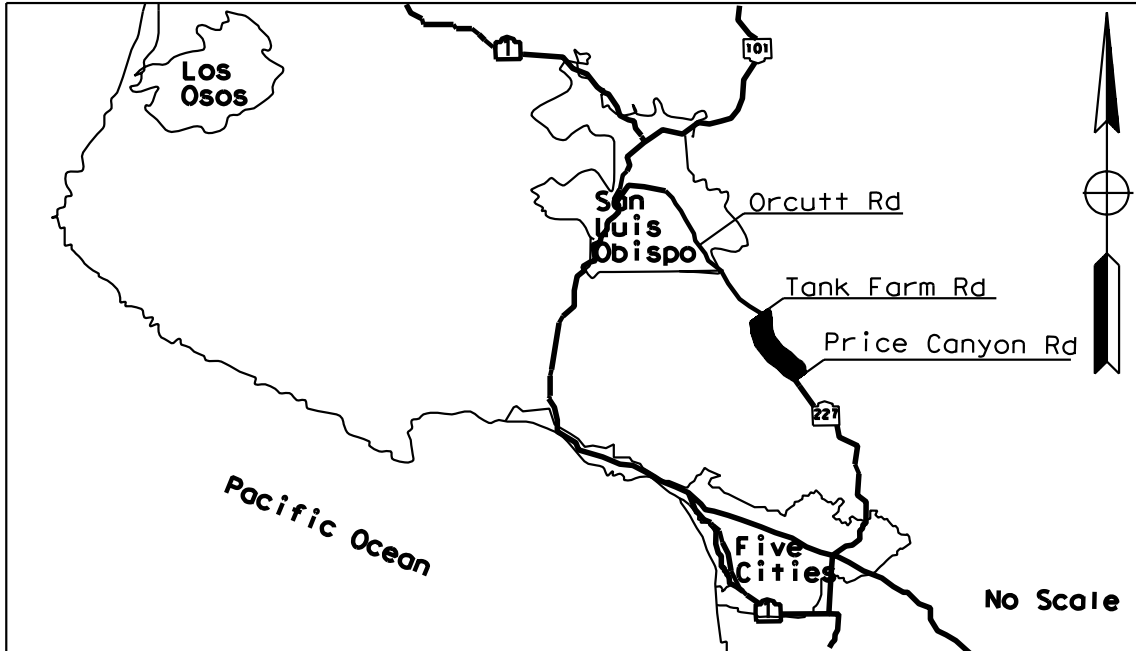


PROJECT STUDY REPORT (Project Development Support)

This document can be used to program only the Engineering and Environmental Support for Project Approval and Environmental Document component. The remaining support and capital

components of the project are preliminary estimates and are not suitable for programming purposes. Either a Supplement PSR or a Project Report will serve as the programming document for the remaining support and capital components of the project.



**On Route 227 in San Luis Obispo County,
From Price Canyon Road at Edna KP R11.46 (PM R7.12)
To Tank Farm Road in San Luis Obispo KP R17.79 (PM R11.06)**

APPROVAL RECOMMENDED:

AMY DONATELLO
PROJECT MANAGER

APPROVED BY:

R. GREGG ALBRIGHT
DISTRICT DIRECTOR – DISTRICT 5

DATE

PROJECT SCOPE & TECHNICAL DATA VALID THROUGH

DATE

COST AND WORK PLAN MUST BE UPDATED PRIOR TO USE FOR PROGRAMMING

This Project Study Report (Project Development Support) has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions and decisions are based.

REGISTERED CIVIL ENGINEER

DATE



1. Introduction

This project on Route 227 between Price Canyon Road near Edna KP R11.5 (PM R7.1) and Tank Farm Road in San Luis Obispo KP R17.8 (PM R11.1), proposes to widen the current two-lane conventional highway to a four-lane conventional highway. Also, the project will provide Class I-III bike lanes where appropriate, standard shoulders and signalization of intersections where warranted. Other safety improvements include provision for signs, guardrails and upgrading drainage by extending culverts and constructing curb and gutters. There are three bridges within the project limits, of which the West Corral de Piedra Creek Bridge and the North Edna Overhead will be widened to accommodate the proposed roadway widening. The East Fork San Luis Obispo Creek Bridge has adequate width. Two alternatives have been considered, the ultimate “Build” alternative and the No Build Alternative. The current preliminary estimated cost ranges from \$28,000,000 to \$35,000,000.

