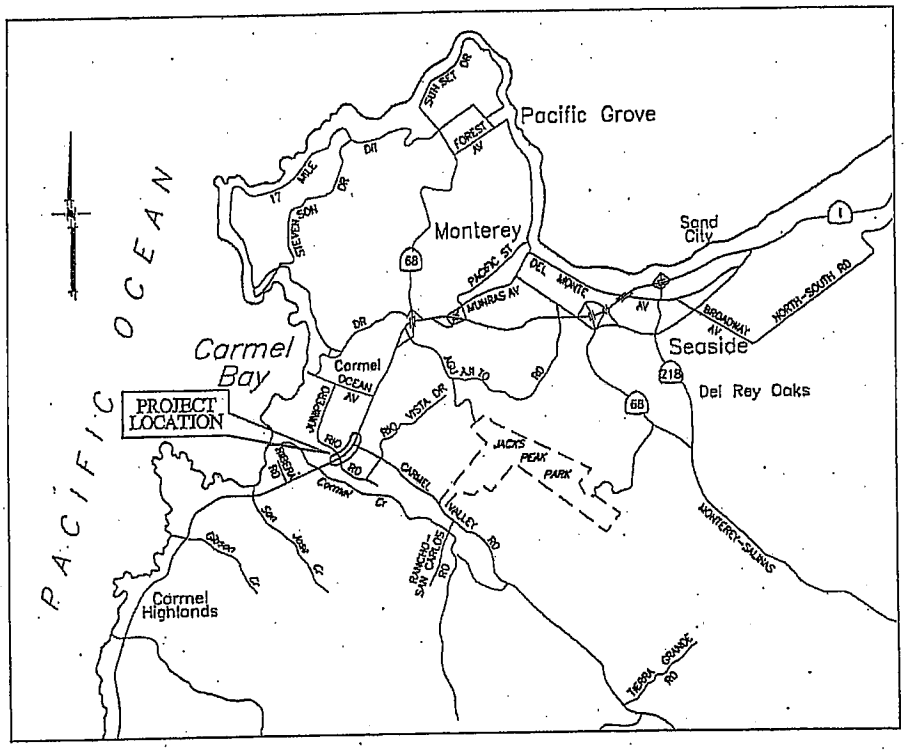
05 – Mon - 1 - KP 116.3 / 117.2
(PM 72.3 / 72.9)
January 2005

PROJECT STUDY REPORT



On Route 1 near Carmel
Between the Carmel River Bridge
And Carmel Valley Road

APPROVAL RECOMMENDED: _____
DAVID RASMUSSEN, ~~PROJECT MANAGER~~

APPROVED: _____ 3/7/05
R. GREGG ALBRIGHT, DISTRICT 5 DIRECTOR *DATE*

CONCURRED: _____
J. MIKE LEONARDO, DISTRICT 6 DIRECTOR / CENTRAL REGION

WOOD RODGERS
ENGINEERING • PLANNING • MAPPING • SURVEYING

05 - Mon - 1 - KP 116.3/117.2 (PM 72.3/72.9)

This Project Study Report has been prepared under the direction of the following Registered Engineer. The registered Civil Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions, and decisions are based.

REGISTERED CIVIL ENGINEER

1/24/2005
DATE

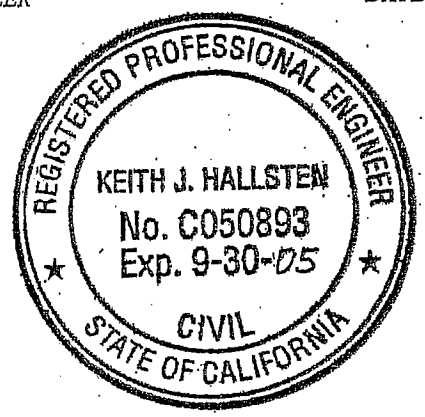


Table of Contents

PROJECT STUDY REPORT

05 - Mon - 1 KP 116.3/117.2
(PM 72.3/72.9)
EA 05-0L570K
STIP
Rio Road to Carmel Valley Road

Introduction

This study identifies improvements to State Route 1 (SR-1) near Carmel from approximately 190 meters south of the Rio Road intersection through the Carmel Valley Road intersection. These improvements are expected to address operational issues on SR-1 through the year 2030. This highway currently operates under congested conditions during commute periods and on weekends, due to heavy tourist traffic. State Route 1 operates at capacity for much of every day. A single "build" alternative has been identified for SR-1 in the study area. This alternative would construct a truck climbing lane on northbound SR-1 from Rio Road to Carmel Valley Road, and add turn lanes at the Rio Road intersection. These additions would improve the operation of the existing signalized intersection with Rio Road. The proposed truck climbing lane would feed truck traffic to an existing truck climbing lane on northbound SR-1 to the north of Carmel Valley Road. The construction cost for the "build" alternative is estimated to be $3.50 million. The right of way cost is estimated to be $39 thousand. No new State right of way will be required, but widening of Rio Road for turn lanes will require some additional County right of way. The improvements are to be funded with State Transportation Improvement Program funding. This study was initiated by the Transportation Agency for Monterey County (TAMC).

Recommendations

It is recommended that $3.30 million in STIP funding be programmed for this project to construct operational improvements on State Route 1 from the approaches to the Rio Road intersection to Carmel Valley Road intersection as described in the Build Alternative section. The shortfall between the STIP funding and the total estimated project budget of $4.394 million is to be provided by the Transportation Agency for Monterey County from local funds.

Background

The study section of SR-1 transitions from low-volume two-lane conventional highway south of the Carmel River to heavily-traveled 3-lane conventional highway north of the Carmel Valley Road intersection. The design speed for SR-1 within the study area is 72 kph (45 mph). The design speed for Rio Road near SR-1 is 56 kph (35 mph). Previous traffic studies have shown that through

traffic often bypasses this section of SR-1 via the local streets of Carmel (see Exhibit A for a map of the local street system adjacent to the study section of SR-1). As this segment of SR-1 proceeds northward from the Rio Road intersection, it is characterized by an uphill grade averaging 6%. North of Ocean Avenue the existing SR-1 is a four-lane undivided conventional highway.

The study section of SR-1 is a designated bicycle route. Existing paved shoulders are of nonstandard width (1.5m) at some locations. Pedestrian traffic is also permitted on the shoulders of SR-1 in the study area.

A Project Study Report (Project Development Support) [PSR(PDS)] for the segment of SR-1 between the Carmel River Bridge and the State Route 68 interchange was approved in 2001. This PSR is being prepared to allow programming of a sub-set of the improvements identified in the 2001 PSR(PDS). The "build" alternative shown in this PSR is nearly identical to both Alternative 1 and Alternative 3 of the 2001 PSR(PDS) within the project area. Alternative 2 identified a grade-separated interchange at the Carmel Valley Road intersection with SR-1, which would not be precluded by the construction of the identified "build" alternative, but is not considered to be necessary within the planning horizon.

This project is sponsored by the Transportation Agency for Monterey County, and is supported by its constituent agencies, including Monterey County and the City of Carmel-by-the-Sea. There appears to be general agreement that operational improvements to the highway are necessary, but various community organizations have expressed different views regarding whether improvements that would substantially increase capacity should be made. Although the area surrounding SR-1 is developed for residential, educational and commercial uses, the visual character of the area is dominated by large trees and ornamental plantings. Since this area is a destination for tourists who seek this visual character, these features are important to the appeal and economy of the area. Therefore, there is likely to be intense local review of project features which would impact existing large trees or otherwise affect the visual character of the highway corridor.

The standard for the operation of arterial roadways, as defined in the Monterey County General Plan is Level of Service (LOS) "C". However, in recognition of likely public opposition to the impacts related to the substantial improvements that would be required to achieve LOS "C" on the study section of SR-1, the Project Development Team and the TAMC Board has selected arterial LOS "D" in design year 2030 as the standard for screening project alternatives. An arterial LOS is based on the free-flow speed of traffic between intersections as well as the approach delay at intersections, while LOS for a signalized intersection is based on average control delay on all of the approaches to the intersection. The Regional Transportation Plan and Congestion Management Plan for Monterey County are consistent with the General Plan.

Need and Purpose

The purpose for constructing the proposed operational improvements to State Route 1 between Rio Road and Carmel Valley Road is to improve level of service on State Route 1 from "E" or "F" to "D" during peak hours, and to maintain both intersection operations and roadway segment operations at LOS "D" through year 2030. These improvements attempt to balance the community's desire to maintain SR-1 as a conventional undivided highway with a generally rural character with the desire for efficient transportation that serves the needs of local and regional commuter traffic as well as tourist traffic. Features to facilitate bicycle and pedestrian traffic, improve emergency vehicle response time, and accommodate the provision of public transportation services are to be incorporated as appropriate.

Existing and Forecast Traffic Operations without Improvements

Existing traffic operations during peak hours on the study section of State Route 1 are characterized by congestion. Two types of "Level of Service" (LOS) are used to describe the operational characteristics in this PSR. Mainline or arterial LOS includes speed between intersections as well as the approach delay at signalized intersections. It is calculated by direction for each segment along an arterial. Intersection LOS reports average delay, which includes all approaches at that intersection.

The SR-1 segment in the study area now operates at a deficient arterial LOS of "E" in the northbound direction in the weekday morning and evening peak hours, and at LOS "F" on weekend peak hours. In the southbound direction the segment of SR-1 between Carmel Valley Road and Rio Road operates at a minimally-acceptable arterial LOS "D" in peak hours (See Table 1). Without roadway improvements, conditions forecast for the year 2030 will decline to LOS "F" in the northbound direction during all peak hours, and LOS "E" in the southbound direction during the weekend peak hours (See Table 2).

Table 1
SR-1 Arterial Level of Service during Peak Hours
Existing Roadway with Existing (2003) Traffic

SR-1 Segment & Direction	Weekday AM	Weekday PM	Weekend PM
South of Rio Road, Northbound	**E**	**E**	**F**
Rio Rd to Carmel Valley Rd, NB	**E**	**E**	**E**
North of Carmel Valley Rd, SB	B	B	B
Rio Rd to Carmel Valley Rd, SB	D	D	D

Note: LOS shown in bold indicates deficient operations.

Table 2
SR-1 Arterial Level of Service during Peak Hours
Existing Roadway with Year 2030 Forecast Traffic

SR-1 Segment & Direction	Weekday AM	Weekday PM	Weekend PM
S. of Rio Road, Northbound	**E**	**F**	**F**
Rio Rd to Carmel Valley Rd, NB	**F**	**F**	**F**
N. of Carmel Valley Rd, SB	B	B	B
Rio Rd to Carmel Valley Rd, SB	D	D	**E**

Note: LOS shown in bold indicates deficient operations.

During weekend peak hours the Rio Road intersection currently operates overall at LOS "D". The Carmel Valley Road intersection currently operates at an overall LOS "C", but the westbound-to-northbound movement operates at LOS "E". See Table 3 for existing intersection operational conditions. Traffic volumes and turning movements are shown in Exhibit E.

Table 3 - Existing (2003) Intersection LOS Summary

Signalized Intersection	Lane Configuration	Movement	Weekday AM Peak Hr	Weekday PM Peak Hr	Weekend Peak Hour
Carmel Valley Road / SR-1	NB 1-T, 1-R SB 2-L, 1-T WB 2-R	**Overall I/S**	**B**	**C**	**C**
		NB - T	D	D	D
		SB - L	B	C	C
		WB – R	B	D	E
Rio Road / SR-1	NB 1-L, 1-T, 1-R SB 2-L, 1-T/R EB 1-L, 1-T, 1-T/R WB 1-L, 1-T, 1-R	**Overall I/S**	**C**	**C**	**D**
		NB - T	C	C	D
		SB – T	C	C	D

Without improvements, increasing traffic volumes will deteriorate operating conditions. By the year 2030 the Carmel Valley Road intersection would have a through movement operating at LOS "F" (breakdown) in both morning and evening peak hours on weekdays (See Table 4). Forecast traffic volumes are shown in Exhibit E.

Without improvements, both of the intersections would operate at a deficient overall LOS "E", with a northbound movement LOS "E" or worse on weekends.

Table 4 - Forecast 2030 "No-build" Intersection LOS Summary

Signalized Intersection	Lane Configuration	Movement	Weekday AM Peak Hr	Weekday PM Peak Hr	Weekend Peak Hour
Carmel Valley Road / SR-1	NB 1-T, 1-R SB 2-L, 1-T WB 2-R	**Overall I/S**	**D**	**E**	**E**
		NB - T	F	F	F
		SB - L	C	C	C
		WB – R	F	F	F
Rio Road / SR-1	NB 1-L, 1-T, 1-R SB 2-L, 1-T/R EB 1-L, 1-T, 1-T/R WB 1-L, 1-T, 1-R	**Overall I/S**	**C**	**D**	**E**
		NB - T	D	D	E
		SB – T	C	C	E

Accident Data Analysis

The Traffic Accident Surveillance and Analysis (TASAS) Table B accident summaries for the SR 1 study segment were obtained from Caltrans District 5, for the three-year period extending from May 31, 2000 through June 1, 2003, and are summarized in Table 5A and 5B.

