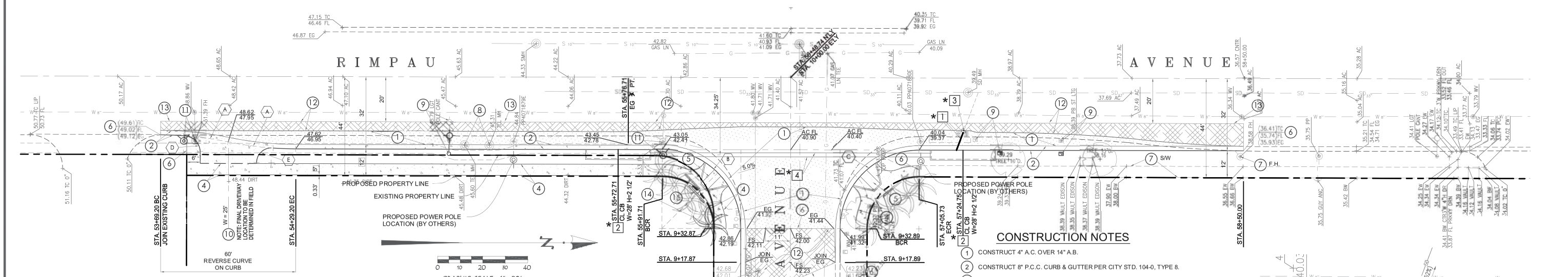
Amad Qattan Date
Director of Public Works
R.C.E. 61930 EXP. 09/30/2007

CITY OF CORONA
TITLE SHEET
RIMPAU AVENUE AND CALIFORNIA AVENUE

Drawing No. 06-111T
Sh 1 of 5

DWG: R:\109064.23\Final\Street\3170_Street_Title_1.dwg BY: RayH Oct 30, 2007 - 3:23:51pm





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LEGEND

- PORTLAND CEMENT CONCRETE
- ASPHALT CONCRETE PAVEMENT
- GRIND ASPHALT CONCRETE PAVEMENT

CONSTRUCTION NOTES

1. CONSTRUCT 4" A.C. OVER 14" A.B.
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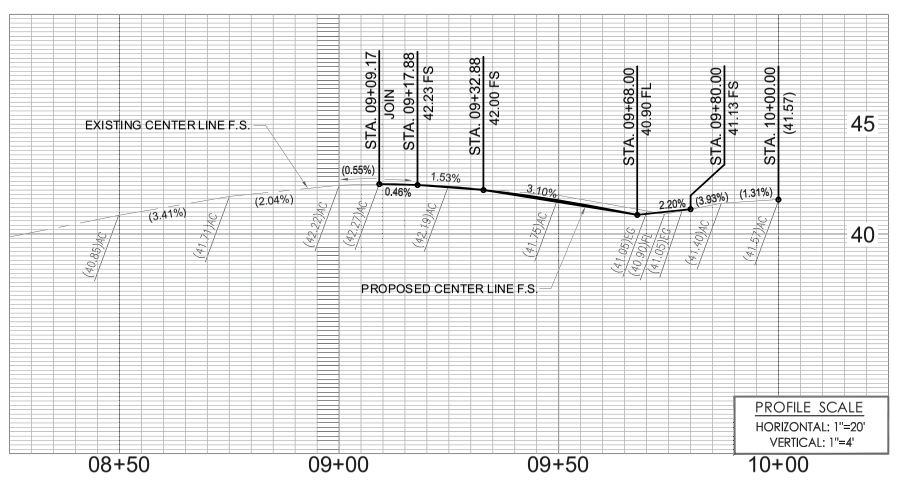
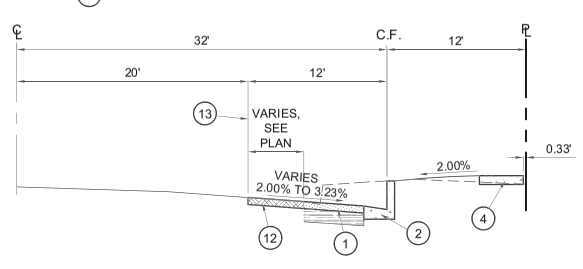
3. ~~CONSTRUCT P.C.C. CROSS GUTTER PER CITY STD. 106-0.~~ DOES NOT APPLY
4. CONSTRUCT P.C.C. SIDEWALK PER CITY STD. 103-0.
5. CONSTRUCT WHEELCHAIR CURB RAMP PER CITY STD. 102-0, CASE "B" WITH TRUNCATED DOME PANEL.
6. SAW-CUT AND JOIN.
7. PROTECT IN PLACE
8. ADJUST TO GRADE
9. RELOCATE STREET LIGHT AND/OR PULL BOX.
10. CONSTRUCT P.C.C. DRIVEWAY APPROACH PER CITY STD. 100 - 0 (ALLEY APPROACH) MODIFIED PER PLAN, W=25'.
11. REMOVE AND REPLACE F.H.
12. GRIND EXISTING SURFACE AS NECESSARY TO ACCOMMODATE 1 1/2" MIN. A.C. OVERLAY.
13. HEADER CUT AND JOIN.
14. RELOCATE PALM TREE.
15. RELOCATE MONUMENT SIGN.

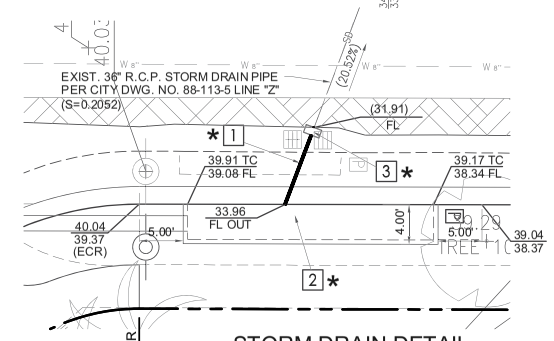


CALIFORNIA AVENUE C.L. PROFILE



TYPICAL SECTION

N.T.S.



STORM DRAIN DETAIL

N.T.S.

STORM DRAIN NOTES

* 1 INSTALL 10± OF 36" R.C.P. 1750-D S.D. PIPE AT 20.52% PER DETAIL SHOWN HEREON.
* 2 CONSTRUCT CATCH BASIN PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (2006 EDITION) STD. NO. 300-2 AND LOCAL DEPRESSION PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (2006 EDITION) STD. NO. 313-2 CASE "E".
* 3 INSTALL CONCRETE COLLAR FOR RCP (36") PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (2006 EDITION) STD. PLAN 380-3.
* 4 CONSTRUCT 21" RCP 1350-D STORM DRAIN PIPE PER PROFILE HERE ON

* NOTES TO CONTRACTOR:
- A - CONTRACTOR TO VERIFY LOCATION & ELEVATION PRIOR TO CONSTRUCTION.
- B - CONTRACTOR TO MAINTAIN EXISTING PIPE ALIGNMENT.
- C - SLOPE FLOOR OF BASIN AT 1.0% MIN. GRADE TOWARDS OUTLET PIPE.

NOTE: "THE SURVEY, TOPO, AND BASE DRAWINGS FOR THIS DESIGN WERE PROVIDED BY THE CITY OF CORONA, AND THE DESIGN OF SHEETS 4 & 5 WERE PREPARED BY OTHERS."

Underground Service Alert
Call: TOLL FREE 1-800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

Designed by	Drawn by	Checked by
M.L.	A.G.	E.J.A.

PLANS PREPARED UNDER SUPERVISION OF

Date

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

BENCH MARK: C-132 APRIL 1988 ELEV. 775.638
A 2 1/2" BRASS DISK STAMPED C-132 SET IN TOP CURB LOCATED 5' N. OF BCR N/E CURB RET. C.L. INT. MAGNOLIA ST. & FULLERTON AVE.

Scale: 1" = 20'

Engineering
Utilities

Amad Qattan — Date
Director of Public Works
R.C.E. 61930 EXP. 09/30/2007

CITY OF CORONA
STREET IMPROVEMENT PLANS
RIMPAU AVENUE AND CALIFORNIA AVENUE

Drawing No. 06-111T
Sh 3 of 5

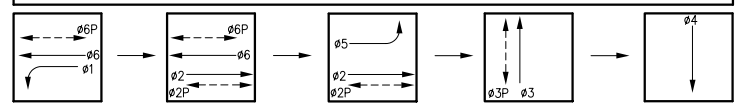
DWG: R:\109064.23\Final\Street\3170_Street_Plan_3.dwg BY: RayH Oct 30, 2007 - 3:23:35pm