This project is included in the Regional Transportation Plan (RTP) and the San Luis Obispo Council of Governments (SLOCOG) proposes to submit it as a candidate for the 2006 State Transportation Improvement Program (STIP), to be programmed for PA&ED support costs. This Project Initiation Document (PID) is designated as a Project Study Report (Project Development Support). Future support and capital costs would be programmed in subsequent STIP documents.

The project is classified as Category 4A since it will require substantial right of way and increase traffic capacity.

2. Background

The stretch of State Route 227 from Price Canyon Road KP R11.5 (PM R7.1) to South Street KP R20.5 (PM R12.7) is classified as both a Rural Minor Arterial and Urban Principal Arterial. It meets a variety of needs as it winds through a diverse landscape. The road is a two-lane highway as it passes through the rural portions of San Luis Obispo County. Through the city of San Luis Obispo, however, State Route 227 becomes a high-volume, multi-modal, four-lane urban highway. The posted speed is constant within the project limits. The posted speed limit is 85.5 kph (55 mph) from Price Canyon KP R11.46 (PM R7.12) to Tank Farm Road KP R17.80 (PM R11.06), then reduces to 64.4 kph (40 mph) at KP R19.20 (PM R11.93) near Orcutt Road. Land use also varies along this segment of the highway. They include open space, recreation, agriculture, suburban to medium-density residential, business park, services and manufacturing, and an expanding regional airport. State Route 227 links all these together. The California Department of Transportation completed a Route Concept Report (RCR) in 1999 in cooperation with the Regional Transportation Planning Agency, SLOCOG. The Report found that the primary purpose of the route is to serve local and commute traffic within San Luis Obispo and between San Luis Obispo and the Five Cities area. The Five Cities are comprised of Pismo Beach, Shell Beach, Arroyo Grande, Grover Beach and Oceano.

The SLOCOG considers State Route 227 as a regionally significant route. Currently the Level of Service (LOS) is E - indicating congested driving conditions during the peak hour. The report indicates that the “ultimate concept” for the route involves the roadway within the City limits being relinquished to the local jurisdiction, although no timeframe has been set so far. The RCR provides for a four-lane roadway from Price Canyon Road north to the intersection with Higuera Street KP R22.1 (PM R13.7). Four lanes already exist from Tank Farm Road to Higuera Street. By 2015, the roadway is projected to deteriorate to a LOS “E” from Price Canyon Road to Buckley Road KP R15.8 (PM R9.82), and a LOS “F” from Buckley Road to Higuera Street, if no improvements are made.

By the late 1990s, it became apparent that both local and regional land use decisions were affecting this corridor. In late 2000, a public/private task force was formed to address this issue. The group’s aim was to create a comprehensive and strategic plan for corridor improvement, rather than relying on piecemeal or “band-aid” fixes to change conditions along the route. The study limits ran from Price Canyon Road to Orcutt Road KP R19.4 (PM R12.0). The 2002 Route 227 Corridor Study was the result of the task force’s efforts. In completing the study, the task force members acknowledged that some development and expansion would continue along the route because many projects had already been approved or were in the late stages of planning. The study recommended various improvements along the route, such as potential locations for signals, median breaks, landscaped medians and left-turn channelizations, while acknowledging the need for further safety and traffic analysis.

In 2001, the intersection of State Route 227 and Buckley Road was improved by the County and Caltrans. A traffic signal and channelization were added and Buckley Road was slightly realigned with Route 227. Caltrans and County staff had noted that traffic volumes on Route 227 were high and that, without a new signal, local traffic would have difficulties getting onto the highway.

While the principal purpose, within the limits of this project, is to relieve congestion either through enhancing operations or increasing capacity in order to improve traffic flow along the route, the installation of context-sensitive beautification components will be pursued where appropriate. Four distinct segments of Route 227 corridor from Price Canyon to Orcutt have been identified as having specific needs.

From south to north, these segments are:

Segment 1: Price Canyon Road to Los Ranchos Road

Segment 2: Los Ranchos Road to Tank Farm Road

Segment 3: Tank Farm Road to Orcutt Road

Segment 4: Orcutt Road to South Street

The remainder of this topic will focus on Segments 1 and 2 which are within the project limits in order to provide a better understanding of that segment and to provide logical points of project phasing and programming.