TABLE 5A
TASAS TABLE B ACCIDENT DATA (05/31/2000 THROUGH 06/01/2003)
STATE ROUTE 1, MONTEREY COUNTY, KP 72.3 TO 73.3

Number of Accidents / Significance							
TOTAL	Fatal (F)	Injury (I)	F+I	Multi-Veh.	Wet	Dark	Persons K / I
78	1	19	20	72	8	11	1 / 28

Note: Persons K/I = Persons Killed/Injured

TABLE 5B

Accident Rate (Accidents / Million Vehicle Kilometers)					
Actual			Average		
Fatal	F+I	Total	Fatal	F+I	Total
0.047	0.92	**3.59**	0.031	1.30	3.06

Note: . Numbers shown in bold indicate actual rates exceeding corresponding Statewide average rates.

As shown in Table 5B, the actual accident rates for Fatal and Total accidents in the study section of SR-1 are above the statewide average rates for similar facilities with similar traffic volumes.

The majority of accidents occurred in clear or cloudy weather in daylight conditions (86%) on a dry roadway (90%). Over 80% of all accidents occurred between 11 am and 6 pm, and more accidents occurred on weekdays than weekend days. Almost 65% of all accidents occurred in the northbound lane. About 70% of all accident were rear-end collisions and about 12% were sideswipes. These patterns are often associated with congested conditions, such as occur in the northbound direction on SR 1.

Alternatives

The alternatives identified for this study include the "No Build" Alternative as well as the "build" project alternative.

The project is not expected to create controversy among local agencies and the public, although some operational improvements previously proposed near this section of SR-1 have created controversy and incited litigation. Environmental issues (see the Environmental Clearance section of this report) are likely to be the subject of public interest.

No-build

The "No Build" alternative assumes that no improvements that have not already been completed will be constructed.

Even with recent improvements at and north of the Carmel Valley Road intersection, the existing deficient operational conditions are forecast to deteriorate further as traffic volumes increase (see Table 2 for year 2030 forecast LOS and Exhibit E for forecast year 2030 traffic volumes). Since existing traffic operations are already worse than the minimally-acceptable LOS "D", the "no-build" alternative fails to address current and future operational issues.

Build Alternative

The "Build" alternative is shown in Exhibit B. It would construct a northbound truck climbing lane on SR-1 from Rio Road to Carmel Valley Road. Outside shoulders would be widened to 2.4 m in accordance with conventional highway standards. SR-1 would continue serve as a bike route. The Department of Parks and Recreation has programmed a project to construct a bicycle trail in Hatton Canyon north of Carmel Valley Road, but there is no programmed project that would construct bike trail parallel to the project section of SR-1. All of the section of SR-1 that is currently classified as conventional highway would remain conventional highway after the construction of the proposed improvements.

At the Rio Road intersection, a second westbound right-turn lane to northbound SR-1 and a dedicated right-turn lane on southbound SR-1 to westbound Rio Road would be constructed. The northbound turn lanes approaching the intersection would be lengthened, and the dedicated right turn lane would be converted into a shared through/right lane. At the Carmel Valley Road intersection the northbound truck climbing lane would continue through the intersection as a shared through/right-turn lane. All through and turn lanes would be 3.6 meters wide at both intersections.

As shown in Table 6, all intersections of the Build alternative would operate at the minimally-acceptable LOS D or better in peak hour through year 2030. Forecast traffic volumes are shown in Exhibit E.

Table 6 - Forecast 2030 Intersection LOS Summary, Build Alternative

Signalized Intersection	Lane Configuration	Movement	Weekday AM Peak Hr	Weekday PM Peak Hr	Weekend - Peak Hour
Carmel Valley Rd / SR-1	NB 1-T, 1-T/R SB 2-L, 1-T WB 2-R	**Overall I/S**	**C**	**C**	**C**
		NB - T	D	D	C
		SB - L	B	B	C
		WB - R	C	C	D
Rio Road / SR-1	NB 1-L, 1-T, 1-T/R SB 2-L, 1-T, 1-R EB 1-L, 1-T, 1-T/R WB 1-L, 1-T, 2-R	**Overall I/S**	**C**	**C**	**D**
		NB - T	C	D	D
		SB - T	C	C	D

As shown in Table 7, the improved highway segments would operate in year 2030 at the target LOS D or better during peak hours, except the segment between Rio Road and Carmel Valley Road would drop to LOS "E" in the northbound direction during weekday peak hours, and in the southbound direction in weekend peak hour. Although this alternative does not meet the goal of LOS "D", the northbound LOS is improved over existing conditions between the Carmel River and Rio Road, and the existing LOS is maintained or improved elsewhere (compare to Table 1).

Table 7
SR-1 Arterial Level of Service during Peak Hours
Build Alternative with Year 2030 Forecast Traffic

SR-1 Segment & Direction	Weekday AM	Weekday PM	Weekend PM
S. of Rio Road, Northbound	D	D	D
Rio Rd to Carmel Valley Rd, NB	**E**	**E**	D
N. of Carmel Valley Rd, SB	B	B	B
Carmel Valley Rd to Rio Rd, SB	D	D	**E**

Note: . LOS shown in bold indicates deficient operations.

No exceptions to Highway Design Standards have been identified for the Build Alternative, but a more detailed analysis may reveal design exceptions resulting from roadway design modifications to minimize impacts to existing trees and visual resources. The proposed project should be assigned to a project development Category 4B, since no location adoption will be required for the existing conventional highway, no substantial new right of way is required, and the project will not substantially increase traffic capacity.

The capital cost of the Build Alternative is estimated to be $3.54 million (see Exhibit C). This includes $3.50 million in construction and mitigation costs and $39 thousand in right-of-way costs. The right-of-way impacts of the Build Alternative are limited to the acquisition of a total of 53 m^2 (568 sq. ft.) of right of way for Monterey County from a commercial parcel. There are utility

facilities in the project area, but the change in grade near the underground utility locations is not great, so no relocation of underground utilities is anticipated. Five utility poles along the east side of SR-1 will require relocation, but these are assumed to be in place under an encroachment permit, so relocation would be at the utility's cost.

Construction of the Build Alternative could be expected to immediately improve deficient peak-hour operations, and to maintain operational conditions better than currently existing on the study section of State Route 1 as traffic increases to year 2030.

System Planning

This section considers both the route designations for State Route 1 (SR-1) within the project limits as well as consistency with regional and system planning documents.

Route Designations. Within the project limits, SR-1 has the following federal, state, and goods movement designations:

In the federal functional classification system, SR-1 is an urbanized principal arterial and is therefore on the National Highway System (NHS). Facilities included on the NHS are considered essential for interstate and regional commerce, travel, and national defense.

In the state classification system, SR-1 designations also reflect the route's importance to interregional people and goods movement. SR-1 is on the Freeway and Expressway System to the north of the north limit of Carmel, is a High Emphasis Route on the Caltrans Interregional Road System, and is officially designated as a Scenic Highway. Conventional highway to the south of Carpenter Street would be compatible with the legislative intent.

To the south of Rio Road (KP 116.8), SR-1 carries a truck route classification of Advisory < 30, meaning trucks with a kingpin-to-rear axle length of 30 feet or more are not advised to use the route. From KP 116.8 to 121.0, SR-1 is a Terminal Access route that can accommodate larger trucks as defined in the federal Surface Transportation Assistance Act. Therefore, a truck climbing lane north of Rio Road would be appropriate.

Consistency with Regional and System Planning Documents. The Transportation Agency of Monterey County updated its Regional Transportation Plan (RTP) in April 2004. The improvements considered in this Project Study Report (PSR) are consistent with projects contained in that RTP. Further, the projects are consistent with the Association of Monterey Bay Area Government's Metropolitan Transportation Plan 2002 Update.

In addition, the project is consistent with the route concept LOS proposed in Caltrans' existing Route Concept Report (RCR) for SR-1. However, this RCR was prepared in 1990 and proposed a four-lane bypass freeway in Hatton Canyon to achieve the concept LOS. In the summer of 2001 the California legislature determined that the Hatton Canyon Freeway was non-viable.

Therefore, Caltrans will now consider other strategies to meet the concept LOS when it prepares an updated Transportation Concept Report for SR-1 in the coming year. At this time, it appears that viable improvements will be on the existing alignment, which is consistent with the project proposed in this PSR. There are no plans for any significant widening of State Route 1 to the south of the Carmel River, so the study section will remain a transition section between the two-lane conventional highway to the south and the existing expressway and freeway to the north.

Monterey County has done preliminary planning for an extension of Rio Road to the east, to provide a parallel reliever for Carmel Valley Road. Since this extension is not yet an adopted project, it was not included in the traffic modeling for this SR-1 project. If the Rio Road extension were constructed it would be expected to have a minor impact on the traffic volumes between Rio Road and Carmel Valley Road.

Hazardous Material/Waste

An Initial Site Assessment Checklist for Hazardous Materials has been prepared for the project area. It is included as Appendix B to the Preliminary Environmental Analysis Report, Exhibit D. It notes that leaks from product piping associated with the underground storage tank at the Chevron gasoline station on Rio Road just east of SR-1 were identified in 1989 and 1998, and have contaminated groundwater in the area. However, no right of way acquisition for the State is required for the project, and only minor right of way acquisition for Monterey County will be needed for the widening of Rio Road, so it appears unlikely to have a significant affect on the project. Soil samples should be analyzed for hydrocarbon contamination prior to project construction. Since the existing roadway corridor has been in use for many decades, the soil adjacent to the highway may have been contaminated by aerially deposited lead (ADL) from vehicle exhaust. However, testing of the soils adjacent to for the truck climbing lane on SR-1 just north of Carmel Valley Road found ADL below regulatory levels. Therefore, ADL is not expected to be a significant environmental concern, and no sampling is required.

Transportation Management Plan

Due to the high traffic volumes, limited availability of viable alternate routes, and restrictive site conditions, a Transportation Management Plan must be developed and implemented in order to maintain acceptable levels of service and safety during all work activities for this project. Since the project is primarily outside widening of the existing highway, it is anticipated that most of the project construction can be accomplished behind K-rail without lane closures. However, if any lane closures are required they must be performed at night, with one lane in each direction being maintained during daytime hours.

Possible TMP strategies and elements that would help mitigate traffic impacts for this project are; media releases, telephone hotline, public meetings, a web

site, changeable message signs, off-peak work, and rideshare marketing. The preliminary estimate of project cost includes $50,000 for a Traffic Management Plan.

Environmental Clearance

A Preliminary Environmental Analysis Report has been prepared for this project, and is included in Exhibit D. It identifies a number of technical studies which may need to be prepared in support of a Negative Declaration/Finding of No Significant Impact for the project during the Project Approval & Environmental Document (PA&ED) stage of project development. It is anticipated that Caltrans will be the Lead Agency for compliance with the California Environmental Quality Act and the Federal Highways Administration is anticipated to be the Lead Agency for compliance with the National Environmental Policy Act. This project is in the Coastal Zone, so review by the California Coastal Commission and issuance of a Coastal Development Permit from Monterey County will be required.

An Air Quality Analysis will be prepared to address short-tem construction impacts, but the project is not anticipated to result in long-term local or regional air quality impacts, since it will not add additional through lanes.

The project build alternative is not considered by Caltrans to be a "Type I" project (as defined by 23 CFR 72). Therefore, no noise attenuation is anticipated in this project, and no sound wall is included in the project estimate. However, the FHWA may consider the construction of a truck climbing lane to be a Type I project, so noise attenuation (sound wall) may be required adjacent to the west edge of SR-1 right of way, adjacent to existing residences. A noise technical report will be required during the PA&ED phase of project development.

The project area is characterized by mature native trees and landscape plantings. There are three native trees within the project area which will be impacted by the proposed project. The change in views is to be evaluated in a Visual Resources Technical Report during the PA&ED phase.

Although no significant grading within the 100-year floodplain of the Carmel River at the south end of the study area is proposed, the widening of the approaches to the Rio Road intersection is within the floodplain. Therefore, a Floodplain Evaluation should be prepared during PA&ED.

Cultural resource studies will include archaeological testing to determine whether the archaeological site southeast of the Carmel Valley Road/SR 1 intersection extends into the project area. If not, no further studies are warranted. If it does, additional excavations will be needed to evaluate the site for the National Register of Historic Places (NRHP). If eligible for the NRHP, data recovery excavations will need to be conducted prior to project construction. No historic built-environment resources are within the project area.

A Natural Environment Study is to be conducted during PA&ED. As part of that study, focused surveys for Smith's blue butterfly, monarch butterfly and for special interest plants will be performed to determine the presence or absence of these sensitive species within the area to be impacted by the project. A Biological Assessment may also be necessary.