CONDUCTOR SCHEDULE

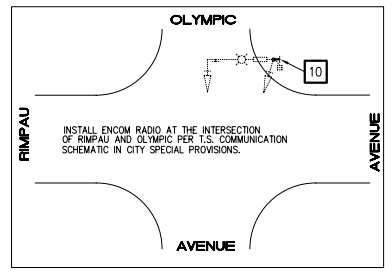
AWG SIZE, WIRE OR CABLE TYPE	STD	PHASES	CONDUIT SIZE AND RUN NUMBER 1	2	3	4	5	6	7	8	9	10	11
12 WIRE CONDUCTOR CABLE 11–#14 1–#12	1	ø3, ø3P /ø3PPB	–	–	–	1/1	1/1	1/1	1/1	–	–	–	–
	2	ø3 / –	–	–	1/–	1/–	1/–	1/–	1/–	–	–	–	–
	3	ø1,ø5,ø6,ø6P /ø6PPB	–	1/1	1/1	1/1	1/1	1/1	1/1	–	–	–	–
	4	ø6P /ø6PPB	1/1	1/1	1/1	1/1	1/1	1/1	1/1	–	–	–	–
3 WIRE CONDUCTOR CABLE	5	ø4 /–	–	–	–	–	–	1/–	1/–	1/–	1/–	1/–	1/–
	6	ø4 /–	–	–	–	–	–	1/–	1/–	1/–	1/–	1/–	–
	7	ø1,ø2,ø5,ø2P /–	–	–	–	–	–	1/–	1/–	1/–	1/–	–	–
	8	– /ø2PPB	–	–	–	–	–	–/1	–/1	–/1	–	–	–
	9	ø3P /ø2PPB	–	–	–	–	–	1/1	1/1	–	–	–	–
	10	ø2P /ø3PPB	–	–	–	–	1/1	1/1	1/1	–	–	–	–
		TOTAL CABLES	1/1	2/2	3/2	4/3	5/4	9/6	9/6	3/1	3/–	2/–	1/–
#10		LUMINAIRE	–	2	2	2	2	2	–	2	2	–	–
#12		IISNS	–	–	2	2	2	2	–	2	2	–	–
4#20		EVPE	–	1	2	2	2	3	3	1	1	–	–
3–#16		VIDEO POWER CABLE	–	2	3	3	3	4	4	1	1	–	–
*		VIDEO CABLE	–	2	3	3	3	4	4	1	1	–	–
ANTENNA CABLE		SPREAD SPECTRUM	–	–	–	–	1	–	–	–	–	–	–
CAMERA CABLE		CCTV	–	–	–	–	1	–	–	–	–	–	–
TYPE E DLC		DETECTION	–	–	–	–	–	1	1	1	1	–	–
PERCENT FILL			7%	20%	17%	21%	26%	20%	20%	22%	20%	10%	5%
CONDUIT SIZES (INCHES)			3"	3"	4"	4"	4"	2–4"	2–4"	3"	3"	3"	3"

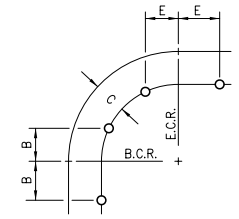
* BELDON #8281 COAXIAL CABLE

PHASE SEQUENCE DIAGRAM

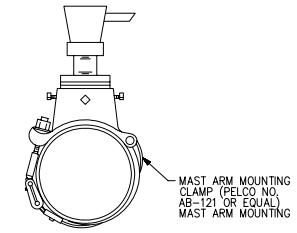


OPERATION: ø1 AND ø5 SHALL NOT OPERATE SIMULTANEOUSLY.





SIGNAL STANDARD PLACEMENT DETAIL
NO SCALE



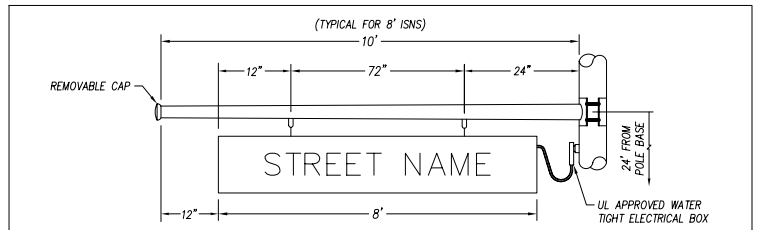
EMERGENCY VEHICLE PRE-EMPTION DETECTOR ASSEMBLY

DETAIL "A"
NO SCALE

POLE SCHEDULE

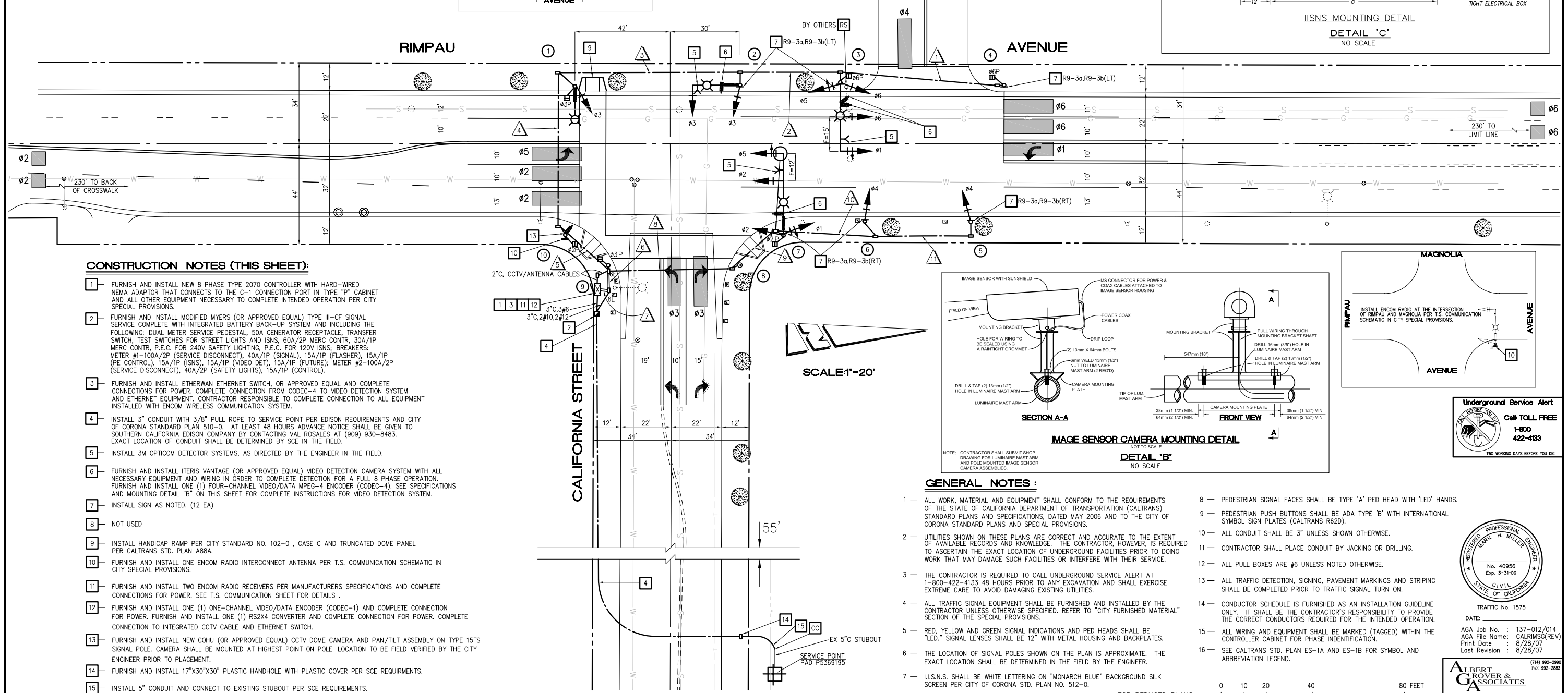
No.	STANDARD TYPE	HGT.	SIG. M.A.	LUM. M.A.	LUMINAIRE HPS	IISNS LEGEND	SIGNAL MOUNTING VEHICLE			PED	PPB PHASE	QUAD	POLE LOCATION "B"	"E"	"C"	REMARKS
1	15TS	30'	–	15'	250W	California ST 1100 E	–	–	SV-1-T	SP-1-T	ø3	N	AS SHOWN		2.5'	
2	17-3-100	30'	20'	15'	250W	Rimpau AVE 1500 S	MAS	–	SV-1-T	–	–	–	AS SHOWN		2.5	
3	19-4-100	30'	30'	15'	250W	–	MAS	MAS	SV-2-TA	SP-1-T	ø6	W	–	5'	4'	
4	1-A	7'	–	–	–	–	–	–	–	TP-1-T	ø6	W	2.5'	–	2.5'	
5	1-A	10'	–	–	–	–	–	–	TV-1-T	–	–	–	AS SHOWN		2.5	
6	1-A	10'	–	–	–	–	–	–	TV-1-T	–	–	–	AS SHOWN		2.5'	
7	24-4-100	30'	35'	15'	250W	California ST 1100 E	MAS	MAS	SV-2-TA	SP-1-T	–	–	–	8'	7'	
8	PPB POST	40"	–	–	–	–	–	–	–	–	ø2	W	14'	–	2.5	
9	1-A	7'	–	–	–	–	–	–	–	TP-1-T	ø2	W	14'	–	2.5'	
10	15TS	30'	–	–	–	–	–	–	–	SP-1-T	ø3	N	–	15'	7'	Install antenna at 30'

NOTE: ALL POLES, MAST ARMS, LUMINAIRES, IISNS LEGENDS AND MOUNTING HARDWARE WILL BE CITY-FURNISHED.
*-INSTALL IISNS ON SPECIAL ARM (SEE DETAIL "C").