3. Need and Purpose

Project Need:

Increasing traffic is causing escalations in congestion and safety concerns, which need to be addressed by this STIP candidate project. These issues are discussed below:

Segment 1, from Price Canyon Road to Los Ranchos Road, is expected to experience future congestion (LOS F in 2035) if capacity is not increased. Congestion will result mainly from the increasing number of commuters diverting from US 101, new employment in the Airport area/Broad Street Corridor, and the shorter route to the new development in Nipomo and South County afforded by the Price Canyon/SR227 connection. During the peak afternoon commute hours, traffic is currently split at 73% southbound and 27% northbound, whereas in 2025 a traffic split of 54% southbound and 46% northbound is projected. The total peak afternoon traffic volume is projected to increase approximately 274% (1194 vehicles currently to 3275 vehicles in 2025).

Segment 2, from Los Ranchos Road to Tank Farm Road, is congested during peak hours and lacks alternative mode choice facilities. Some side street intersections are offset. Locally-approved projects would add traffic directly onto the highway within this segment. The regional airport and industrial park subdivisions are designing their onsite internal circulation elements to facilitate a consolidated signalized ingress/egress onto Route 227. In 2025, 9.2% of southbound traffic is projected to divert from Route 227 onto Los Ranchos Road when local commute traffic separates from regional commuters. The existing diversion is 18.6%. Congestion will worsen as the total afternoon peak hour traffic volume is projected to increase approximately 79.8% (from 1671 vehicles in year 2000 to 3005 vehicles in 2025).

The Level of Service analysis for the PSR (PDS) shows Route 227 will require widening from a two-lane conventional highway to a four-lane conventional highway to accommodate the projected Year 2035 traffic volumes.

The table below shows current and projected volume/capacity ratio and LOS for the 20-year design period.

Table 1: Existing and Future Roadway Segments Level of Service

Segment	Year 2002 2-Lane V/C	Year 2002 2-Lane LOS	Year 2035 2-Lane V/C	Year 2035 2-Lane LOS	Year 2035 4-Lane Density (pc/mi/ln)	Year 2035 4-Lane LOS
SR 227: From Corbett Canyon Road to Price Canyon Road	0.21	C	0.32	D	NA	NA
Price Canyon Road: From SR 227 to Hwy 101	0.26	C	0.40	D	NA	NA
SR 227: From Price Canyon Road to Los Ranchos Road	0.49	E	0.74	F	15.6	B
SR 227: From Los Ranchos Road to Tank Farm Road	0.60	E	0.91	F	18.7	C

Traffic Data

Year	2003	2015	2025	2035
DHV	1,975	2,406	2,839	3,353
AADT	13,450	16,052	18,621	21,620

ADT Growth Rate: 1.8%

The three-year collision rate from October 1, 2000 to September 30, 2003 is

Location	Actual			Average		
	FAT	F+I	Total	FAT	F+I	Total
SLO 227	0.00	0.43	1.00	0.036	0.66	1.42

(Rates are given as “Collisions per million vehicle miles”)

Project Purpose:

The main purpose of the project is to relieve congestion either through operational improvements or increased capacity and accommodate existing and future transportation needs along the Route 227 Transportation Corridor between Price Canyon Road and Tank Farm Road. It will also provide additional benefits such as:

- Enhance safety and improve its role as an evacuation route in the San Luis Obispo Counties/Cities Nuclear Power Plant Emergency Response Plan.
- Improve access to the area’s only regional airport.

4. Alternatives

Concurrence by the Project Development Coordinator for further study of the viable alternatives included in this PSR(PDS) does not constitute approval of any non-standard features identified currently or in the future. Separate documentation and approval will be required as per Chapter 21 of the PDPM.

Two alternatives have been considered, namely: Alternative 1 (Ultimate “Build”), and Alternative 2 (No-build). There were no Minimum Build options identified by the project development team, that would satisfy the project’s need and purpose.

Alternative 1: Ultimate Build Alternative

Alternative 1 proposes to widen Route 227 from two lanes to four lanes from Price Canyon Road to Tank Farm Road, but will be divided into two segments that will be prioritized for funding. This alternative will provide a two-way left-turn lane or left-turn channelization where appropriate, widen shoulders and construct Class II bike lanes. In addition, this alternative would require the widening of two existing bridges - the West Corral de Piedra Creek Bridge (Br No 49-204) and the North Edna Overhead (Br No 49-220). There are no non-standard features proposed by this project.