The Transportation Agency for Monterey County (TAMC) will assess impacts of the project on the environment and will prepare the Environmental Document (ED) to meet the requirements of both CEQA and NEPA. The draft and final ED will require Caltrans' review and approval prior to public circulation. TAMC will provide all data for and prepare drafts of the Draft Project Report (DPR) and the Project Report (PR). The State will review and process the reports and request approval of the project and its ED by the FHWA. TAMC will be responsible for the public hearing process.

Stormwater

The construction of the "Build" alternative for this project involves construction activities that have the potential to contribute sediment to storm water discharges, such as roadway excavation and fill, drainage improvements and grading operations. This project must adhere to the requirements specified in Caltrans National Pollution Discharge Elimination System permit and the Statewide Storm Water Management Plan (SWMP). The SWMP requires this project to address the feasibility of incorporating one or more of the listed approved treatment Best Management Practices (BMPs). A Storm Water Data Report has been prepared and has determined this project to be exempt from treatment BMPs.

Potential impacts to water quality will be addressed in the PA&ED, preliminary engineering and construction phases.

Funding/Scheduling

The project to be funded through a combination of state, federal and local sources. The capital costs for the build alternative are estimated to be $3,548,000. The capital costs are current, not escalated. This PSR recommends that $3.3 million in STIP funding be programmed, with the shortfall to be funded by TAMC through local funds (development fees or sales tax program). Because of current budget constraints, STIP funds programmed in 2004 will not be available until 2008. If the local agency desires to move this project into PA/ED in 2006 (as shown in Tables 8 and 9), local funds will have to be used for 100% of the PA/ED support costs.

The costs for project development and construction are shown in Table 8. The costs for PA&ED and PS&E include an allowance of 10% for Caltrans costs for oversight and quality assurance. The estimated project schedule is shown in Table 9.

Table 8
Capital and Support Cost Summary
In Thousands of Dollars

Project Cost Component	Fiscal Years			Total
	2005/06	2006/07	2007/08	
R/W Capital		18	30	48
Construct Capital			3,500	3,500
PA&ED (2)	80	70		150
PS&E (2)		180	95	275
R/W Support		1		1
Construct Support			420	420
Total	80	269	4,035	4,394

Note: (1) All costs X $1,000. Construction Capital costs and Right of Way Capital costs are not escalated.
(2) This number includes 10% Caltrans cost for oversight and quality assurance efforts.

Table 9
Estimated Project Schedule

Milestone	Date
Begin Environmental Work	02/2006
Circulate Draft Project Report / Draft ED	06/2007
PA/ED	11/2007
Right of Way Certification	05/2008
Plans, Specifications, & Estimate Complete	05/2008
Construction Complete	06/2009

The schedule and cost for completion of the PA&ED phase are based on the assumption that TAMC and its consultants will prepare the Project Report, Environmental Documentation and Plans, Specifications & Estimate. Caltrans will provide oversight and quality assurance for work done by TAMC and its consultants. Should it become necessary for Caltrans to do any or all of the work related to this project, Caltrans would need to complete a workplan of its own describing the schedule of milestones and costs for support.

A Cooperative Agreement will be prepared for the PA/ED and PS&E phases. Responsibility for the right of way and construction phases of the project will be determined during the PA/ED phase and appropriate Cooperative Agreements will be executed prior to the right of way and construction phases.

Contacts

The following personnel have been involved in the development of this PSR:

Jeffrey Morgan, Assist. Transportation Planning Engineer Transportation Agency for Monterey County	(831) 775-0903
David Rasmussen, PE (Caltrans Project Manager) Caltrans District 5	(805) 549-3677
Ali Hemmati, PE (Consultant Team Manager) Wood Rodgers	(916) 440-9519
Keith Hallsten, PE (Report Preparation) Wood Rodgers	(916) 440-9522
Ravi Narayanan, PE (Traffic Analysis) Wood Rodgers	(916) 321-5335
Michael Amling (Environmental Analysis) LSA Associates	(949) 553-0666

Exhibits:

A. Vicinity Map

B. "Build" Alternative Concept Drawing

C. Preliminary Estimate of Project Cost

D. Preliminary Environmental Analysis Report, with
   - Cultural Resource Screening
   - Hazardous Waste Initial Site Assessment
   - Preliminary Biological Assessment

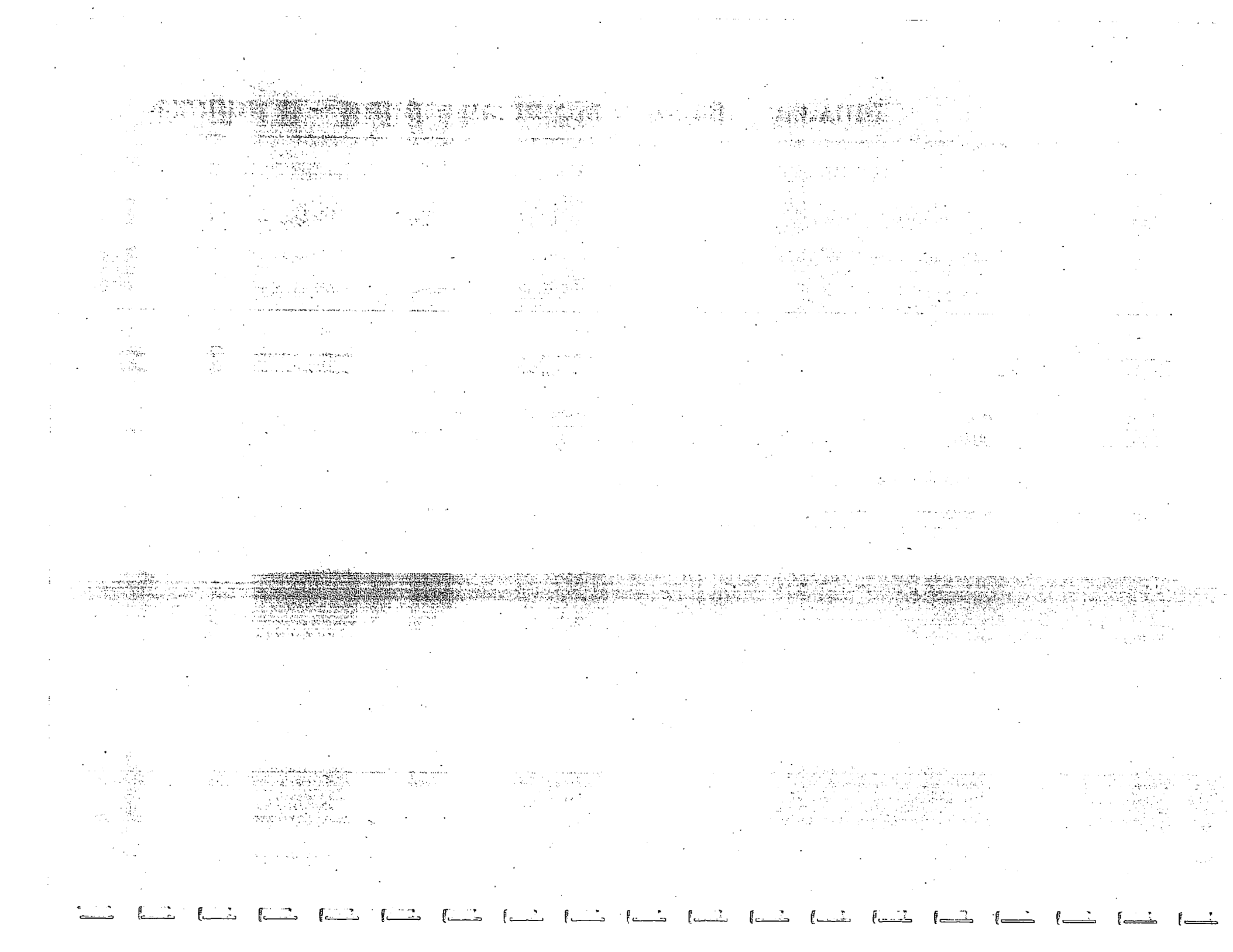
E. Traffic Operations Technical Memorandum

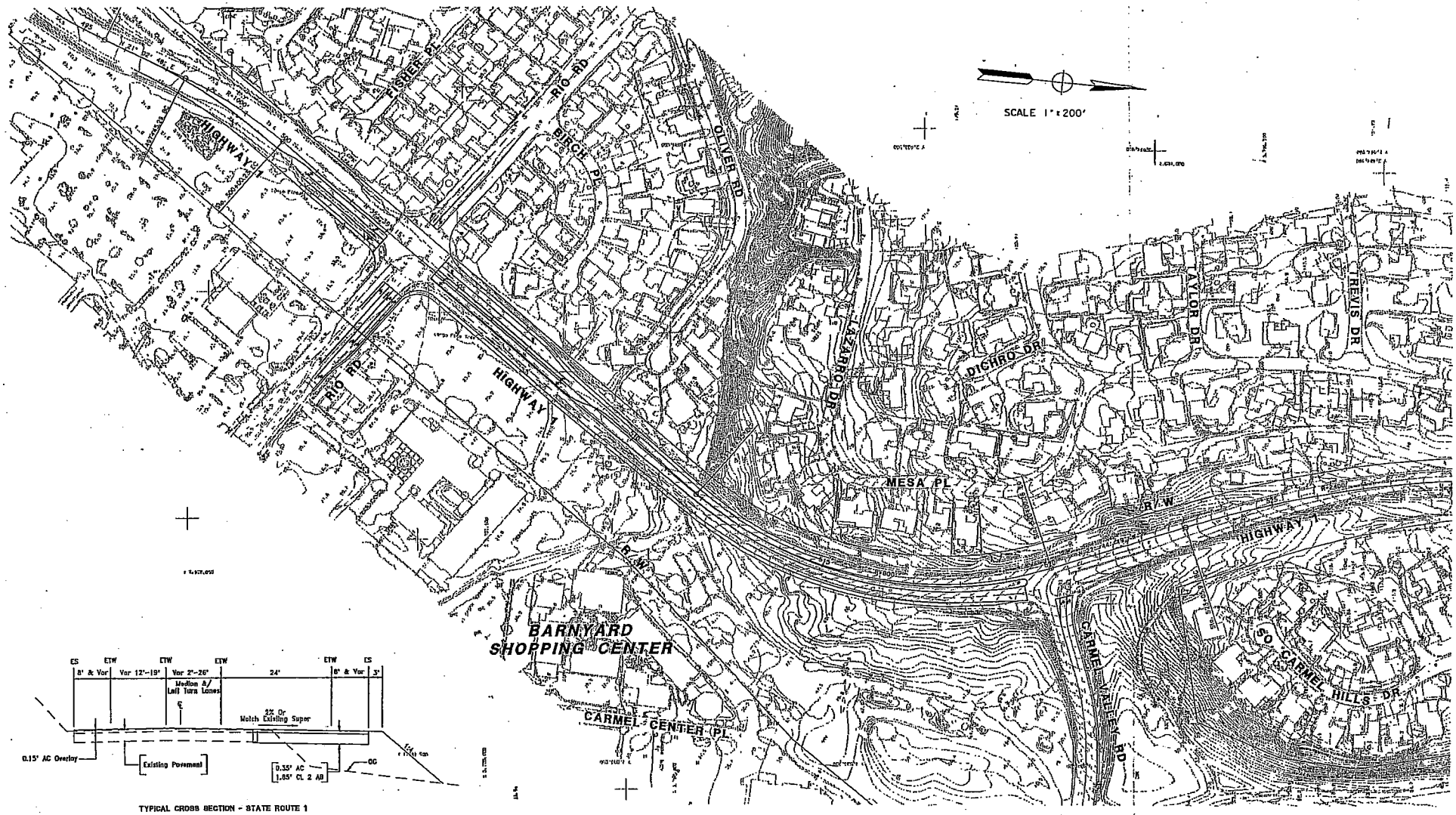
F. Right of Way Data Sheet & Utility Info Sheet

G. Storm Water Data Report Cover Sheet

H. Traffic Management Plan Checklist

Exhibit A – Vicinity Map





TYPICAL CROSS SECTION - STATE ROUTE 1

WOOD RODGERS
ENGINEERING - MAPPING - PLANNING - SURVEYING
3301 C St, Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767

PROJECT

STATE ROUTE 1 IMPROVEMENT (RIO RD - CARMEL VALLEY RD)

CONCEPTUAL GEOMETRIC PLAN

Exhibit C – Preliminary Estimate of Project Cost

PRELIMINARY PROJECT COST ESTIMATE SUMMARY

District-County-Route	5 - MON - 1
KP(PM)	116.3/117.2 (72.3/72.9)
EA	05-0L570K
Program Code	HB4N

PROJECT DESCRIPTION: Operational Improvements on State Route 1 from Rio Road to Carmel Valley Road

Limits: On State Route 1 from 0.19 kilometers south of Rio Road to Carmel Valley Road