IISNS MOUNTING DETAIL

DETAIL "C"
NO SCALE



CONSTRUCTION NOTES (THIS SHEET):

1 — FURNISH AND INSTALL NEW 8 PHASE TYPE 2070 CONTROLLER WITH HARD-WIRED NEMA ADAPTOR THAT CONNECTS TO THE C-1 CONNECTION PORT IN TYPE "P" CABINET AND ALL OTHER EQUIPMENT NECESSARY TO COMPLETE INTENDED OPERATION PER CITY SPECIAL PROVISIONS.

2 — FURNISH AND INSTALL MODIFIED MYERS (OR APPROVED EQUAL) TYPE III-CF SIGNAL SERVICE COMPLETE WITH INTEGRATED BATTERY BACK-UP SYSTEM AND INCLUDING THE FOLLOWING: DUAL METER SERVICE PEDESTAL, 50A GENERATOR RECEPTACLE, TRANSFER SWITCH, TEST SWITCHES FOR STREET LIGHTS AND ISNS, 60A/2P MERC CONTR, 30A/1P MERC CONTR, P.E.C. FOR 240V SAFETY LIGHTING, P.E.C. FOR 120V ISNS; BREAKERS: METER #1-100A/2P (SERVICE DISCONNECT), 40A/1P (SIGNAL), 15A/1P (FLASHER), 15A/1P (PE CONTROL), 15A/1P (ISNS), 15A/1P (VIDEO DET), 15A/1P (FUTURE); METER #2-100A/2P (SERVICE DISCONNECT), 40A/2P (SAFETY LIGHTS), 15A/1P (CONTROL).

3 — FURNISH AND INSTALL ETHERWAN ETHERNET SWITCH, OR APPROVED EQUAL AND COMPLETE CONNECTIONS FOR POWER. COMPLETE CONNECTION FROM CODEC-4 TO VIDEO DETECTION SYSTEM AND ETHERNET EQUIPMENT. CONTRACTOR RESPONSIBLE TO COMPLETE CONNECTION TO ALL EQUIPMENT INSTALLED WITH ENCOM WIRELESS COMMUNICATION SYSTEM.

4 — INSTALL 3" CONDUIT WITH 3/8" PULL ROPE TO SERVICE POINT PER EDISON REQUIREMENTS AND CITY OF CORONA STANDARD PLAN 510-0. AT LEAST 48 HOURS ADVANCE NOTICE SHALL BE GIVEN TO SOUTHERN CALIFORNIA EDISON COMPANY BY CONTACTING VAL ROSALES AT (909) 930-8483. EXACT LOCATION OF CONDUIT SHALL BE DETERMINED BY SCE IN THE FIELD.

5 — INSTALL 3M OPTICOM DETECTOR SYSTEMS, AS DIRECTED BY THE ENGINEER IN THE FIELD.

6 — FURNISH AND INSTALL ITERIS VANTAGE (OR APPROVED EQUAL) VIDEO DETECTION CAMERA SYSTEM WITH ALL NECESSARY EQUIPMENT AND WIRING IN ORDER TO COMPLETE DETECTION FOR A FULL 8 PHASE OPERATION. FURNISH AND INSTALL ONE (1) FOUR-CHANNEL VIDEO/DATA MPEG-4 ENCODER (CODEC-4). SEE SPECIFICATIONS AND MOUNTING DETAIL "B" ON THIS SHEET FOR COMPLETE INSTRUCTIONS FOR VIDEO DETECTION SYSTEM.

7 — INSTALL SIGN AS NOTED. (12 EA).

8 — NOT USED

9 — INSTALL HANDICAP RAMP PER CITY STANDARD NO. 102-0 , CASE C AND TRUNCATED DOME PANEL PER CALTRANS STD. PLAN A88A.

10 — FURNISH AND INSTALL ONE ENCOM RADIO INTERCONNECT ANTENNA PER T.S. COMMUNICATION SCHEMATIC IN CITY SPECIAL PROVISIONS.

11 — FURNISH AND INSTALL TWO ENCOM RADIO RECEIVERS PER MANUFACTURERS SPECIFICATIONS AND COMPLETE CONNECTIONS FOR POWER. SEE T.S. COMMUNICATION SHEET FOR DETAILS .

12 — FURNISH AND INSTALL ONE (1) ONE-CHANNEL VIDEO/DATA ENCODER (CODEC-1) AND COMPLETE CONNECTION FOR POWER. FURNISH AND INSTALL ONE (1) RS2X4 CONVERTER AND COMPLETE CONNECTION FOR POWER. COMPLETE CONNECTION TO INTEGRATED CCTV CABLE AND ETHERNET SWITCH.

13 — FURNISH AND INSTALL NEW COHU (OR APPROVED EQUAL) CCTV DOME CAMERA AND PAN/TILT ASSEMBLY ON TYPE 15TS SIGNAL POLE. CAMERA SHALL BE MOUNTED AT HIGHEST POINT ON POLE. LOCATION TO BE FIELD VERIFIED BY THE CITY ENGINEER PRIOR TO PLACEMENT.

14 — FURNISH AND INSTALL 17"X30"X30" PLASTIC HANDHOLE WITH PLASTIC COVER PER SCE REQUIRMENTS.

15 — INSTALL 5" CONDUIT AND CONNECT TO EXISTING STUBOUT PER SCE REQUIREMENTS.

IMAGE SENSOR CAMERA MOUNTING DETAIL
NOT TO SCALE

NOTE: CONTRACTOR SHALL SUBMIT SHOP DRAWING FOR LUMINAIRE MAST ARM AND POLE MOUNTED IMAGE SENSOR CAMERA ASSEMBLIES.

DETAIL "B"
NO SCALE

Underground Service Alert
DIG ALERT
Call TOLL FREE
1-800
422-4133
TWO WORKING DAYS BEFORE YOU DIG

GENERAL NOTES :

1 — ALL WORK, MATERIAL AND EQUIPMENT SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD PLANS AND SPECIFICATIONS, DATED MAY 2006 AND TO THE CITY OF CORONA STANDARD PLANS AND SPECIAL PROVISIONS.

2 — UTILITIES SHOWN ON THESE PLANS ARE CORRECT AND ACCURATE TO THE EXTENT OF AVAILABLE RECORDS AND KNOWLEDGE. THE CONTRACTOR, HOWEVER, IS REQUIRED TO ASCERTAIN THE EXACT LOCATION OF UNDERGROUND FACILITIES PRIOR TO DOING WORK THAT MAY DAMAGE SUCH FACILITIES OR INTERFERE WITH THEIR SERVICE.

3 — THE CONTRACTOR IS REQUIRED TO CALL UNDERGROUND SERVICE ALERT AT 1-800-422-4133 48 HOURS PRIOR TO ANY EXCAVATION AND SHALL EXERCISE EXTREME CARE TO AVOID DAMAGING EXISTING UTILITIES.

4 — ALL TRAFFIC SIGNAL EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. REFER TO "CITY FURNISHED MATERIAL" SECTION OF THE SPECIAL PROVISIONS.

5 — RED, YELLOW AND GREEN SIGNAL INDICATIONS AND PED HEADS SHALL BE "LED." SIGNAL LENSES SHALL BE 12" WITH METAL HOUSING AND BACKPLATES.

6 — THE LOCATION OF SIGNAL POLES SHOWN ON THE PLAN IS APPROXIMATE. THE EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

7 — I.I.S.N.S. SHALL BE WHITE LETTERING ON "MONARCH BLUE" BACKGROUND SILK SCREEN PER CITY OF CORONA STD. PLAN NO. 512-0.

8 — PEDESTRIAN SIGNAL FACES SHALL BE TYPE 'A' PED HEAD WITH 'LED' HANDS.

9 — PEDESTRIAN PUSH BUTTONS SHALL BE ADA TYPE 'B' WITH INTERNATIONAL SYMBOL SIGN PLATES (CALTRANS R62D).

10 — ALL CONDUIT SHALL BE 3" UNLESS SHOWN OTHERWISE.

11 — CONTRACTOR SHALL PLACE CONDUIT BY JACKING OR DRILLING.

12 — ALL PULL BOXES ARE #6 UNLESS NOTED OTHERWISE.

13 — ALL TRAFFIC DETECTION, SIGNING, PAVEMENT MARKINGS AND STRIPING SHALL BE COMPLETED PRIOR TO TRAFFIC SIGNAL TURN ON.

14 — CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDELINE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.

15 — ALL WIRING AND EQUIPMENT SHALL BE MARKED (TAGGED) WITHIN THE CONTROLLER CABINET FOR PHASE INDENTIFICATION.

16 — SEE CALTRANS STD. PLAN ES-1A AND ES-1B FOR SYMBOL AND ABBREVIATION LEGEND.