The widening at the North Edna Overhead will involve coordination with the Union Pacific Railroad. There are also environmental constraints that need to be addressed including one stream with a well-developed wetland, West Corral de Piedras Creek and cultural resources associated with the De Anza trail and the townsite of Edna. This portion of State Route 227 is a gateway corridor and there is the need to visually transition by unifying the rural and urban characters of the corridor. Community involvement is anticipated, and context sensitive treatments such as the maintenance of viewsheds, landscaping and gateways will be incorporated as needed. Traffic signals will be provided, but the exact locations have not yet been finalized. ADA requirements will be implemented in this project.

There are signalizations and other improvements being done by others outside of this project. For example, the Airport is currently working on a plan to signalize the intersection of State Route 227 and Aero Road, and the City of San Luis Obispo is working on a plan to connect Prado Road, the exact location yet to be determined.

The SR 227 Task Force has recommended a landscaped median between Tank Farm Road and Aero Drive. An in-depth traffic operations analysis will be required to determine the location of two-way left-turn lanes or left-turn channelization, and median openings. Also, the SR 227 Task Force has recommended a gateway and beautification theme to visually unify and urbanize the corridor from just south of the airport to the city's highly urbanized area to the north.

At this early Project Development stage, the Materials Branch has determined that a deflection study to determine the asphalt concrete overlay thickness of the existing pavement is not necessary. However, a thickness of 135 mm has been assumed for estimation purposes. The District will also consider the use of Rubberized Asphalt Concrete (RAC) as the preferred rehabilitation strategy during the project report stage.

The estimated cost for this alternative varies from \$28M (\$19,290,000 Roadway, \$2,710,000 Structures, and \$5,018,000 Right of Way/Utilities) to \$35M, however this alternative can also be done by prioritizing funding and executing in two phases. Phase 1 would be from Los Ranchos Road to Tank Farm Road, and Phase 2 would be from Price Canyon Road to Los Ranchos Road. Operationally, this widening will improve the Level of Service to B.

Phase 1

From Los Ranchos Road to Tank Farm Road at a cost varying from \$13M (\$9,630,000 Roadway, \$0.0 Structures, and \$2,509,000 Right of Way/Utilities) to \$18M.

Phase 2

From Price Canyon Road to Los Ranchos Road at a cost varying from \$15M (\$9,670,000 Roadway, \$2,760,000 Structures, and \$2,509,000 Right of Way/Utilities) to \$20M.

Alternative 2: No-Build Alternative

With the No-build alternative, traffic operations on the route segment would continue to deteriorate. The existing LOS is "E" on Route 227, from Price Canyon Road to Tank Farm Road, and the projected LOS for Year 2035 would be "F".

5. System and Regional Planning

The Route Concept Report/Transportation Concept Report (RCR/TCR) was prepared for Route 227 in San Luis Obispo County in July 1999. The TCR is the foundation of the system planning process. It analyzes a route from the beginning to the end of the established District boundaries and gives a vision of how the entire route could perform, and what the physical facility might look like in the next twenty years. In the TCR, the current corridor study lies within Analysis Segments 3 (Tank Farm Road to Orcutt

Road) and 4 (Orcutt Road to South Street). The TCR identifies the traffic concept for Segments 3 and 4 as LOS C and LOS B/C respectively. These LOS values are for the entire mainline segment, not particular intersections.

Description of Route 227

Route 227 provides the only ground access to the San Luis Obispo County Airport from the north and south. It serves local and commute traffic between the City of San Luis Obispo, Edna Valley, and the Five Cities area. Major traffic generators along Route 227 include businesses in southern City of San Luis Obispo and City of Arroyo Grande, Price Canyon Road, Oak Park Road, and Corbett Canyon Road. Portions of Route 227 parallel both Route 101 and Orcutt Road. The portion of the route through the Village of Arroyo Grande serves seasonal recreational traffic en route to Lopez Lake.

Functionally, the two-lane portion of Route 227 from Route 101 to Printz Road in Arroyo Grande is classified as an Urban Other Principal Arterial. From Printz to Buckley Road, Route 227 is classified as a Rural Minor Arterial, and the two and four-lane portion from Buckley Road to the Madonna Road Interchange in San Luis Obispo is classified as an Urban Other Principal Arterial. The route is eligible for Scenic Highway designation through portions of Arroyo Grande and San Luis Obispo.

SR 227 is not on the Interregional Road System (IRRS). It is identified as an Evacuation Route in the San Luis Obispo Counties/Cities Nuclear Power Plant Emergency Response Plan (August 1994). Access to Route 227 is presently unrestricted since it is classified as a Conventional Highway.