Proposed Improvement (Scope): Construct truck climbing lane on SR-1 from Rio Road to Carmel Valley Road and improve turn lanes at the Rio Road intersection with State Route 1

Alternate: "Build"

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$	3,499,400
TOTAL STRUCTURE ITEMS	$	0
SUBTOTAL CONSTRUCTION COSTS	$	3,499,400
TOTAL RIGHT OF WAY ITEMS	$	49,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	$	3,548,400

Reviewed by Project Manager
Wood Rodgers

Signature

Approved by Project Engineer
Wood Rodgers

Signature

Phone No. (916) 341-7760 Date January 24, 2005

District-County-Route	5 - MON - 1
KP(PM)	116.3/117.2 (72.3/72.9)
EA	05-0L570K
Program Code	HB4N

I. ROADWAY ITEMS

Section 1 Earthwork	Quantity	Unit	Unit Price	Item Cost	Section Cost
Roadway Excavation	1,000	M3	$40.00	$40,000	
Imported Borrow	2,000	M3	$60.00	$120,000	
Clearing & Grubbing	1	LS	$10,000.00	$10,000	
Develop Water Supply					
			Subtotal Earthwork		$170,000

Section 2 Pavement Structural Section*					
PCC Sidewalk					
PCC Curb&Gutter					
Open Grade Asphalt Concrete					
Asphalt Concrete	2,300	TONN	$90.00	$207,000	
Cement-Treated Base					
Aggregate Base	2,300	M3	$70.00	$161,000	
Treated Permeable Base					
Aggregate Subbase					
Pavement Reinforcing Fabric					
Edge Drains					
			Subtotal Pavement Structural Section		$368,000

Section 3 Drainage					
Large Drainage Facilities					
Storm Drains					
Pumping Plant (Detention Basin)					
Project Drainage	1	LS	$100,000.00	$100,000	
			Subtotal Drainage		$100,000

* Reference sketch showing typical pavement structural section elements of the roadway. Include (if available) T.I., R-Value and date when tests were performed.

District-County-Route	5 - MON - 1
KP(PM)	116.3/117.2 (72.3/72.9)
EA	05-0L570K
Program Code	HB4N

Section 4 Specialty Items	Quantity	Unit	Unit Price	Item Cost	Section Cost
Retaining Walls					
Barriers					
Guardrail					
Noise Barriers					
Highway Planting	1	LS	$100,000.00	$100,000	
Replacement Planting	1	LS	$100,000.00	$100,000	
Irrigation Modification					
Relocate Private Irrigation Facilities					
Erosion Control	1	LS	$15,000.00	$15,000	
Slope Protection					
Water Pollution Control	1	LS	$42,500.00	$42,500	
Hazardous Waste Mitigation Work	1	LS	$50,000.00	$50,000	
Environmental Mitigation	1	LS	$885,000.00	$885,000	
Resident Engineer Office Space	1	LS	$20,000.00	$20,000	
Construction Staking	1	LS	$20,000.00	$20,000	
Temporary Railing (Type K)	60	M	$300.00	$18,000	
Crash Cushion Modules	4	EA	$2,500.00	$10,000	
			Subtotal Specialty Items		$1,260,500

Section 5 Traffic Items					
Lighting	1	LS	$50,000.00	$50,000	
Traffic Delineation Items	1	LS	$20,000.00	$20,000	
Traffic Signals	1	LS	$200,000.00	$200,000	
Overhead Sign Structures					
Roadside Signs	1	LS	$30,000.00	$30,000	
Ramp Metering System					
Traffic Control Systems	1	LS	$50,000.00	$50,000	
Traffic Management Plan	1	LS	$50,000.00	$50,000	
			Subtotal Traffic Items		$400,000

SUBTOTAL SECTIONS 1-5	$2,298,500

District-County-Route 5 - MON - 1
KP(PM) 116.3/117.2 (72.3/72.9)
EA 05-0L570K
Program Code HB4N

Section 6 Minor Items

Subtotal Sections 1-5 $2,298,500 x 5% $114,925

TOTAL MINOR ITEMS $114,900

Section 7 Roadway Mobilization

Subtotal Sections 1-5 $2,298,500
Minor Items $114,900

Sum $2,413,400 x 10% $241,340

TOTAL ROADWAY MOBILIZATION $241,300

Section 8 Road Additions

Supplemental

Subtotal Sections 1-5 $2,298,500
Minor Items $114,900

Sum $2,413,400 x 10% $241,340

Contingencies *

Subtotal Sections 1-5 $2,298,500
Minor Items $114,900

Sum $2,413,400 x 25% $603,350

TOTAL ROADWAY ADDITIONS $844,700

TOTAL ROADWAY ITEMS $3,499,400
(Total of Sections 1-8)

ESTIMATE PREPARED BY
WOOD RODGERS Keith Hallsten (Print Name) PHONE # (916) 341-7760 DATE January 24, 2005

* Use appropriate percentage per Chapter 3-50 of Project Development Procedures Manual: PSR 25%, Draft PR 20%, PR 15%.

District-County-Route 5 - MON - 1

KP(PM) 116.3/117.2 (72.3/72.9)

EA 05-0L570K

Program Code HB4N

II. STRUCTURES ITEMS

Bridge Name			
Structure Type			
Width (out to out) - (m)			
Span Length - (m)			
Total Area - (m^2)			
Footing Type (pile/spread)			
Cost Per m^2 (incl. 10% mobilization and 25% contingency)			
Total Cost for Structure			

SUBTOTAL STRUCTURES ITEMS $0

Railroad Related Costs:

SUBTOTAL RAILROAD ITEMS $0

TOTAL STRUCTURES ITEMS $0

COMMENTS:

ESTIMATE PREPARED BY

WOOD RODGERS PHONE # (916) 341-7760 DATE January 24, 2005

(Print Name)

(If appropriate, attach additional pages and backup)

District-County-Route 5 - MON - 1

KP(PM) 116.3/117.2 (72.3/72.9)

EA 05-0L570K

Program Code HB4N

III. RIGHT OF WAY

Acquisition, incl excess lands & damages to remainder	$38,000
Utility Relocation (Project share)	
Clearance/Demolition	
RAP	
Coastal Development Permit	$10,000
Title and Escrow Fees	$1,000

TOTAL RIGHT OF WAY $49,000

CONSTRUCTION CONTRACT WORK $0

COMMENTS

Partial take from Chevron gas station on Rio Road for Monterey County.

ESTIMATE PREPARED BY

WOOD RODGERS R.H. Tarvin SR/WA, IFAS PHONE # (805) 489-0147 DATE July 17, 2004

(Print Name)

(If appropriate, attach additional pages and backup.)

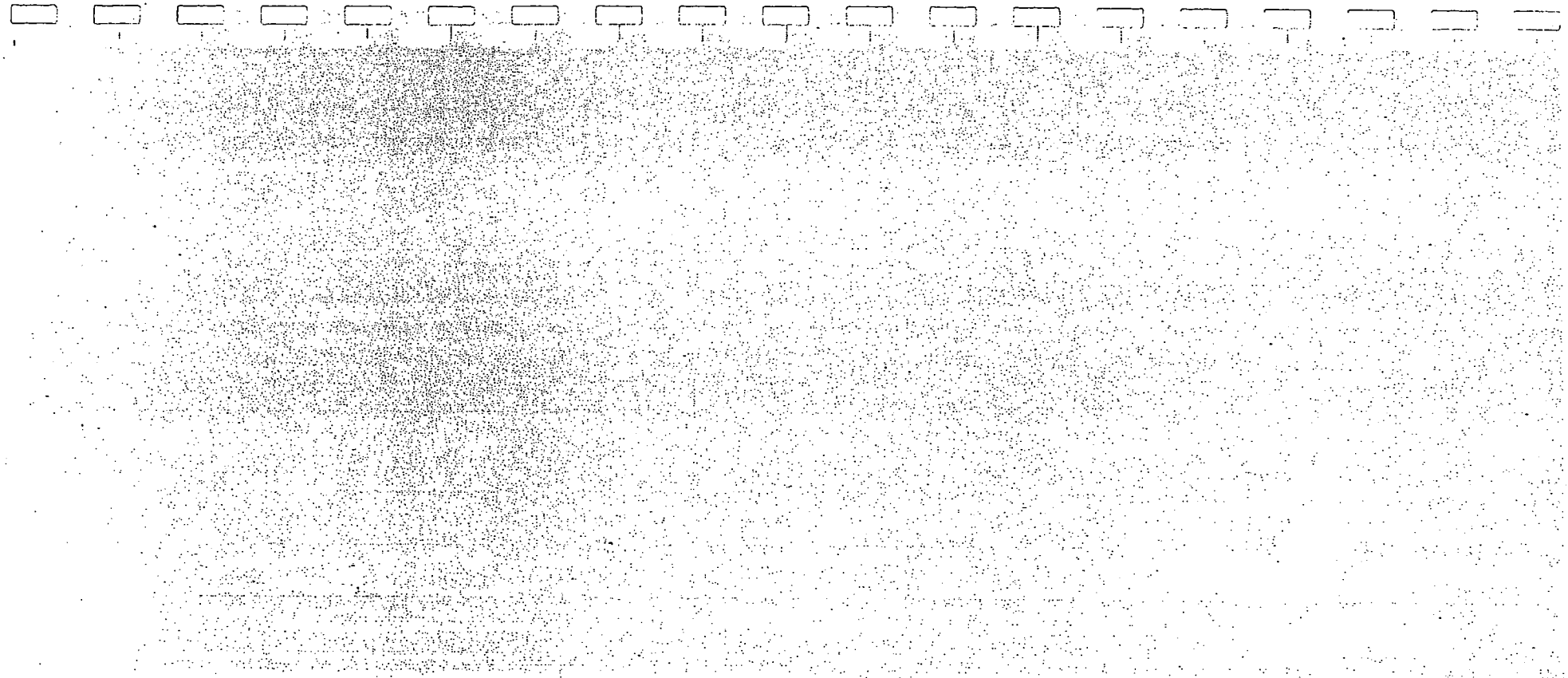
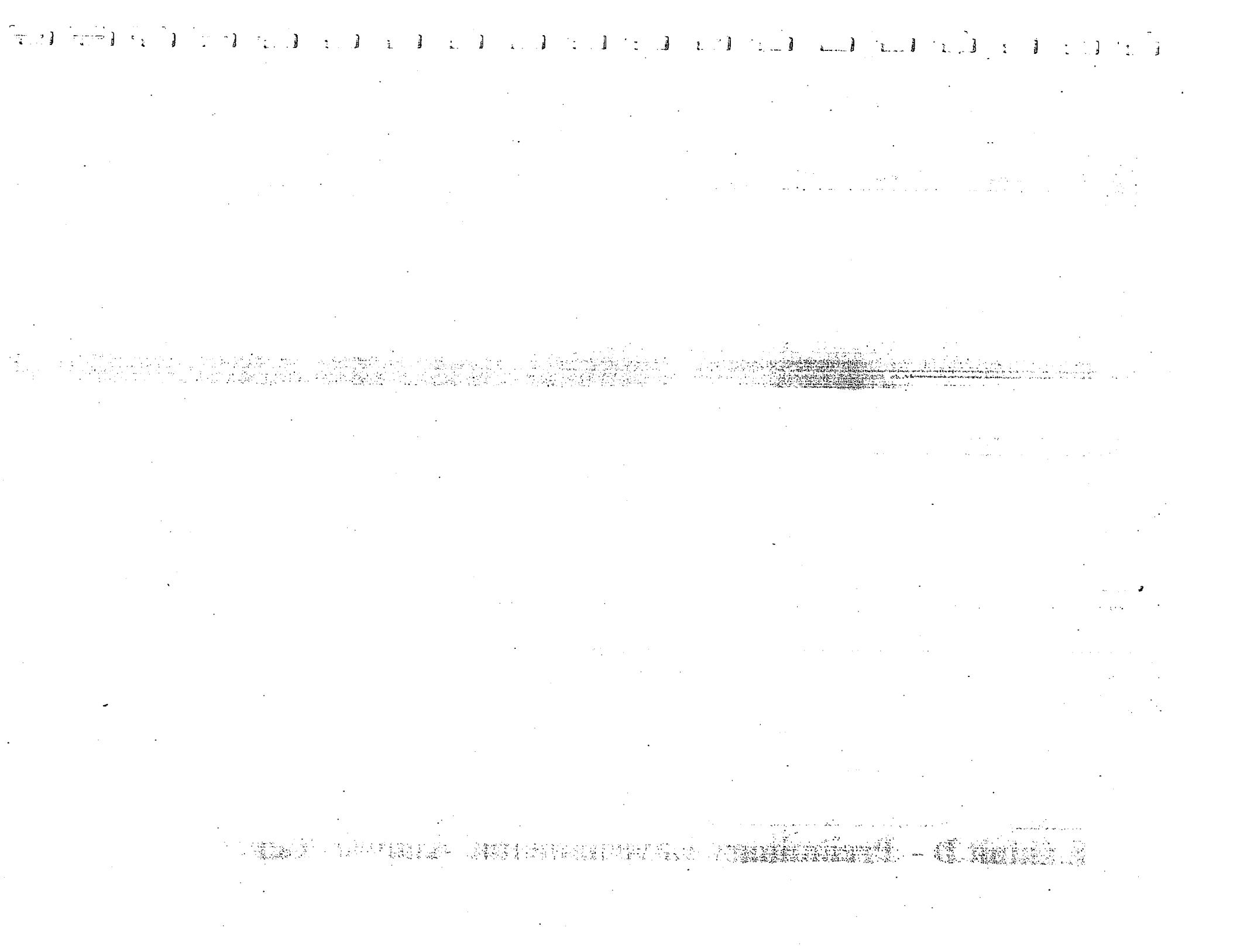