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES

0 10 20 40 80 FEET

REGISTERED PROFESSIONAL ENGINEER MARK H. MILLER No. 40956 Exp. 3-31-09 CIVIL STATE OF CALIFORNIA

TRAFFIC No. 1575

DATE: _____

AGA Job No. : 137-012/014
AGA File Name: CALRIMSG(REV)
Print Date : 8/28/07
Last Revision : 8/28/07

ALBERT GROVER & ASSOCIATES
(714) 992-2990
FAX 992-2883
TRANSPORTATION CONSULTING ENGINEERS
211 E. Imperial Hwy., Suite 208 Fullerton, CA 92835

Designed by	Drawn by	Checked by
CAV	CAV	JAT

PLANS PREPARED UNDER SUPERVISION OF MARK MILLER
Date 8/28/2007 R. C. E. No. 40956

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

BENCH MARK

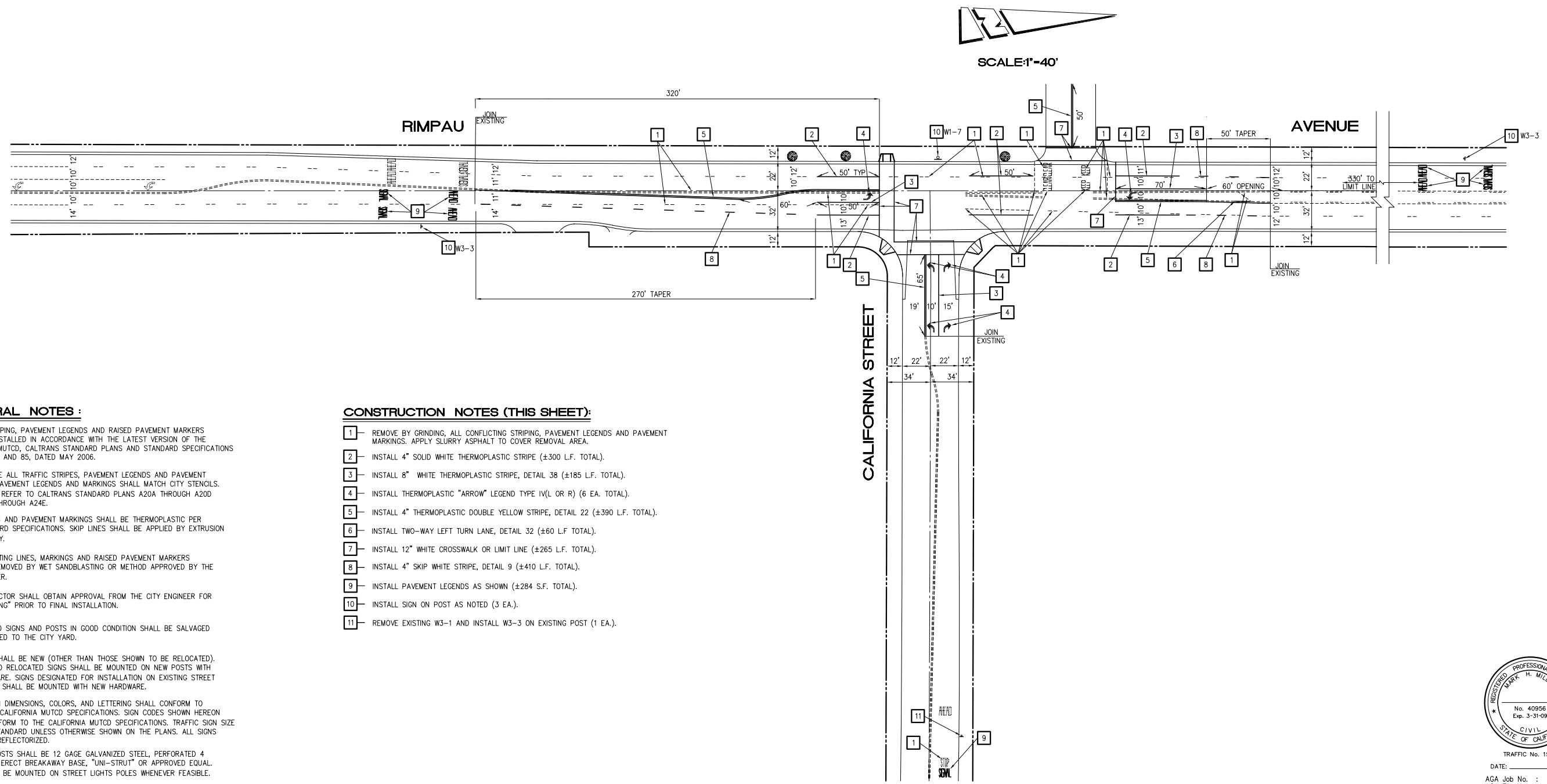
Scale 1" = 20'

Engineering _____
Utilities _____

Approved _____
By _____
AMAD QATTAN
Director of Public Works
R.C.E No. 61930 EXP. 9/30/2007

CITY OF CORONA
TRAFFIC SIGNAL PLAN
RIMPAU AVENUE AND CALIFORNIA STREET

Drawing No. 06-111T
Sh 4 of 5



GENERAL NOTES :

1 — TRAFFIC STRIPING, PAVEMENT LEGENDS AND RAISED PAVEMENT MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSION OF THE CALIFORNIA MUTCD, CALTRANS STANDARD PLANS AND STANDARD SPECIFICATIONS SECTIONS 84 AND 85, DATED MAY 2006.

2 — REFLECTORIZE ALL TRAFFIC STRIPES, PAVEMENT LEGENDS AND PAVEMENT MARKINGS. PAVEMENT LEGENDS AND MARKINGS SHALL MATCH CITY STENCILS. ALL DETAILS REFER TO CALTRANS STANDARD PLANS A20A THROUGH A20D AND A24A THROUGH A24E.

3 — ALL STRIPING AND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC PER CITY STANDARD SPECIFICATIONS. SKIP LINES SHALL BE APPLIED BY EXTRUSION METHOD ONLY.

4 — ALL CONFLICTING LINES, MARKINGS AND RAISED PAVEMENT MARKERS SHALL BE REMOVED BY WET SANDBLASTING OR METHOD APPROVED BY THE CITY ENGINEER.

5 — THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE CITY ENGINEER FOR "CAT TRACKING" PRIOR TO FINAL INSTALLATION.

6 — ALL REMOVED SIGNS AND POSTS IN GOOD CONDITION SHALL BE SALVAGED AND DELIVERED TO THE CITY YARD.

7 — ALL SIGNS SHALL BE NEW (OTHER THAN THOSE SHOWN TO BE RELOCATED). ALL NEW AND RELOCATED SIGNS SHALL BE MOUNTED ON NEW POSTS WITH NEW HARDWARE. SIGNS DESIGNATED FOR INSTALLATION ON EXISTING STREET LIGHT POLES SHALL BE MOUNTED WITH NEW HARDWARE.

8 — TRAFFIC SIGN DIMENSIONS, COLORS, AND LETTERING SHALL CONFORM TO THE LATEST CALIFORNIA MUTCD SPECIFICATIONS. SIGN CODES SHOWN HEREON ARE TO CONFORM TO THE CALIFORNIA MUTCD SPECIFICATIONS. TRAFFIC SIGN SIZE SHALL BE STANDARD UNLESS OTHERWISE SHOWN ON THE PLANS. ALL SIGNS ARE TO BE REFLECTORIZED.

9 — NEW SIGN POSTS SHALL BE 12 GAGE GALVANIZED STEEL, PERFORATED 4 SIDES, EASY ERECT BREAKAWAY BASE, "UNI-STRUT" OR APPROVED EQUAL. SIGNS SHALL BE MOUNTED ON STREET LIGHTS POLES WHENEVER FEASIBLE.

10 — IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIARIZED WITH THE JOB SITE AND THE LOCATION OF ALL UNDERGROUND FACILITIES SHOWN OR NOT SHOWN ON THESE PLANS.

CONSTRUCTION NOTES (THIS SHEET):

1 — REMOVE BY GRINDING, ALL CONFLICTING STRIPING, PAVEMENT LEGENDS AND PAVEMENT MARKINGS. APPLY SLURRY ASPHALT TO COVER REMOVAL AREA.

2 — INSTALL 4" SOLID WHITE THERMOPLASTIC STRIPE (±300 L.F. TOTAL).

3 — INSTALL 8" WHITE THERMOPLASTIC STRIPE, DETAIL 38 (±185 L.F. TOTAL).

4 — INSTALL THERMOPLASTIC "ARROW" LEGEND TYPE IV(L OR R) (6 EA. TOTAL).

5 — INSTALL 4" THERMOPLASTIC DOUBLE YELLOW STRIPE, DETAIL 22 (±390 L.F. TOTAL).

6 — INSTALL TWO-WAY LEFT TURN LANE, DETAIL 32 (±60 L.F TOTAL).

7 — INSTALL 12" WHITE CROSSWALK OR LIMIT LINE (±265 L.F. TOTAL).

8 — INSTALL 4" SKIP WHITE STRIPE, DETAIL 9 (±410 L.F. TOTAL).

9 — INSTALL PAVEMENT LEGENDS AS SHOWN (±284 S.F. TOTAL).

10 — INSTALL SIGN ON POST AS NOTED (3 EA.).

11 — REMOVE EXISTING W3-1 AND INSTALL W3-3 ON EXISTING POST (1 EA.).