Route 227 is not part of the National Highway System (NHS). Also, Route 227 is not classified as a SHELL (State Highway Extra Legal Load) or STAA (Surface Transportation Assistance Act) Route. Planning and funding activities for capacity improvements will be primarily the responsibility of SLOCOG.

The 2002 Route 227 Corridor Study, finalized by the Route 227 Task Force, serves as a consensus on future vision for the corridor. SLOCOG and the County of San Luis Obispo have been part of the task force and thus the project meets the TCR recommendation that requires consultation with SLOCOG and the County regarding potential improvements. Since Caltrans has also been part of the SR 277 task force, the recommendations of the Long Range Operations Plan have been considered.

6. Environmental Determination and Environmental Issues

The anticipated environmental document for the proposed project is a Negative Declaration (ND)/ Finding of No Significant Impact (FONSI). The Federal Highways Administration and the California Department of Transportation would act as lead agencies in the preparation of a joint CEQA/NEPA (California

Environmental Quality Act/National Environmental Policy Act) environmental document. The final environmental document is projected to occur within 36 months from the start of environmental studies.

The environmental issues are discussed in the Preliminary Environmental Analysis Report (Attachment E), and a brief summary is hereby provided.

Community Effects Community involvement would be encouraged to receive feedback on visual design preferences.

Visual Effects This project has the potential to impact visual resources, hence a Scenic Resource Evaluation and a Visual Impact Assessment would be required.

Water Quality and Erosion The project is located within the San Luis Obispo Creek and Pismo Creek watersheds in the Estero Bay Hydrologic Unit. The Central Coast Regional Water Quality Control Board will enforce water quality requirement for water bodies that intersect the project, including San Luis Obispo and West Corral De Piedra Creeks. Since more than one acre of soil disturbance would occur as part of the proposed project, a Notice of Construction shall be submitted to the Regional Water Quality Control Board at least 30 days prior to the start of construction. A Storm Water Pollution Prevention Plan (SWPPP) would also be required from the Contractor. The SWPPP would describe the Contractor's plans for preventing untreated storm water runoff from leaving the construction site, and would incorporate Best Management Practices for preventing temporary and long-term erosion in the project area.

Air and Noise. According to 40 CFR 93.127, this project would not be exempt from regional emissions analysis. A Hot Spot Analysis Analysis for carbon monoxide would not be required on this project because the project is located in an attainment area and does not propose any new intersections. However, a qualitative analysis is necessary in order to determine the project's potential to increase long-term and short-term PM10 emissions since according to State standards, the air basin is categorized as non-attainment.

According to Caltrans Traffic Noise Protocol and NEPA, this project qualifies as a Type 1 project, hence a traffic noise analysis is needed. The project would require study of several receptors and surrounding land uses to determine the potential impacts from traffic noise. There are two locations currently identified requiring requiring further analysis: At PM 8.0 there is the potential for noise abatement measures for an elementary school and several nearby homes. And PM 11.0 near Buckley Road, includes a community airfield and a California Department of Forestry Fire Station where Federal Aviation Administration regulations may apply.

Cultural Resources There is one known Prehistoric Archaeological Resource and approximately 20 Architectural Resources that would require evaluation within the Area

of Potential Effect. A Phase I and an Historic Architectural Survey Report would be prepared and presented to the State Historic Preservation Officer and the Federal Highway Administration for concurrence.

Native American Coordination The Native American Community would need to be consulted during the life of the project.

Hazardous Waste/Materials There would be the potential for encountering hazardous waste/material within the project limits, including several open and closed leaking underground storage tanks. Further investigation would be required to determine the status. A visual inspection of the West Corral De Piedra Bridge showed signs of possible asbestos-containing material on the bridge railing shims and would require further investigation. Also, heavy metal and hydrocarbon studies would be required adjacent to the existing railroad under the North Edna Overhead. An Aerially Deposited Lead study is required and a Naturally occurring Asbestos (NOA) study is highly recommended.

Biological Resources There are 8 drainageways within the project limits that have the potential to contain wildlife habitat and would require study. Also, East Canyon de Piedra Creek through a bridge/box culvert would need to be considered if the project starts 450 meters south of the Price Canyon Road intersection. Surveys for plants, frogs, steelhead, turtles, and Tiger Salamander would be required. Formal Consultation with the United States Fish and Wildlife Service would be anticipated.