Exhibit D – Preliminary Environmental Analysis Report



Caltrans Metric

Preliminary Environmental Analysis Report

Project Information

District 05 County Mon Route 1 Kilometer Post 116.3–117.2 (Post Mile 72.3–72.9) EA 05-0L570K

Project Title: State Route 1 Operational Improvements from Rio Road to Carmel Valley Road

Project Manager Jeffrey Morgan (TAMC) Phone # (831) 775-0903

Project Engineer Keith Hallsten (Wood Rodgers Engineering) Phone # (916) 341-7760

Environmental (Manager) Office Chief Larry Newland Phone # (805) 542-4603

Environmental Planner Generalist Larry Newland (Caltrans, District 5) Phone # (805) 542-4603

Project Description

Purpose and Need: The purpose for the proposed operation improvements is to improve the level of service (LOS) on State Route 1 (SR-1) to LOS D in peak hours and to maintain both intersection operations and roadway segment operations at LOS D through the year 2030. This will balance the community's desire to maintain SR-1 as a conventional undivided highway with a generally rural character with the desire for reasonably efficient transportation to serve the needs of local and regional commuter traffic as well as tourist traffic. Features to facilitate bicycle and pedestrian traffic, improve emergency vehicle response time, and accommodate the provision of public transportation services are to be incorporated as appropriate.

Description of work: The Transportation Agency for Monterey County (TAMC) is proposing operational improvements to SR-1 from approximately 226 meters (740 feet) south of Rio Road to Carmel Valley Road, a length of approximately 0.9 kilometer (0.6 mile). The project area is shown in Figure 1, Project Location. The improvements include construction of a northbound truck-climbing lane from Rio Road to Carmel Valley Road. Additional turn lanes would be constructed at the Rio Road intersection (westbound right-turn lane on Rio Road to northbound SR-1 and northbound right-turn lane on SR-1 to westbound Rio Road), and the existing traffic signals would be modified at the SR-1 intersections with Rio Road and Carmel Valley Road.

Alternatives: The Project Study Report will evaluate one build alternative and the no build alternative. As described above, the proposed build alternative will construct one northbound truck-climbing lane on SR-1 from Rio Road to Carmel Valley Road, add turn lanes as required at the Rio Road intersection, and modify traffic signals at both Rio Road and Carmel Valley Road.

Anticipated Environmental Approval

	CEQA		NEPA
☐	Categorical/Statutory Exemption	☐	Categorical Exclusion
☒	Negative Declaration/Focused ND	☒	Finding of No Significant Impact
☐	Environmental Impact Report	☐	Environmental Impact Statement

The environmental document will be an Environmental Assessment/Initial Study (EA/IS), anticipated to result in a Negative Declaration/Finding of No Significant Impact (ND/FONSI). Caltrans will be the Lead Agency for the California Environmental Quality Act (CEQA). The Federal Highway Administration (FHWA) will be the Lead Agency for the National Environmental Policy Act (NEPA), and Caltrans District 5 will be the Reviewing Agency. It is anticipated that environmental approval can be achieved approximately within 18 to 24 months of project initiation. If CA-MNT-290 is found to be eligible for the National Register and data recovery is required, environmental approval of the proposed project may be delayed.

Project Study Report Summary Statement

An EA/IS leading to an ND/FONSI is the anticipated environmental document for the proposed project. This would be completed approximately within 18 to 24 months. The Preliminary Environmental Analysis Report (PEAR) provides the initial environmental evaluation of a project and all feasible alternatives before it is programmed in the State Transportation Improvement Program (STIP) or State Highway Operation and Protection Program (SHOPP).

Required Technical Studies

Based upon the findings of the PEAR, the following technical studies will be required for the proposed project: Section 4(f) Evaluation, Visual Resources Study, Water Quality Study, Floodplain Evaluation, Noise Study, Air Quality Study, Archaeological Survey Report, Historic Properties Survey Report, Archaeological Evaluation Report, Extending Phase I/II Testing Proposal, and Natural Environmental Study.

Mitigation Cost Estimates

- Visual Effects: landscaping and revegetation ($100,000).
- Water Quality: NPDES permit requirements; estimated costs for NPDES compliance are as follows: design pollution prevention best management practices (BMPs) (incorporated as part of excavation, grading, and backfill costs); construction site BMPs (4 percent of construction costs); SWPPP Preparation ($10,000); treatment BMPs ($150,000 [$250,000 per roadway mile]).
- Cultural Resources: Potential archaeological data recovery for site CA-MNT-290 ($500,000).
- Scenic Resources: Replacement of displaced oak and pine trees ($100,000).
- Hazardous Waste: Sampling for petroleum hydrocarbons in the soils and groundwater should be conducted (if groundwater will be encountered or if dewatering will occur during construction) ($10,000).

Special Considerations

There are no special processes anticipated that would affect project delivery. However, Section 4(f) resources and implementation of an archaeological data recovery plan may require extended environmental processes.

Anticipated Project Mitigation

Specific project mitigation will be determined as part of the environmental document preparation.

Disclaimer

This report is not an environmental document. Preliminary analysis, determinations, and estimates of mitigation costs are based on the project description provided in this report. The estimates and conclusions provided are approximate and are based on a cursory analysis of probable effects. This report is to provide a preliminary level of environmental analysis to supplement the Project Study Report. Changes in project scope, alternatives, or environmental laws will require a reevaluation of this report.

Reviewed by:

Environmental Office Chief — Date: 1-25-05

Project Manager — Date: 1-25-05

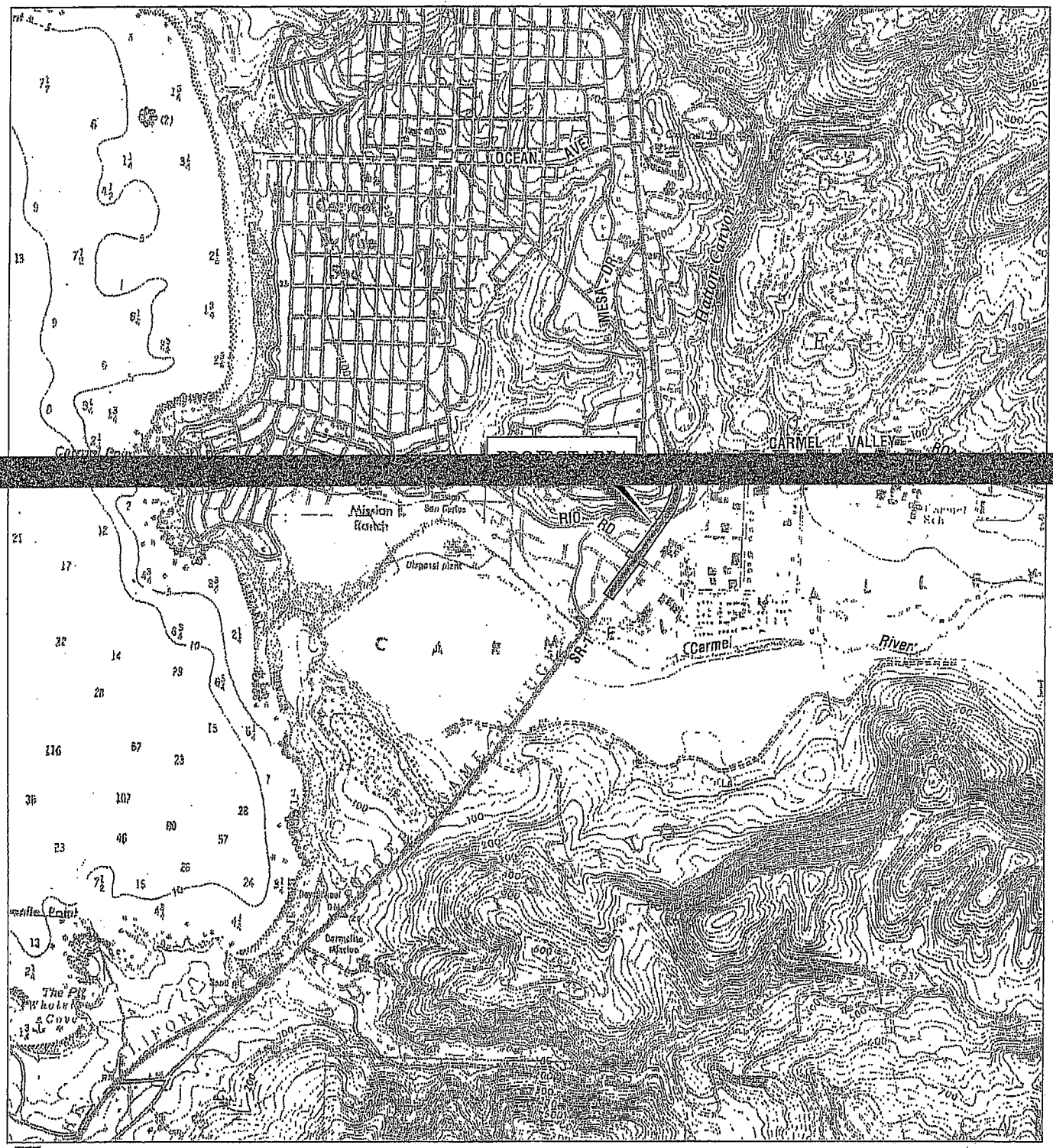


FIGURE 1

Caltrans

N

0 1000 2000 FEET

0 305 610 METERS

MAP SOURCE: USGS 7.5' QUAD - MONTEREY, CA.

SR-1 Operational Improvements
Project Vicinity
KP 116.3/117.2 (PM 72.3/72.9)
EA #05-0L570K
05-MON-1

I:\WRS430\G\Vicinity.cdr (10/11/04)

Environmental Technical Reports or Studies Required

	Study	Document	N/A
Community Impact Study	☐	☐	☒
Farmland	☐	☐	☒
Section 4(f) Evaluation	☒	☐	☐
Visual Resources	☒	☐	☐
Water Quality	☒	☐	☐
Floodplain Evaluation	☒	☐	☐
Noise Study	☒	☐	☐
Air Quality Study	☒	☐	☐
Paleontology	☐	☒	☐
Wild and Scenic River Consistency	☐	☐	☒
Cumulative Impacts	☐	☒	☐
Cultural			
ASR	☒	☒	☐
HRER	☐	☐	☒
HPSR	☒	☒	☐
Section 106 / SHPO	☒	☐	☐
Native American Coordination	☒	☐	☐
Finding of Effect (unless site eligible)	☐	☐	☒
Data Recovery Plan (unless site eligible)	☐	☐	☒
Other:			
Extended Phase I/II Testing & Evaluation Proposal	☒	☒	☐
Archaeological Evaluation Report	☒	☒	☐
Hazardous Waste			
ISA (Additional)	☒	☐	☐
PSI	☐	☒	☐
Other	☐	☐	☒
Biological			
Endangered Species (Federal)	☒	☐	☐
Endangered Species (State)	☒	☐	☐
Species of Concern (CNPS, USFS, BLM, S, F)	☒	☐	☐
Biological Assessment (USFWS, NMFS, State)	☐	☒	☐
Wetlands	☐	☐	☒
Invasive Species	☐	☒	☐
Natural Environment Study	☒	☐	☐
NEPA 404 Coordination	☐	☐	☒
Other _____	☐	☐	☒

Permits	Study	Document	N/A
401 Permit Coordination	☐	☐	☒
404 Permit Coordination	☐	☐	☒
1601 Permit Coordination	☐	☐	☒
City/County Coastal Permit Coordination	☒	☐	☐
State Coastal Permit Coordination	☒	☐	☐
NPDES Coordination	☒	☐	☐
U.S. Coast Guard (Section 10)	☐	☐	☒

Discussion of Technical Review

Use brief paragraphs focused on topics that will need environmental review. Indicate the absence of issues to document that they were considered. Follow the Checklist when preparing the summary discussion. Make a separate statement for each viable alternative..