REGISTERED PROFESSIONAL ENGINEER MARK H. MILLER No. 40956 Exp. 3-31-09 CIVIL STATE OF CALIFORNIA

TRAFFIC No. 1575

DATE: _____

AGA Job No. : 137-012/014
AGA File Name: CALRIMST(REV)
Print Date : 8/28/07
Last Revision : 8/28/07

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 10 20 40 80 FEET

ALBERT GROVER & ASSOCIATES (714) 992-2990 FAX 992-2883
TRANSPORTATION CONSULTING ENGINEERS
211 E. Imperial Hwy., Suite 208 Fullerton, CA 92835

Designed by	Drawn by	Checked by
CAV	CAV	JAT

PLANS PREPARED UNDER SUPERVISION OF MARK MILLER
Date 8/28/2007 R. C. E. No. 40956

Reference Plans for these Improvements

Date	By	REVISIONS	App'd

BENCH MARK

Scale 1" = 20'

Engineering _____
Utilities _____

Approved _____
By _____ AMAD QATTAN, Director of Public Works, R.C.E. No. 61930 EXP. 9/30/2007

CITY OF CORONA
SIGNING AND STRIPING PLAN
RIMPAU AVENUE AND CALIFORNIA STREET

Drawing No. 06-111T
Sh 5 of 5

Appendix B

RTP and RTIP Project Listings

REGIONAL RTP PROJECTS								
CAT-EGORY	RTP ID	ROUTE #	ROUTE NAME	FROM	TO	DESCRIPTION	PROJECT COMPLE-TION BY*	PROJECT COST ($1,000'S)
O&M	REG0701	0	HIGHWAY OPERA-TIONS & MAINTE-NANCE	REGIONWIDE		STATE HIGHWAY PRESERVATION/MAINTENANCE AND OPERATIONS PROJECTS (INCLUDES SHOPP, HIGHWAY BRIDGE PROGRAM, EMERGENCY RELIEF, PUBLIC LAND HIGHWAYS, HAZARD ELIMINATION AND SAFETY, SAFE ROUTES TO SCHOOLS, HIGH RISK RURAL ROADS, AND SECTION 130 STP RAILROAD PROGRAM PROJECTS)	ONGOING	SEE FINANCIAL PLAN HIGHWAY OPERATIONS AND MAINTENACE COST
O&M	REG0702	0	TRANSIT OPERA-TIONS & MAINTE-NANCE	REGIONWIDE		TRANSIT PRESERVATION/MAINTENANCE, REHABILITA-TION/REPLACEMENT AND OPERATIONS PROJECTS	ONGOING	SEE FINANCIAL PLAN TRANSIT OPERATIONS AND MAINTENACE COST
O&M	REG0703	0	ARTERIAL OPERA-TIONS & MAINTE-NANCE	REGIONWIDE		ARTERIAL PRESERVATION/MAINTENANCE AND OPERA-TIONS PROJECTS	ONGOING	SEE FINANCIAL PLAN LOCAL STREETS AND ROADS OPERA-TIONS AND MAIN-TENACE COST
OTHER	REG0704	0	OTHER PROGRAMS	REGIONWIDE		RECREATIONAL TRAILS, SCENIC BYWAYS, TRANS-PORTATION COMMUNITY AND SYSTEM PRESERVATION PROGRAM PROJECTS	ONGOING	SEE FINANCIAL PLAN OTHER COST
OTHER	100705	0	TBD			INTERMODAL FACILITIES (LOCATION TBD)	TBD	PRIVATELY FINANCED

* For modeled projects, represents the Plan network year for which the project was analyzed for the RTP modeling and regional emissions analysis

Local Highway

CITY FUNDS		4		25	29			4	25					29
RIV071247 Total		36		217	253			36	217					253

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amend	Source
RIV031223	Riverside	SCAB		RIV031223	LUM02				L	EXEMPT	0	2008
							PTC	23,798	Agency	CITIES & COUNTY		

IN RIVERSIDE COUNTY LUMP SUM FOR REHABILITATION AND RECONSTRUCTION PROJECTS (NON CAPACITY ENHANCING PROJECTS) (CONSISTENT W/ 40 CFR PART 93.126, 127, 128, EXEMPT TABLE 2 &3)

Fund	ENG	R/W	CON	Total	Prior	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	Total
STP LOCAL			20,249	20,249	15,227	5,022						20,249
CITY FUNDS	475		3,074	3,549	2,554	995						3,549
RIV031223 Total	475		23,323	23,798	17,781	6,017						23,798

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amend	Source
RIV070710	Riverside	SCAB		REG0701	LUM03				L	EXEMPT	0	2008
							PTC	2,134	Agency	CITIES & COUNTY		

IN RIVERSIDE COUNTY HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP) PROJECTS LUMP SUM (CONSISTENT W/ 40 CFR PART 93.126, 127, 128 EXEMPT TABLES 2 & 3)

Fund	ENG	R/W	CON	Total	Prior	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	Total
HIGHWAY SAFETY IMPROVEMENT PROGRAM			1,687	1,687		1,687						1,687
CITY FUNDS			447	447		447						447
RIV070710 Total			2,134	2,134		2,134						2,134

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amend	Source
RIV52001	Riverside	SCAB		RIV52001	LUM02				L	EXEMPT	0	2008
							PTC	14,100	Agency	CITIES & COUNTY		

IN RIVERSIDE CNTY LUMP SUM - REHABILITATION & RECONSTRUCTION PROJECTS (PROJECTS CONSISTENT W/ 40 CFR PART 93.126,127,128, EXEMPT TABLES 2 & 3.

Fund	ENG	R/W	CON	Total	Prior	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	Total
STP LOCAL			12,580	12,580	12,236	344						12,580
CITY FUNDS	375		1,145	1,520	1,475	45						1,520
RIV52001 Total	375		13,725	14,100	13,711	389						14,100

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amend	Source
RIV010209	Riverside	SCAB	R250	RIV010209	CAN67				L	NON-EXEMPT	0	2008
							PTC	49,311	Agency	CORONA		

IN THE CITY OF CORONA - CONSTRUCT FOOTHILL PARKWAY WESTERLY EXTENSION 4 LANE ROAD FROM LINCOLN AVE TO PASEO GRANDE (APPROX 2.5 MILES)

Fund	ENG	R/W	CON	Total	Prior	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	Total
CITY FUNDS	1,311	8,000	18,718	28,029	9,311		18,718					28,029
WESTERN RIV TUMF	2,000	2,000	17,282	21,282	4,000		17,282					21,282
RIV010209 Total	3,311	10,000	36,000	49,311	13,311		36,000					49,311

2006/2007 HIGHWAY SAFETY IMPROVEMENT PROGRAM PLAN - SAFETY INDEX PROJECTS

	District	Agency	MPO	Location of Work	Description of Work	Total Project Cost	Federal Funds	Safety Index
1	10	Tuolumne County	RURAL	3 MILES OF TUOLUMNE ROAD BETWEEN SOULSBYVILLE ROAD AND WARDS FERRY ROAD.	INSTALL CENTERLINE RUMBLE STRIP AND HIGH VISIBILITY PAINT.	$25,400	$22,860	4334
2	04	Fremont	MTC	MOWRY AVE. EAST AND WEST OF OVERACKER AVE.	INSTALL MEDIAN BARRIER; INSTALL RAISED MEDIAN; IMPROVE DELINEATION.	$221,100	$198,990	360
3	02	Tehama County	RURAL	OLD HWY 99W FROM GYLE ROAD TO LOS FLORES AVENUE.	INSTALL RUMBLE STRIP ON BOTH SIDES OF ROAD.	$132,700	$119,430	307
4	04	Marin County	MTC	POINT REYES PETALUMA RD. SOUTH OF PLATFORM BRIDGE, MP 11.92 - MP 12.03.	INSTALL APPROX. 200FT GUARDRAIL	$44,000	$39,600	248
5	04	Santa Clara County	MTC	CAPITAL EXPRESSWAY FROM HWY 680 TO HWY 87.	UPGRADE TRAFFIC CONTROL SIGNS, PAVEMENT MARKINGS AND DELINEATION.	$308,000	$277,200	230
6	07	Ventura County	SCAG	WEST POTRERO ROAD FROM THOUSAND OAKS CITY LIMIT TO 3,500 WEST.	UPGRADE EXISTING GUARDRAIL; RECONSTRUCT AC BERM.	$495,000	$445,500	225
7	12	Anaheim	SCAG	BALL RD BETWEEN KNOTT AVE & BROOKHURST ST.	UPGRADE TRAFFIC SIGNALS; INSTALL PAVEMENT MARKINGS, CROSSWALKS AND DELINEATION; CONSTRUCT ADA RAMPS; LENGTHEN LEFT TURN POCKETS.	$812,700	$731,430	218
8	06	Tulare County	TCAG	INTERSECTION OF AVENUE 280 AND ROAD 156.	INSTALL TRAFFIC SIGNALS.	$478,500	$430,650	175
9	04	Saratoga	MTC	SARATOGA-LOS GATOS RD (SR 9) BETWEEN BIG BASIN WAY IN SARATOGA AND LOS GATOS BLVD IN LOS GATOS	CONSTRUCT SIDEWALKS AND CURB RAMPS; RELOCATE UTILITY POLE; SIGNING AND STRIPING; CONSTRUCT PED/BIKE BRIDGE.	$1,020,000	$900,000	165
10	10	Oakdale	StanCOG	YOSEMITE AVENUE AT "G" STREET.	UPGRADE TEMPORARY TRAFFIC SIGNAL WITH PERMANENT SIGNAL.	$220,000	$198,000	152
11	10	Tuolumne County	RURAL	ENTIRE LENGTH OF LA GRANGE ROAD; 13 MILES.	INSTALL CENTERLINE RUMBLE STRIP AND HIGH VISIBILITY PAINT.	$103,619	$93,600	137
12	03	Sacramento	SACOG	INTERSECTION OF RIO LINDA BLVD AT BELL AVENUE.	UPGRADE TRAFFIC SIGNALS TO INCLUDE LEFT TURN PHASE.	$405,100	$364,590	131