Mitigation Estimated mitigation cost for Biological Resources is up to 3.64 hectares (9.0 acres), and \$400,000. Estimated mitigation cost for Landscape Architecture is up to \$1,000,000.

Permits Permits from the State Department of Fish and Game (1601), U. S. Army Corps of Engineers 404 Nationwide Permit, and the Regional Water Quality Control Board (401) would be required.

7. Right of Way

The right of way impacts have been evaluated for Alternative #1. The escalated Right of Way cost estimate totals \$5.1 Million (including utilities) with 2.8 hectares of parcels affected. The estimate includes \$ 25,000 for pos-locs, money for adjusting utility lid covers to grade, and relocating some utility poles. It may be necessary to acquire easements for the utility companies. The easements will only be known once the utilities are verified and plotted on layout plans. A summary of the right of way issues is in the Right of Way Data Sheet (Attachment D).

8. Funding/Scheduling

This project is proposed for programming through PA&ED as part of the 2006 State Transportation Improvement Program (STIP). The funding will most likely be Regional Improvement Program (RIP) dollars from the RTIP.

Capital Outlay Support Estimate for PA&ED

Fiscal Year	STIP PY's / \$'s		Other Funding Sources PY's / \$'s	
	PY's	\$'s	PY's	\$'s
06/07	1.6	234		
07/08	2.0	295		
08/09	2.0	299		
09/10	1.7	250		
Future	0.6	89		
Total Support Cost	7.9	1,167		

- Note:** (1) All costs X \$1,000. Construction Capital are escalated at 3.0 % per year and Support Costs are escalated at 2.0 % per year. The Right of Way Capital Costs are escalated at 5% per year.
- (2) Support categories are the same as those identified by SB 45

Capital Outlay Estimate

	Range for Total Cost	STIP Funds	Fund Source "A"
Alternative 1	\$28M-\$35M		
Alternative 2 (No-build)	\$0		

The level of detail available to develop these capital cost estimates is only accurate to within the above ranges and are useful for long-range planning purposes only. The capital costs should not be used to program or commit capital funds. The Project Report will serve as the appropriate document from which the remaining support and capital components of the project will be programmed.

The tentative milestone schedule is listed below.

Milestone	Target date
------------------	--------------------

Approved PSR/PDS	Nov 1, 2005
Begin Project Report	July 2006
Approved PA&ED	July 2010
District PS&E	July 2014
Ready To List	December 2014
Approved Construction Contract	March 2015
Construction Completion	July 2018

Only the “PA&ED” milestone is to be used for programming commitments. All other milestones are used to indicate relative time frames for planning purposes.

9. Programming Recommendation

It is recommended that the PA&ED support components be programmed in the 2006 STIP. The project alternative identified in this project is to be studied further in the PA&ED phase without precluding any revisions or other alternatives that may be added as more information becomes available.

A Risk Management Plan (RMP) was prepared to assess, respond and monitor identified project risks that may occur throughout the life of the project, (See Attachment I). The RMP is designed as a tool to help the Project Management Team and Project Sponsor in their decisions regarding project alternatives and objectives, and encourages the project team to take appropriate measures to minimize adverse impacts to the project scope, schedule or cost. However, the Risk Management Plan cannot identify all risks in advance of occurrence for a project where some risks are unknown.

10. District Contact

Amy Donatello	Project Manager	(805)549-3398	CALNET 629-3398
Arthur Ramirez	Design Manager	(559)243-3527	CALNET 425-3527
Joseph Quarshie	Project Engineer	(559)243-3531	CALNET 425-3531
Paul McClintic	Traffic Operations	(805)549-3473	CALNET 629-3473
Larry Newland	Environmental	(805)542-4603	CALNET 629-4603
Tom Fisher	Hydraulics	(559)243-3498	CALNET 425-3498
Rich Krumholz	Transp. Planning	(805)549-3161	CALNET 629-3161

11. List of Attachments

Attachment A.....Title Sheet

Attachment B.....Typical Cross Section (X1), (X2), (X3),
(X4 - West Corral de Piedra Creek Bridge),
(X5 North Edna Overhead)

Attachment C..... 3-Page Cost Estimate

Attachment D..... Right of Way Data Sheet

Attachment E..... Preliminary Environmental Analysis Report (PEAR)

Attachment F.....PDS Design Scoping Checklist

Attachment G.....Traffic Forecasting, Analysis, and Operations Scoping
Checklist

Attachment H.....Storm Water Data Report

Attachment I.....Risk Management Plan