Socioeconomic and Community Effects. The project area is located within the Monterey County Local Coastal Program area. Within the project limits, a commercial center is located on the east side of SR-1, and residential uses are located on the west side of SR-1. The majority of the proposed improvements will be constructed within existing State (Caltrans) right-of-way and will not result in any displacements to residential or commercial uses within the project area. The project is not expected to have any adverse effects on the local community or the economy since it will improve traffic operations within the project area.

Farmlands. The proposed project is located within an urbanized area and does not include any agricultural lands. There are no designated local, prime, or unique farmlands located adjacent to the project area (Source: Monterey County General Plan).

4(f) Impacts. The Hatton Canyon area (located northeast of the Carmel Valley Road intersection) may become a new State Park per Assembly Bill 434 (AB 434). There is a potential for a major trail corridor to be developed within the park area, with links to various inland recreational trails (Source: Monterey County Local Coastal Program). There are also bike lanes along SR-1 and Carmel Valley Road that are considered recreation resources. Pending the status of these potential and existing recreation resources during the PA&ED phase of the project, a Section 4(f) Assessment may be required.

Visual Effects. SR-1 is a designated State Scenic Highway, and Monterey Pines are designated as a scenic resource by Monterey County. The project may remove up to four mature trees (up to two pines and two oaks) on the east side of SR-1. Therefore, a Visual Impact Analysis should be prepared during the PA&ED phase of the project to evaluate the potential visual impacts of the proposed project.

Water Quality and Erosion. Water Pollution Control will be required for the proposed project. The contractor will be required to comply with the Storm Water Quality Handbook, Project Planning & Design Guide, and the Storm Water Management Plan. As part of Caltrans' Storm Water Management Plan, BMPs will be implemented to minimize potential water pollution during construction and operation of the proposed project. A Water Quality Study should be prepared to address potential impacts on water quality.

Floodplain. The southern portion of the proposed project is located within the Carmel River 100-year floodplain and is subject to flooding during storms. A Floodplain Evaluation should be prepared based upon the findings of the preliminary drainage study during the PA&ED phase of the project.

Air. The project site is located in the North Central Coast Air Basin (NCCAB), which includes Santa Cruz, San Benito, and Monterey Counties and is under the jurisdiction of the Monterey Bay Unified Air Pollution Control District (MBUAPCD). The MBUAPCD is responsible for monitoring air quality in the basin. The proposed operational improvements will not add any through lanes or additional capacity on SR-1. Therefore, the project is not expected to result in any long-term local or regional air quality impacts. However, an Air Quality Study is recommended to analyze short-term construction impacts of the proposed project.

Noise. There are several sensitive (residential) land uses located on the west side of the project alignment. Therefore, it is recommended that a Noise Study be prepared during the PA&ED phase of the project to address potential noise impacts during construction and operation of the proposed project. According to the Traffic Noise Analysis Protocol (October 1998), the proposed truck-climbing lane is not considered by Caltrans as a Type I project (as defined by 23 CFR 772). Therefore, it is not anticipated that noise attenuation will be required. However, the FHWA may consider the addition of a truck-climbing lane as a Type I project. The determination of the project as a Type I project by Caltrans and the FHWA will be made during preparation of the Noise Study.

Wild and Scenic River. There are no wild and scenic rivers adjacent to or within the project area. No wild and scenic rivers will be affected by the project.

Cultural Resources. The Cultural Resources Screening Report included as Appendix A was completed for a segment of SR-1 extending from SR-68 to the Carmel River Bridge in support of the State Route 1 Improvements Project—a larger project and study area that includes the SR-1 Truck Climbing Lane project area in its entirety. That report summarizes a cultural resources records search and pedestrian archaeological survey. Information from the larger project relevant to the SR-1 Truck Climbing Lane Project was extracted for presentation within the PEAR and PSR.

Based on the archaeological/historical records search and survey, there is a potential for additional archaeological resources to be encountered during project-related construction activities. All construction should be monitored by a qualified archaeologist because there are previously recorded archaeological resources present in the area. An Area of Potential Effect (APE) should be prepared to include all access roads, work areas, and staging areas beyond the existing paved SR-1. There is one previously recorded archaeological site (CA-MNT-290) located on the east side of SR-1, south of Carmel Valley Road. If this site cannot be avoided, archaeological testing will need to be conducted to determine the current site boundaries and to evaluate site eligibility for listing on the National Register of Historic Places (requiring an Extended Phase I/II Testing and Evaluation). Should the current site boundaries extend into the proposed APE and the site is determined eligible (through preparation of an Archaeological Evaluation Report), data recovery excavations will need to be conducted prior to construction. A positive Archaeological Survey Report (ASR) and positive Historic Properties Survey Report (HPSR) should be prepared during the PA&ED phase of the project pursuant to Section 106 of the National Historic Preservation Act.

There are no properties within one-half mile of the project area listed in the National Register, California Register, California Historical Landmarks, or California Points of Historical Interest. There are no buildings or structures located within the project right-of-way. Therefore, a Historic Resource Evaluation Report (HRER) is not required.

Native American Coordination. Native American consultation should be conducted, including contacting the Native American Heritage Commission for a search of their Sacred Lands File and a list of knowledgeable parties. All knowledgeable parties should receive a letter (followed up with a phone call) describing the project and inviting comments on cultural resource concerns.

Paleontology. USGS quadrangle maps should be reviewed to determine potentially affected geological formation(s). The potential to excavate within sensitive geological formations will be

evaluated in the text of the environmental document for the project. Recommendations will be made regarding appropriate mitigation, if warranted.

Hazardous Waste/Materials. A Hazardous Waste Initial Site Assessment (ISA) checklist and site visit were completed for the proposed project (Appendix B).

A search of potential hazardous waste releases was conducted through the State Water Resources Control Board's (SWRCB) Geotracker database. As discussed in the ISA Checklist, a LUST site (Chevron gasoline service station; Case No. 3013) was found within 0.4 kilometer (0.25 mile) of the project site. Based on the Leaking Underground Fuel Tank report obtained through the SWRCB Geotracker database, the leak consisted of a gasoline release and affected area groundwater not used for drinking water. Sampling for petroleum hydrocarbons in the soils and groundwater should be conducted (if groundwater will be encountered or if dewatering will occur during construction).

ADL testing conducted for the first truck climbing lane found that ADL is lower than regulatory levels. The project also involves the importation of soils rather than the export of existing soils. Therefore, ADL is not expected to be environmental concern, and no sampling is required.

Power lines and associated transformers remain in the project vicinity. Unless determined to be leaking, the transformers are not considered an environmental concern. However, steps should be taken to ensure that construction of the proposed project will not interfere with existing power lines and transformers.

Biological Resources. A Biological Resources Screening was completed for a segment of SR-1 extending from the Carmel River Bridge to the SR-68 interchange in support of the SR-1 Improvements Project—a larger project and study area that includes the SR-1 Truck Climbing Lane project area in its entirety. Information from the larger project relevant to the SR-1 Truck Climbing Lane Project was extracted for use in the PSR/PEAR. This biological screening is included as Appendix C. This screening included a complete biological records search, a field reconnaissance survey to evaluate the current habitat conditions, and observations of plant and animal species occurring within the entire SR-1 corridor. Table A (Appendix C) includes a summary of findings from the California Natural Diversity Data Base (CNDDB) and California Native Plant Society (CNPS) records. The following is a summary of the recommendations of the Biological Resources Screening that pertain to the proposed project.

- A Natural Environment Study Report (NESR) should be prepared during the project's PA&ED phase to describe existing conditions at the project site in addition to identifying sensitive biological resources and potential effects of the proposed project on those resources.
- A more thorough general survey and focused surveys for the Smith's blue butterfly and monarch butterfly should be conducted for the possible presence of these species within the project boundaries.
- Focused surveys during appropriate seasons for special interest plants, such as the Monterey Pine, Beach layia, Menzies' wallflower, Coastal dunes milk vetch, and Tidestom's lupine are recommended.

Wetlands. A riparian corridor begins southeast of the SR-1 intersection at Carmel Valley Road. However, this corridor is not located within the boundaries of the proposed project and will not be impacted by the proposed project. Therefore, a delineation of jurisdictional wetlands and waters of the United States is not required.

Invasive Pest Plant Species. The NESR and the environmental document for the project will address project compliance with Executive Order 13112 regarding invasive species.

Right-of-Way Relocation or Staging Area. The majority of the proposed improvements will be constructed within existing State (Caltrans) right-of-way. Minor additional right-of-way will be required for improvements to the Rio Road intersection, but no full parcel acquisitions or impacts to structures are expected. It is anticipated that staging areas will be located within existing State (Caltrans) right-of-way. Given the limited amount of grading required for the proposed project, it is not anticipated that material and disposal sites will be required.

Mitigation

Specific project mitigation will be determined as part of the environmental document preparation.

Permits. Since it is not anticipated that material and disposal sites will be required, additional permits are not required.

Coastal Zone. This project is located within the Monterey County Local Coastal Program and will require a Coastal Development Permit from Monterey County.

List of Preparers

Hazardous Waste Review by Noel Legaspi	Date 10/7/04
Biological Review by Kimberly Peterson	Date 10/17/01
Cultural Review by Nicole Pletka	Date 10/17/01
Community Impact Review by Maggie Brothers	Date 4/27/04
Visual Review by Maggie Brothers	Date 4/27/04
Floodplain Review by Maggie Brothers	Date 4/27/04

Attachment A—PEAR Mitigation and Compliance Cost Estimate*(Standard PSRs Only)

Dist.-Co.-Rte.-KP/PM: 05-MON-1 KP 116.3-117.2 (PM 72.3-72.9) EA: 05-0L570K

Project Description: The proposed project includes construction of a northbound truck-climbing lane from Rio Road to Carmel Valley Road. Additional turn lanes would be constructed at the Rio Road intersection (westbound right-turn lane on Rio Road to northbound SR-1 and northbound right-turn lane on SR-1 to westbound Rio Road), and the existing traffic signals would be modified at the SR-1 intersections with Rio Road and Carmel Valley Road.

Person completing form/Dist. Office: Noel Legaspi, LSA Associates, Inc.
Project Manager: Jeffrey Morgan (TAMC) Phone number: (831) 775-0903

	Mitigation			Compliance
	Project Feature[1]	Enviro. Obligation[2]	Statutory Require.[3]	Permit & Agreement[4]
Fish & Game 1601 Agreement				
Coastal Development Permit				$10,000
State Lands Agreement				
NPDES Permit		$165,000		
COE 404 Permit–Nationwide				
COE 404 Permit–Individual				
COE Section 10 Permit				
COE Section 9 Permit				
Noise attenuation				
Special landscaping	$100,000			
Archaeological[1]	$500,000			
Biological				
Historical				
Scenic resources	$100,000			
Wetland/riparian				
Other: Petroleum hydrocarbon soil and groundwater samples	$10,000			
TOTAL (Enter zeros if no cost)	$710,000	$165,000	$0	$10,000

- Costs are to include all costs to complete the commitment including: 1) capital outlay and staff support; 2) cost of right-of-way or easements; 3) long-term monitoring and reporting; and 4) any follow-up maintenance.

1 Mitigation that Caltrans would normally do if not required by a permit or environmental agreement.

2 Mitigation that Caltrans would not normally do but is required by conditions of a permit or environmental agreement.

3 Mitigation that Caltrans would not normally do and is not required by a permit or Environmental Agreement, but is required by a law.

4 Non-mitigation Caltrans would not normally do but is required by conditions of a permit or agreement.

* Prepare a separate form for each practicable alternative in the PSR.

---

1 Archaeological resource costs include potential data recovery for site CA-MNT-290. It does not appear that this site will be eligible for the National Register and require data recovery. However, this determination will be made after preparation of the Archaeological Evaluation Report.

APPENDIX A

CULTURAL RESOURCES SCREENING

LSA

LSA ASSOCIATES, INC.
ONE PARK PLAZA, SUITE 500
IRVINE, CALIFORNIA 92614

949.553.0666 TEL
949.553.8076 FAX

OTHER OFFICES:
BERKELEY
PT. RICHMOND

FT. COLLINS
RIVERSIDE
ROCKLIN

October 17, 2001

Ali Hemmati
Consultant Project Manager
Dokken Engineering
140 Central Avenue
Salinas, CA 93901

Subject: Results of Cultural Resource Screening for the Proposed State Route 1 Improvements Project, City of Carmel-by-the-Sea, Monterey County, California

The purpose of this letter report is to provide the results of the Cultural Resources Screening by LSA Associates, Inc. (LSA). This screening includes a completed archaeological/historical records search and field survey for the State Route 1 (SR-1) improvements between State Route 68 (SR-68) and the Carmel River Bridge in Carmel-by-the-Sea, Monterey County, California. Results of the records search, field survey, and recommendations are included in this report.