2006/2007 HIGHWAY SAFETY IMPROVEMENT PROGRAM PLAN - SAFETY INDEX PROJECTS

	District	Agency	MPO	Location of Work	Description of Work	Total Project Cost	Federal Funds	Safety Index
13	07	Downey	SCAG	IN THE VICINITY OF 20 SCHOOLS	VARIOUS MODIFICATIONS AND IMPROVEMENTS TO EXISTING SCHOOL TRAFFIC WARNING SIGNS, MARKINGS AND PAVEMENT LEGENDS.	$48,400	$43,560	130
14	10	Sutter Creek	RURAL	OLD SUTTER HILL ROAD AT RIDGE ROAD APPROXIMATELY 0.1 MILES EAST OF THE SR 104 INTERSECTION WITH SR 49.	REALIGN OLD SUTTER HILL ROAD INTERSECTION WITH RIDGE ROAD; INCLUDES THE REALIGNMENT OF OLD RIDGE ROAD.	$974,000	$876,600	125
15	02	Tehama County	RURAL	ORANGEWOOD RD APPROX 0.6 MILES WEST OF HALL ROAD AT TEHAMA COLUSA CANAL CROSSING	IMPROVE STOPPING SIGHT DISTANCE WITH VERTICAL ALIGNMENT CORRECTION AND TREE REMOVAL.	$715,000	$643,500	120
16	07	La Canada Flintridge	SCAG	ANGELES CREST HIGHWAY (SR 2) BETWEEN I-210 FOOTHILL FREEWAY AND OLIVE DRIVE.	CONSTRUCT RAISED CENTER MEDIAN.	$583,000	$524,700	106
17	08	Fontana	SCAG	ON SIERRA AVENUE BETWEEN VALLEY BOULEVARD AND SAN BERNARDINO AVENUE.	CONSTRUCT RAISED CONCRETE MEDIAN.	$1,145,100	$900,000	105
18	07	Hawthorne	SCAG	ON ROSECRANS AVE FROM INGLEWOOD AVE TO 250' WEST OF I-405 SB OFF-RAMP.	UPGRADE AND CONSTRUCT RAISED MEDIAN; IMPROVE EXISTING SHOULDERS; UPGRADE PAVEMENT MARKINGS AND DELINEATION.	$2,001,000	$900,000	104
19	06	Chowchilla	MCTC	INTERSECTION OF ROBERTSON BLVD (SR 233) AND 3RD ST.	INSTALL IN-PAVEMENT CROSSWALK LIGHTS.	$36,000	$32,400	97
20	04	San Ramon	MTC	4 INTERSECTIONS WITH SAN RAMON BLVD: MONTEVIDEO DR., WESTSIDE DR., TALAVERA DR., WOODBOROUGH WAY.	MODIFY EXISTING MEDIAN; INSTALL REFUGE LANE; EXTEND LEFT-TURN LANE.	$700,000	$630,000	96
					Total:	$10,468,619	$8,372,610	

2006/2007 HIGHWAY SAFETY IMPROVEMENT PROGRAM - WORK TYPE PROJECTS

	District	Agency	MPO	Location of Work	Description of Work	Total Project Cost	Federal Funds
1	01	Lake County	RURAL	VARIOUS COUNTY-MAINTAINED ROADS.	UPGRADE ALL COUNTY-MAINTAINED STOP SIGNS AND STREET NAME SIGNS PER MUTCD STANDARDS.	$518,000	$466,200
2	01	Del Norte County	RURAL	ON NORTHCREST DRIVE BETWEEN PM .632 AND PM .674 AND ON WASHINGTON BLVD BETWEEN PM 2.145 AND PM 2.279.	CONSTRUCT CURB, GUTTER AND SIDEWALK AND CURB RAMPS.	$352,000	$316,800
3	01	Del Norte County	RURAL	INTERSECTIONS OF OLD MILL ROAD AND NORTHCREST DR.; LAKE EARL DR. AND PINE GROVE RD.; WASHINGTON BLVD AND NORTHCREST DR.	INSTALL IN-PAVEMENT LIGHTED CROSSWALKS	$120,000	$108,000
4	02	Redding	SCRTPA	SOUTH BONNYVIEW RD FROM THE SACRAMENTO RIVER TO SR 273.	INSTALL STREET SAFETY LIGHTING; WIDEN SHOULDER; INSTALL BIKE LANES.	$900,000	$810,000
5	02	Anderson	SCRTPA	INTERSECTION OF SR 273 AND ALEXANDER AVENUE/3RD STREET.	COOPERATIVE PROJECT WITH CALTRANS. INSTALL TRAFFIC SIGNAL AND IMPROVE TURNING LANES	$1,140,000	$513,000
6	03	Woodland	SACOG	INTERSECTION OF SR16 AT KENTUCKY AVE/COUNTY ROAD 20.	COOPERATIVE PROJECT WITH CALTRANS. INSTALL NEW TRAFFIC SIGNALS AND MODIFY INTERSECTION. WOODLAND SHARE 25% FOR KENTUCKY AVENUE.	$1,988,800	$450,000
7	03	Yolo County	SACOG	INTERSECTION OF SR16 AT KENTUCKY AVE/COUNTY ROAD 20.	COOPERATIVE PROJECT WITH CALTRANS. INSTALL NEW TRAFFIC SIGNALS AND MODIFY INTERSECTION. YOLO COUNTY 25% SHARE FOR COUNTY ROAD 20.	$1,988,800	$450,000

2006/2007 HIGHWAY SAFETY IMPROVEMENT PROGRAM - WORK TYPE PROJECTS

	District	Agency	MPO	Location of Work	Description of Work	Total Project Cost	Federal Funds
8	03	Live Oak	SACOG	SR99 (LIVE OAK BLVD) AT ELM STREET.	INSTALL NEW TRAFFIC SIGNALS WITH INTERCONNECTS TO UNION PACIFIC RR CROSSING AND EXISTING SIGNAL AT NEXT INTERSECTION.	$1,507,000	$900,000
9	03	Yuba County	SACOG	INTERSECTION OF HAMMONTON-SMARTVILLE ROAD AND SIMPSON LANE IN LINDA.	INSTALL NEW 3-PHASE TRAFFIC SIGNAL.	$396,000	$356,400
10	03	Sacramento County	SACOG	INTERSECTION OF CYPRESS AVE. AND GARFIELD AVE.	INSTALL TRAFFIC SIGNALS WITH MINOR WIDENING.	$877,250	$392,325
11	04	Lafayette	MTC	S-CURVE PARALLEL TO RELIEZ VALLEY CREEK NEAR LAFAYETTE HIGH SCHOOL; THE WARNER COURT CURVE.	INSTALL 250 LF OF GUARD RAIL; INSTALL NEW CURB AND GUTTER AND REGRADE SIDE SLOPES.	$120,500	$108,450
12	04	Campbell	MTC	INTERSECTION OF HAMILTON AVE AND PHOENIX DR.	INSTALL TRAFFIC SIGNAL WITH INTERCONNECT.	$380,000	$342,000
13	04	Pittsburg	MTC	POWER AVE., APPROX. 700' WEST OF ANDREW AVE.	INSTALL PEDESTRIAN ACTIVATED FLASHING BEACONS.	$71,200	$64,080
14	04	Pittsburg	MTC	STONEMAN AVE AT MEADOWBROOK CIRCLE.	INSTALL IN-PAVEMENT CROSSWALK LIGHTS AND ASSOCIATED IMPROVEMENTS.	$56,000	$44,800
15	04	Santa Clara County	MTC	QUIMBY RD FROM DEEDHAM DR. TO MT. HAMILTON RD (SR130).	INSTALL AND UPGRADE METAL BEAM GUARDRAIL; UPGRADE SIGNING AND STRIPING.	$258,500	$232,650
16	04	San Leandro	MTC	INTERSECTION OF WASHINGTON AVE AND ESTABROOK ST.	INSTALL TRAFFIC SIGNALS WITH INTERCONNECT; REMOVE PORK CHOP ISLAND; RELOCATE UTILITY POLE; INSTALL CURB RAMPS.	$465,800	$419,220

2006/2007 HIGHWAY SAFETY IMPROVEMENT PROGRAM - WORK TYPE PROJECTS

	District	Agency	MPO	Location of Work	Description of Work	Total Project Cost	Federal Funds
17	04	San Francisco	MTC	VARIOUS LOCATIONS: TWIN PEAKS BLVD; O'SHAUGHNESSY BLVD AT DEL VALLE AVE; PORTOLA DR. NORTH OF BURNETT AVE. AND WEST OF BURNETT AVE.	UPGRADE GUARDRAILS AND INSTALL END TREATMENTS.	$535,600	$482,040
18	04	Pleasant Hill	MTC	CONTRA COSTA BLVD. BETWEEN TAYLOR BLVD. AND HARRIET DR.	CONSTRUCT SIDEWALK; INSTALL COUNT DOWN PEDESTRIAN HEADS.	$163,400	$147,060
19	04	Mill Valley	MTC	BOLSA AVE (ABOVE 164 HILLSIDE AVE), CAMINO ALTO (950FT N/O AZALEA DR) , 522 CASCADE AVE, 312 EDGEWOOD AVE, 160 ROSE AVE, AND 580 EDGEWOOD AVE.	INSTALL GUARDRAIL AT VARIOUS LOCATIONS.	$389,300	$350,370
20	04	Moraga	MTC	INTERSECTION OF MORAGA RD AND ASCOT DR.	INSTALL TRAFFIC SIGNAL; CONSTRUCT RAISED MEDIAN; INSTALL PED/BIKE IMPROVEMENTS.	$668,300	$601,470
21	05	Lompoc	SBCAG	300 BLOCK OF SOUTH "U" STREET AT THE SAN MIGUELITO CHANNEL.	CONSTRUCT PEDESTRIAN FOOTBRIDGE WITH ADA ACCESSIBLE APPROACH RAMPS AND SIDEWALK.	$275,000	$247,500
22	05	San Luis Obispo County	SLOCOG	EL CAMINO REAL AT CARMEL ROAD.	WIDEN EXISTING ROADWAY TO CONSTRUCT STANDARD LEFT TURN LANES AT THE NB AND SB APPROACHES TO THE INTERSECTION.	$511,500	$350,000
23	05	San Luis Obispo	SLOCOG	INTERSECTION OF GRAND AVENUE AND THE NB OFF RAMP OF STATE ROUTE 101.	COOPERATIVE PROJECT WITH CALTRANS. INSTALL TRAFFIC SIGNAL.	$370,000	$185,000
24	05	University of California - Santa Cruz	AMBAG	INTERSECTION OF EMPIRE GRADE DRIVE AND HELLER DRIVE AT THE WEST ENTRANCE TO UC SANTA CRUZ.	INSTALL TRAFFIC SIGNAL AND SAFETY LIGHTING.	$493,000	$443,700

2006/2007 HIGHWAY SAFETY IMPROVEMENT PROGRAM - WORK TYPE PROJECTS

	District	Agency	MPO	Location of Work	Description of Work	Total Project Cost	Federal Funds
25	05	Santa Cruz County	AMBAG	INTERSECTION OF GRAHAM HILL ROAD AND LOCKEWOOD LANE.	INSTALL TRAFFIC SIGNAL; WIDEN SHOULDER AND LENGTHEN LEFT TURN LANE ON GRAHAM HILL ROAD.	$500,000	$450,000
26	05	Buellton	SBCAG	MCMURRAY ROAD INTERSECTION WITH STATE HIGHWAY 246.	TRAFFIC SIGNAL UPGRADE; LEFT TURN PHASING, RESTRIPING AND WIDENING.	$418,000	$376,200
27	06	Madera County	MCTC	INTERSECTION OF CHILDREN'S BLVD. AND LANES BRIDGE.	INSTALL TRAFFIC SIGNALS WITH INTERCONNECT AND EMERGENCY VEHICLE PRE-EMPTION.	$512,200	$387,160
28	06	Reedley	COFCG	INTERSECTION OF REED AVE. AND MANNING AVE.; REED AVE. BETWEEN "I" STREET AND MANNING AVE.; REED AVE. AND NORTH AVE.	INSTALL TRAFFIC SIGNALS; INSTALL SAFETY STREET LIGHTING; CONSTRUCT ROUNDABOUT; INSTALL IN-PAVEMENT CROSSWALK LIGHTS.	$834,600	$600,000
29	06	Kern County	KCOG	INTERSECTION OF FLOWER ST. AND HALEY ST.	UPGRADE TRAFFIC SIGNALS; REMOVE FIXED OBJECTS; CONSTRUCT CURB RAMPS.	$303,600	$273,240
30	06	Fresno	COFCG	INTERSECTION OF CLINTON AVE. AND WEST AVE.	UPGRADE TRAFFIC SIGNALS WITH LEFT-TURN PHASING.	$423,560	$211,780
31	06	Fresno	COFCG	INTERSECTION OF CEDAR AVE. AND BARSTOW AVE.	REMOVE VALLEY GUTTER CROSSING.	$114,800	$103,320
32	06	Wasco	KCOG	MID-BLOCK CROSSWALK ON POSO DRIVE BETWEEN GRIFFITH AVE. AND POPLAR AVE.	INSTALL IN-PAVEMENT CROSSWALK LIGHTS.	$55,000	$49,500
33	06	Wasco	KCOG	INTERSECTION OF PALM AVE. AND 9TH PLACE.	INSTALL IN-PAVEMENT CROSSWALK LIGHTS.	$189,700	$170,730
34	07	El Segundo	SCAG	VISTA DEL MAR FROM 45TH ST. TO GRAND AVE.	CONVERT FOUR-LANE ARTERIAL TO THREE LANES; CONSTRUCT CENTER BARRIER WITH ATTENUATION.	$500,000	$450,000

2006/2007 HIGHWAY SAFETY IMPROVEMENT PROGRAM - WORK TYPE PROJECTS

	District	Agency	MPO	Location of Work	Description of Work	Total Project Cost	Federal Funds
35	07	Inglewood	SCAG	INTERSECTION OF MANCHESTER BLVD AND HILLCREST BLVD.	CONSTRUCT PEDESTRIAN BULB-OUT.	$172,000	$154,800
36	07	Irwindale	SCAG	ARROW HIGHWAY AT THE SANTA FE DAM.	INSTALL MID-BLOCK BIKE/PEDESTRIAN CROSSING WITH IN-ROADWAY WARNING LIGHTS AND ADVANCE WARNING FLASHING YELLOW BEACONS.	$312,800	$281,520
37	07	Lawndale	SCAG	INTERSECTION OF MARINE AVENUE AND MANSEL AVENUE.	INSTALL TRAFFIC SIGNAL; CONSTRUCT LEFT TURN LANES; ENHANCE PAVEMENT MARKINGS.	$248,700	$223,830
38	07	Los Angeles	SCAG	WOODLEY AVENUE/ RAYMER STREET AND DE SOTO STREET/ KNAPP STREET AT METRO LINK'S HIGHWAY-RAIL GRADE CROSSINGS.	UPGRADE TRAFFIC SIGNAL EQUIPMENT, ROADWAY MEDIANS AND OTHER TRAFFIC CONTROL DEVICES; RAILROAD PREEMPTION	$849,300	$764,370
39	07	Los Angeles	SCAG	CAMARILLO ST, RIVERSIDE DR. AND TUJUNGA AVE; VICTORY BLVD AT WOODMAN AVE.; HAZELTINE AVE AT SHERMAN WAY, VAN NUYS BLVD. AT VICTORY BLVD, MARTIN LUTHER KING BLVD AT NORMANDIE AVE. AND PARTHENIA ST. AT TAMPA AVE.	UPGRADE TRAFFIC SIGNALS; INSTALL PROTECTED AND/OR PROTECTED-PERMISSIVE LEFT TURN SIGNAL PHASING; INSTALL CURB RAMPS.	$802,000	$588,890
40	07	Los Angeles	SCAG	THROUGHOUT 113 MILES OF DESIGNATED BIKEWAYS WITHIN THE CITY OF LOS ANGELES.	UPGRADE EXISTING ROADWAY GRATES TO BICYCLE SAFETY GRATES.	$1,402,500	$450,000
41	07	Montebello	SCAG	INTERSECTION OF GARFIELD AVENUE AND VIA SAN CLEMENTE.	INSTALL TRAFFIC SIGNAL.	$245,500	$220,950
42	07	Rancho Palos Verdes	SCAG	INTERSECTION OF CRENSHAW BLVD. AND CRESTRIDGE ROAD.	UPGRADE TRAFFIC SIGNAL; INSTALL PROTECTED LEFT-TURN PHASING; UPGRADE PEDESTRIAN FACILITIES.	$236,000	$212,400