The study area covers a 4.7 kilometer (2.9 mile) segment of SR-1 and a 402.35 meter (one-quarter mile) radius surrounding SR-1. The following streets intersect SR-1 within the study segment and are included in the study: San Luis Avenue, Carpenter Street, Handly Drive, Valley Way, Third Avenue, Flanders Drive, Mesa Drive, Morse Drive, Atherton Drive, Carmel Valley Road, Rio Road, and Oliver Road. The study area also covers a portion of Hatton Canyon, located east of SR-1, where alternatives are considered. An approximately 488 meter (1600 feet) length of Hatton Canyon, north of Carmel Valley Road, was included in the records search and visual survey. Residential, commercial, and open space land uses are within and adjacent to the project study area.

Archaeological/Historical Records Search

On May 4, 2001, LSA conducted an archaeological/historical records search through the Northwest Information Center, located at Sonoma State University, Rohnert Park, California. The records search included a review of all recorded historic and prehistoric archaeological sites within a one-half mile radius of the project area as well as a review of known cultural resource survey and excavation reports. In addition, LSA examined the National Register of Historic Places (National Register), California Register of Historic Resources (California Register), California Historical Landmarks, and California Points of Historical Interest. Please refer to Figure 1 (Regional Location) and Figure 2 (Project Vicinity).

The results of the records search (Attachment A) indicate that there is one prehistoric archaeological site located within the project area. This site, CA-MNT-290, is located on the east side of SR-1, south of Carmel Valley Road. Within one-half mile of the project area, there are two previously recorded isolates and two additional prehistoric archaeological sites. There are no properties listed in the National Register, California Register, California Historical Landmarks, or California Points of Historical Interest within one-half mile of the project area. There have been 15 surveys conducted within or adjacent to the project area.

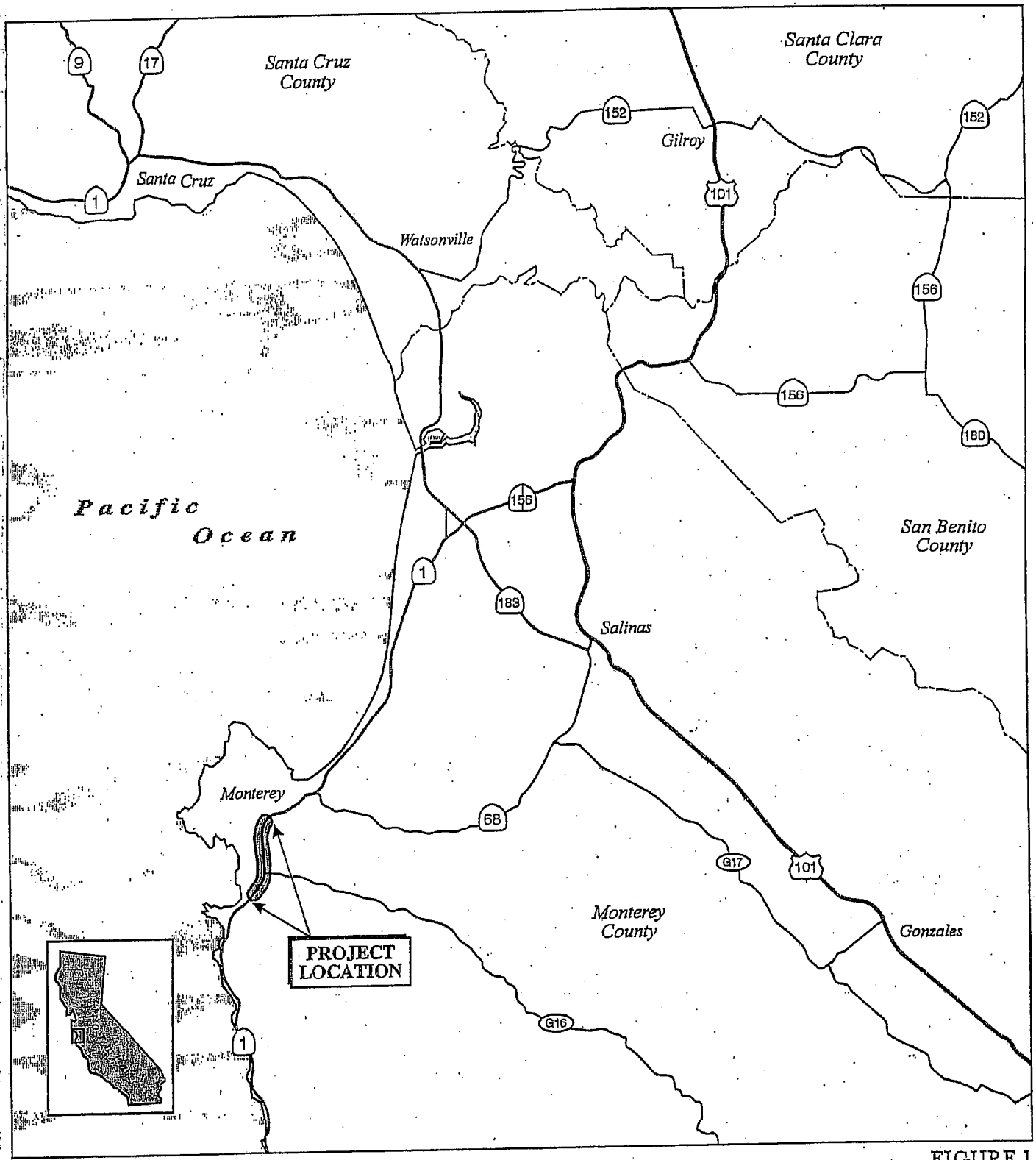


FIGURE 1

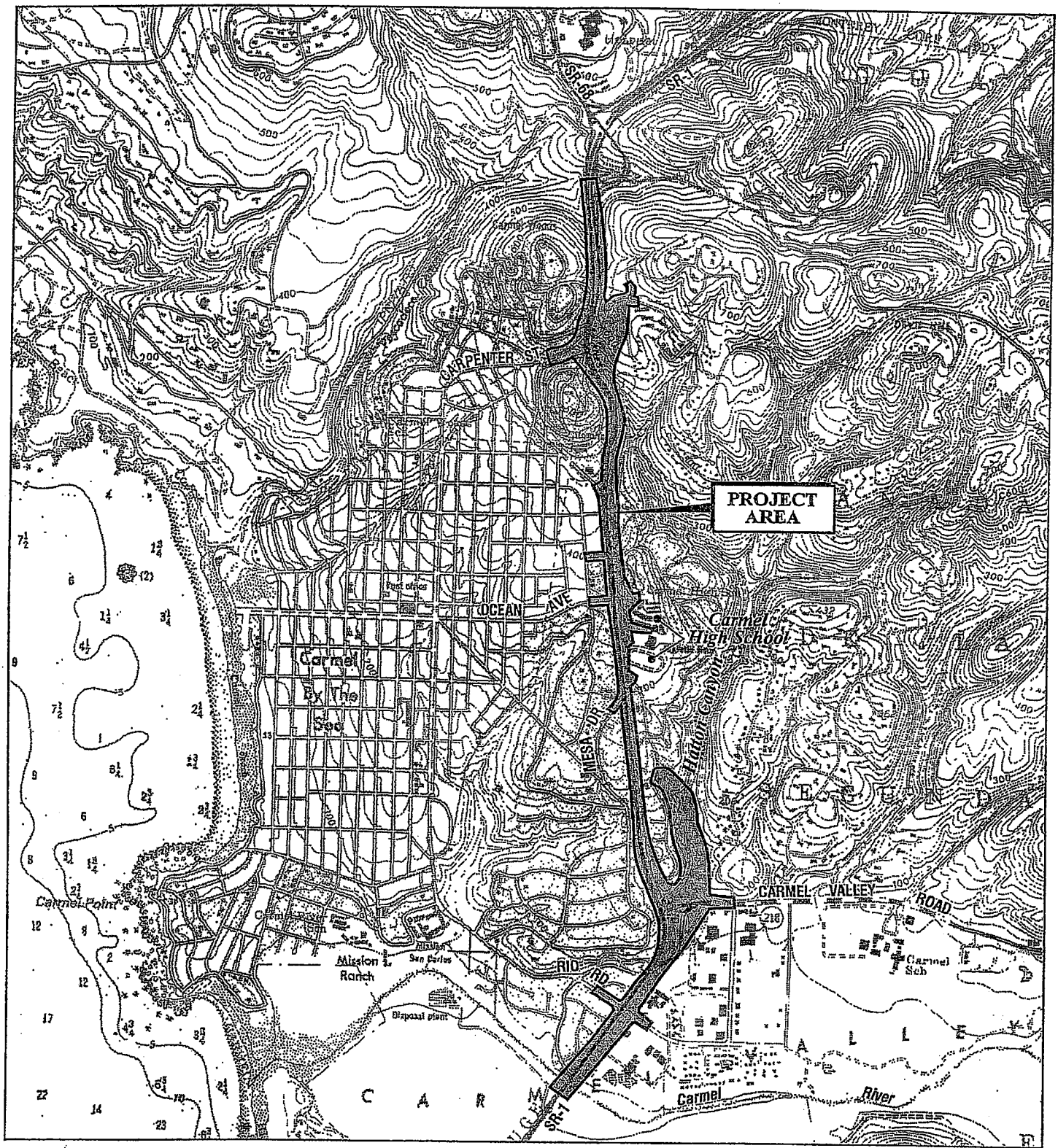
LSA

N

0 3.5 7 MILES
0 1.1 2.2 KILOMETERS

I:\DEC130\G\Regional.cdr(8/29/01)

SR-1 Improvements
Regional Location
KP 116.3/121.0 (PM 72.3/75.2)
EA #05-0C820K
05-MON-1



LSA

FIGURE 2

SR-1 Improvements
Project Vicinity
KP 116.3/121.0 (PM 72.3/75.2)
EA #05-0C820K
05-MON-1

0 1000 2000 FEET
0 305 610 METERS

MAP SOURCE: USGS 7.5' QUAD - MONTEREY, CA.

I:\DEC130\G\Vicinity.cdr(10/16/01)

Field Survey

On May 11, 2001, LSA archaeologist Nicole Wallock completed a field survey of the project area. The entire project area was inspected for cultural resources excluding portions deemed unsafe due to steep topography and high speed traffic.

Cultural resources were observed during the field survey. The area where CA-MNT-290 was recorded is currently under construction, but two large abalone shells were observed on the surface. It appeared as though the shells were uncovered during construction, indicating that the site has not been completely destroyed and that a subsurface deposit may still exist. If the proposed improvements to SR-1 cannot be designed in such a way as to avoid impacts to this site, archaeological testing will need to be conducted. Testing will be undertaken to determine the presence or absence of the site within the Area of Potential Effects. Should cultural materials be observed, they will be used to evaluate the site eligibility for listing on the National Register of Historic Places. If the site will be impacted and is determined eligible, data recovery excavations will need to be conducted prior to construction. Also observed was a portion of the original Carmel River Bridge with the date 1933 stamped into the concrete and a commemorative plaque on an adjacent boulder. This was located on the west side of SR-1, north of the Carmel River. It appears as though this is just outside the current construction limits and should not be impacted by the proposed improvements to SR-1. Should the proposed limits of the project area change, this bridge remnant will need to be evaluated for National Register significance. If displacements occur due to project requirements, buildings and structures within the project area will have to be evaluated as they represent potential historic resources that may be directly or indirectly impacted by the project. Ground visibility in most of the project area was approximately ten percent. In most areas the ground was heavily obscured by tall grasses and vegetation; other areas were obscured by asphalt and concrete. Photographs showing CA-MNT-290 and the Carmel River Bridge can be found in Attachment B.

Recommendations

It is LSA's opinion that, based on the archaeological/historical records search and field survey, there is some likelihood archaeological resources will be encountered during project related construction activities. All construction should be monitored by a qualified archaeologist because there are previously recorded archaeological resources within the project area, and ground visibility during the field survey was low, potentially obscuring other cultural resources. Construction on or adjacent to CA-MNT-290 must be monitored as current site records will need to be updated before the site is destroyed. Buildings within the project right-of-way may be greater than 50 years old. LSA therefore recommends that an historical evaluation of these properties be conducted pursuant to Section 106 of the National Historic Preservation Act.

Sincerely,

LSA ASSOCIATES, INC.

Nicole Wallock
Archaeologist

Attachments: A - Records Search Results
B - Photographs

ATTACHMENT A

RECORDS SEARCH RESULTS

(Note: Confidential site records are on file at LSA Associates, Inc.)

CALIFORNIA
HISTORICAL
RESOURCES
INFORMATION
SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLARA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
1801 East Cotati Avenue
Rohnert Park, California 94928-3609
Tel: 707.664.2494 • Fax: 707.664.3947
E-mail: nwic@sonoma.edu

01-441

Comments: CA-MNT-290 is within/adjacent to the project area. P-27-1736 & 1759; CA-MNT-18 & 188 are within 1/2 mile.