2006/2007 HIGHWAY SAFETY IMPROVEMENT PROGRAM - WORK TYPE PROJECTS

	District	Agency	MPO	Location of Work	Description of Work	Total Project Cost	Federal Funds
43	07	Santa Clarita	SCAG	SOUTHEAST INTERSECTION OF MCBEAN PARKWAY AND NEWHALL RANCH ROAD.	RESTRIPE DUAL RIGHT TURN LANE TO SINGLE LANE. RELOCATE EXISTING SIGNAL POLE AND MAST ARM.	$104,500	$94,050
44	07	Santa Clarita	SCAG	INTERSECTION OF SOLEDAD CANYON ROAD AND CROSSGLADE AVENUE	UPGRADE PEDESTRIAN FACILITIES; REMOVE OBSTRUCTIONS.	$161,700	$145,530
45	07	South Gate	SCAG	TWEEDY BLVD BETWEEN ALAMEDA STREET AND LONG BEACH BLVD.	CONSTRUCT RAISED CENTER MEDIANS; MODIFY EXISTING TRAFFIC SIGNAL; INSTALL PED COUNTDOWN SIGNALS AND PROTECTED LEFT TURN PHASING.	$973,500	$876,150
46	07	Whittier	SCAG	INTERSECTION OF LAMBERT ROAD AND SANTA GERTRUDES AVE.	INSTALL LEFT TURN PHASING FOR EAST AND WESTBOUND APPROACHES.	$206,800	$186,120
47	07	Downey	SCAG	20+ INTERSECTIONS WITHIN THE CITY OF DOWNEY	INSTALL PEDESTRIAN COUNTDOWN HEADS	$75,000	$67,500
48	08	Riverside County	SCAG	THE WESTERLY SIDE OF MOUNTAIN VIEW ROAD, APPROX. 0.85 MILES NORTH OF DILLON ROAD.	INSTALL APPROX. 600 LF OF METAL BEAM GUARDRAILS.	$188,650	$121,050
49	08	Riverside County	SCAG	THE INTERSECTION OF BUNDY CANYON RD. AND THE FARM RD.	INSTALL TRAFFIC SIGNALS.	$328,000	$218,700
50	08	Corona	SCAG	INTERSECTION OF RIMPAU AVE. AND CALIFORNIA AVE.	INSTALL TRAFFIC SIGNALS, LEFT-TURN LANES AND PEDESTRIAN CROSSWALKS.	$815,000	$625,500
51	08	Murrieta	SCAG	MURRIETA HOT SPRINGS ROAD BETWEEN ALTA MURRIETA DRIVE AND MARGARITA ROAD.	CONSTRUCT RAISED TRAFFIC MEDIANS.	$560,000	$504,000
52	08	Ontario	SCAG	INTERSECTION OF VINEYARD AVENUE AT FRANCIS STREET.	INSTALL TRAFFIC SIGNALS.	$326,200	$207,310

2006/2007 HIGHWAY SAFETY IMPROVEMENT PROGRAM - WORK TYPE PROJECTS

	District	Agency	MPO	Location of Work	Description of Work	Total Project Cost	Federal Funds
53	08	Ontario	SCAG	INTERSECTION OF GROVE AVENUE AND PRINCETON STREET.	INSTALL TRAFFIC SIGNALS.	$295,500	$265,950
54	08	Palm Springs	SCAG	INTERSECTION OF INDIAN CANYON DRIVE AT TAMARISK ROAD.	INSTALL TRAFFIC SIGNAL AND LIGHTING SYSTEM, INCLUDING EMERGENCY VEHICLE PREEMPTION	$242,000	$217,800
55	08	San Bernardino	SCAG	10 HIGH-ACCIDENT LOCATIONS THROUGHOUT CITY.	INSTALL RADAR SPEED FEEDBACK SIGNS.	$100,000	$90,000
56	08	San Bernardino	SCAG	INTERSECTION OF BASE LINE AND STATE ST.	MODIFY TRAFFIC SIGNALS; CONSTRUCT SOUTH LEG DRIVEWAY APPROACH.	$175,000	$157,500
57	08	San Bernardino	SCAG	INDUSTRIAL PARKWAY BETWEEN PALM AVENUE AND LEXINGTON WAY.	INSTALL TWO-WAY LEFT-TURN LANE; RESTRICT PARKING.	$45,000	$40,500
58	09	Mammoth Lakes	RURAL	LAKEVIEW ROAD BETWEEN LAKEVIEW BLVD AND LAKE MARY RD.	INSTALL SNOWMELT SYSTEM TO PREVENT SNOW AND ICE BUILDUP ON STEEP 15% GRADE.	$671,000	$603,900
59	10	Oakdale	StanCOG	F STREET (SR 108) AT FIRST STREET.	UPGRADE TEMPORARY TRAFFIC SIGNAL WITH PERMANENT SIGNAL.	$220,000	$198,000
60	10	Jackson	RURAL	INTERSECTION OF SR 88 AND COURT STREET.	IMPROVE TRAFFIC CHANNELIZATION AND DECEL/ACCEL LANES FOR TURNING LANES.	$780,800	$702,720
61	10	San Joaquin County	SJCOG	INTERSECTION OF SR 88 AND ALPINE ROAD.	INSTALL TRAFFIC SIGNAL.	$950,000	$180,000
62	10	Modesto	StanCOG	VARIOUS LOCATIONS THROUGHOUT THE CITY OF MODESTO.	UPGRADE SCHOOL ZONE SIGNS WITH DIAMOND GRADE REFLECTIVE LIME GREEN SIGNS.	$55,000	$49,500
63	10	Merced	MCAG	YOSEMITE AVE. BETWEEN "G" STREET AND "M" STREET AT STADIUM LANE.	INSTALL TRAFFIC SIGNAL, SAFETY LIGHTING AND CROSSWALKS.	$230,000	$207,000

2006/2007 HIGHWAY SAFETY IMPROVEMENT PROGRAM - WORK TYPE PROJECTS

	District	Agency	MPO	Location of Work	Description of Work	Total Project Cost	Federal Funds
64	11	San Marcos	SANDAG	TWIN OAKS, SAN MARCOS, AND SAN ELIJO ELEMENTARY SCHOOLS; SAN MARCOS, WOODLAND PARK, AND SAN ELIJO MIDDLE SCHOOLS; MISSION HILLS AND SAN MARCOS HIGH SCHOOLS.	INSTALL SOLAR-POWERED DUAL-FLASHING BEACON LIGHTS AND/OR SPEED RADAR DETECTORS SIGN ASSEMBLIES.	$247,500	$222,750
65	11	Vista	SANDAG	INTERSECTION OF WEST VISTA WAY AND GRAPEVINE RD.	CONSTRUCT CONCRETE POSITIVE PROTECTIVE BARRIER AT NORTH COUNTY TRANSIT DISTRICT (NCTD) BUS STOP.	$495,000	$445,500
66	11	Santee	SANDAG	PROSPECT AVE. UNDERCROSSING AT SR 125.	INSTALL ROADWAY SAFETY LIGHTING.	$53,000	$47,700
67	11	La Mesa	SANDAG	INTERSECTION OF LAKE MURRAY BLVD AND BALTIMORE DR.	UPGRADE TRAFFIC SIGNALS; UPGRADE PEDESTRIAN AND BICYCLE FACILITIES.	$231,000	$207,900
68	11	Imperial County	SCAG	INTERSECTION OF SR 86 AND KEYSTONE RD.	COOPERATIVE PROJECT WITH CALTRANS; INSTALL TRAFFIC SIGNALS; MODIFY VERTICAL PROFILE WITHIN THE INTERSECTION, ADJUST CURB RETURN.	$687,120	$343,560
69	11	Calexico	SCAG	INTERSECTION OF COLE ROAD AND VAN DE GRAAFF AVE.; COLE RD. BETWEEN SR 111 AND VAN DE GRAAFF AVENUE.	INSTALL TRAFFIC SIGNAL; CONSTRUCT CONCRETE MEDIAN.	$500,000	$450,000
70	11	Chula Vista	SANDAG	31 HIGH-PRIORITY INTERSECTIONS CITY-WIDE	UPGRADE TRAFFIC SIGNALS, PAVEMENT MARKINGS AND DELINEATION; MAKE IMPROVEMENTS TO BICYCLE AND PEDESTRIAN FACILITIES CITY-WIDE.	$1,000,000	$900,000

2006/2007 HIGHWAY SAFETY IMPROVEMENT PROGRAM - WORK TYPE PROJECTS

	District	Agency	MPO	Location of Work	Description of Work	Total Project Cost	Federal Funds
71	12	Brea	SCAG	CARBON CANYON RD AT OLINDA PLACE.	INSTALL TRAFFIC SIGNAL; CONSTRUCT SIDEWALK AND MINOR STREET IMPROVEMENTS.	$644,000	$579,600
72	12	Fullerton	SCAG	VARIOUS LOCATIONS WITHIN THE CITY.	INSTALL WARNING SIGNS AT PED/BIKE CROSSINGS; INSTALL "BIKE ROUTE " SIGNS.	$110,800	$99,700
73	12	Irvine	SCAG	INTERSECTION OF CALIFORNIA AVE AND CAMPUS DR.	UPGRADE TRAFFIC SIGNALS; ADD PROTECTIVE LEFT-TURN PHASING.	$108,300	$97,470
74	12	Orange	SCAG	INTERSECTION OF LA VETA AVENUE AND PARKER ST.	ADD PROTECTED LEFT-TURN PHASING	$55,000	$49,500
75	12	Rancho Santa Margarita	SCAG	SANTA MARGARITA PARKWAY BRIDGE.	INSTALL 1,714 LF OF RAILING ON TOP OF CRASH BARRIER; MODIFY RAILING ON OPPOSITE SIDE OF BRIDGE.	$314,600	$283,140
76	12	Santa Ana	SCAG	INTERSECTION OF HARBOR BLVD AND KENT AVE.	INSTALL TRAFFIC SIGNAL.	$363,000	$326,700
77	12	Santa Ana	SCAG	INTERSECTION OF FLOWER ST. AND SANTA ANA BLVD.	MODIFY TRAFFIC SIGNAL; INSTALL LEFT TURN PHASING.	$300,000	$270,000
78	12	Villa Park	SCAG	MESA DR. BETWEEN HENDERSON WAY AND CANYON CREST DR.	UPGRADE GUARDRAIL; WIDEN SHOULDER; INSTALL WARNING SIGNS.	$227,200	$204,480
					Total:	$35,506,380	$25,036,535