S-5631, 12597, 3310, 7348, 7455, 11274, 10300, 5536 (overview report), 4995, 7775 (overview report), 7853 (overview report), 9817, 22657, 22776, & 3456 are within or adjacent to the project area.
Please refer to the highlighted entries and copies of title pp. for information about reports within 1/2 mile of the project (and references for the above r eports).

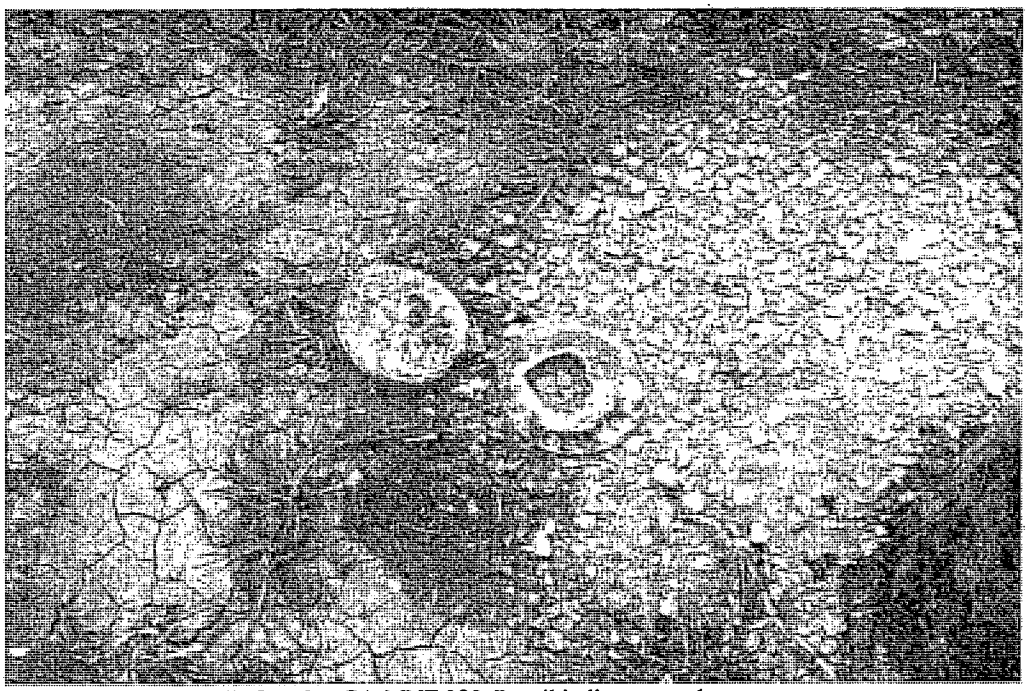
Copied the site record for MNT-290, pertinent historic maps of the area, and the historic inventory indices for Carmel.

Site and study locations are plotted on the enclosed map.

ATTACHMENT B

PHOTOGRAPHS

Overview of CA-MNT-290. View to the north-northeast.



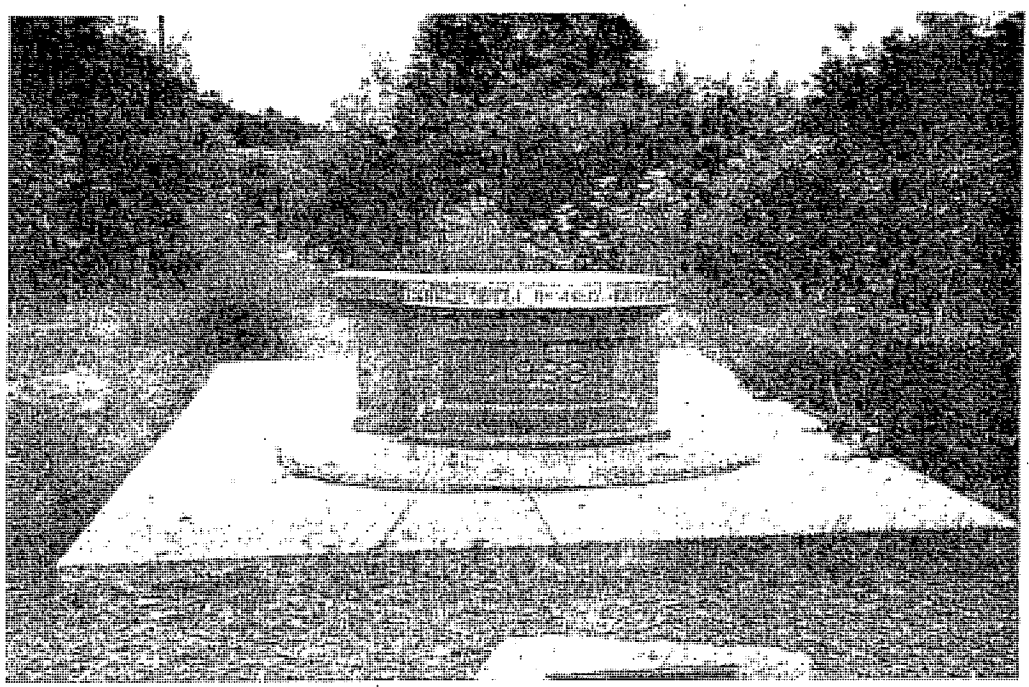
Two large abalone shells found at CA-MNT-290. Pencil indicates north.

ATTACHMENT B

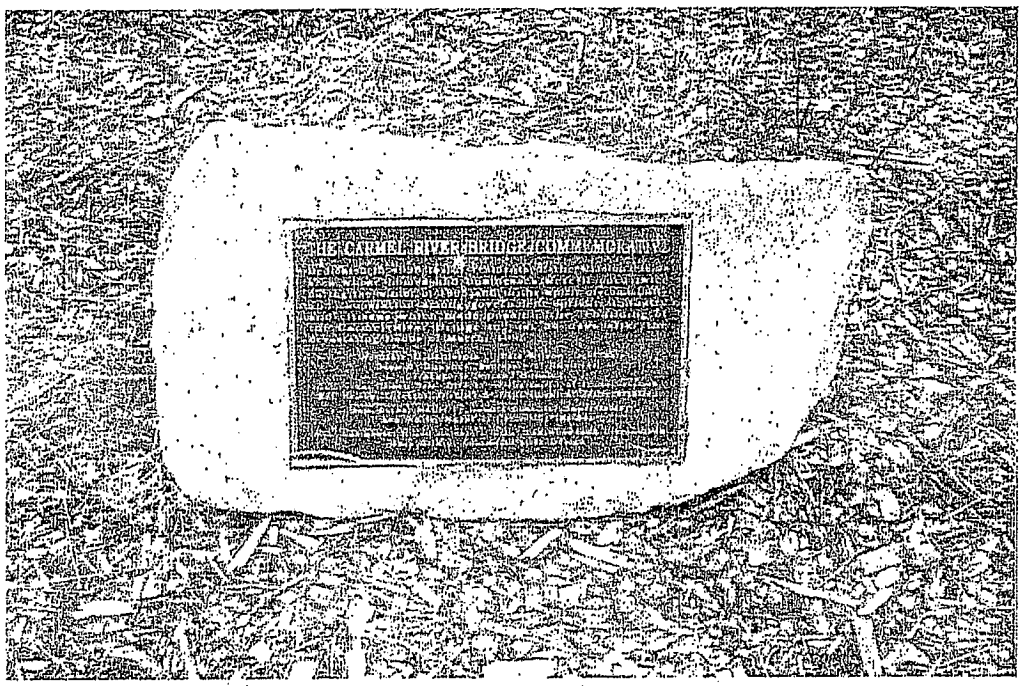
LSA

SR-1 Improvements – Carmel
Site Photos

I:\DEC130\G\Photos-1.cdr(6/21/01)



Remnant of the original Carmel River Bridge. View to the south.



Close-up of the Carmel River Bridge Commerative plaque.

ATTACHMENT B

APPENDIX B

HAZARDOUS WASTE INITIAL SITE ASSESSMENT CHECKLIST

Caltrans Metric

Initial Site Assessment (ISA) Checklist

Project Information

District 5 County Mon Route 1 Kilometer Post 116.3–117.2 (Post Mile 72.3–72.9) EA 05-0L570K

Project Title State Route 1 Operational Improvements from Rio Road to Carmel Valley Road

Description of work: The Transportation Agency for Monterey County (TAMC) is proposing operational improvements to State Route 1 (SR-1) from approximately 226 meters (740 feet) south of Rio Road to Carmel Valley Road, a length of approximately 0.9 kilometer (0.6 mile). The project area is shown in Figure 1, Project Location. The improvements include construction of a northbound truck-climbing lane from Rio Road to Carmel Valley Road. Additional turn lanes would be constructed at the Rio Road intersection (westbound right-turn lane on Rio Road to northbound SR-1 and northbound right-turn lane on SR-1 to westbound Rio Road), and the existing traffic signals would be modified at the SR-1 intersections with Rio Road and Carmel Valley Road.

Is the project on the HW Study Minimal-Risk Project List (HW1)? No

Project Manager Jeffrey Morgan (TAMC) phone # (831) 775-0903

Project Engineer Keith Hallsten (Wood Rodgers Engineering) phone # (916) 341-7760

Project Screening

Attach the project location map to this checklist to show location of all known and/or potential HW sites identified.

1. Project Features: New R/W? Yes Excavation? TBD Railroad Involvement? No
   Structure demolition/modification? No Subsurface utility relocation? TBD

2. Project Setting City of Carmel, existing SR-1, Rio Road, and Carmel Valley Road.
   Rural or Urban Urban.
   Current land uses Existing SR-1, Rio Road, and Carmel Valley Road, including the associated shoulders and right-of-way.
   Adjacent land uses: Major roadways in the project vicinity include SR-1, Rio Road, and Carmel Valley Road. The area west of SR-1, between Carmel Valley Road and Rio Road, contains residential uses. The area east of SR-1, between Carmel Valley Road and Rio Road, contains vacant, undeveloped land and commercial uses, including a Chevron gasoline service station. The area west of SR-1, immediately south of Rio Road, contains vacant, undeveloped land, residential uses, and motels. The area east of SR-1, immediately south of Rio Road, contains vacant, undeveloped land and commercial uses.

3. Check federal, State, and local environmental and health regulatory agency records, as necessary, to see if any known hazardous waste site is in or near the project area. If a known site is identified, show its location on the attached map and attach additional sheets, as needed, to provide pertinent information for the proposed project. IS PROJECT AFFECTING SITES LISTED ON CORTESE LIST ? _Yes_ IF YES, DESCRIBE SITE: Since the project may acquire some right-of-way from the existing Chevron gasoline station, a Leaking Underground Fuel Tank Report was obtained from the State Water Resources Control Board's (SWRCB) Geotracker database (RWQCB Case No. 3013). On October 9, 1989, a gasoline leak was reported to have been stopped. A subsequent gasoline leak was detected October 9, 1998. The most recent entry on the Regulatory History section of the Geotracker report indicates that the Chevron station is currently undergoing regulatory review. The Detailed Release Information section of the Geotracker report indicates that the leaks were caused by product piping failure and that the leak has impacted area groundwater that is not used as a source of drinking water.

Initial Site Assessment (ISA) Checklist (continued)

4. Conduct Field Inspection. Date: October 2, 2004 Use the attached map to locate potential or known HW sites.

STORAGE STRUCTURES / PIPELINE:

Underground tanks Not observed — Surface tanks Observed: gasoline station
Sumps Not observed — Ponds Not observed
Drums Not observed — Basins Not observed
Transformers Power pole mounted transformers — Landfill Not observed
Other Not observed

CONTAMINATION: (spills, leaks, illegal dumping, etc.)

Surface staining Minor surface staining on pavement
Odors Not detected — Oil sheen Not observed
Vegetation damage Not observed
Other Observed: dumping of building materials in vacant, undeveloped parcel (designated as State Park land) located at the southeast quadrant of the SR-1/Carmel Valley Road intersection.

HAZARDOUS MATERIALS: (asbestos, lead, etc.)

Buildings N/A — Spray-on fireproofing N/A
Pipe wrap N/A — Friable tile N/A
Acoustical plaster N/A — Serpentine N/A
Paint N/A — Other N/A

5. Additional record search, as necessary, of subsequent land uses that could have resulted in a hazardous waste site. Use the attached map to show the location of potential hazardous waste sites. (See Table B, Figure 2, and Appendix A of this ISA.)

6. Other comments and/or observations: _____

ISA Determination

Does the project have potential hazardous waste involvement? *Yes* If there is known or potential hazardous waste involvement, is additional ISA work needed before task orders can be prepared for the Preliminary Site Investigation? *No* If "YES," explain; then give an estimate of additional time required:

A brief memo should be prepared to transmit the ISA conclusions to the Project Manager and Project Engineer.

ISA Conducted by Noel Legaspi — **Date** 10/7/04
Noel Legaspi, LSA Associates, Inc.

ISA Reviewed by Lisa D. Williams — **Date** 10/7/04
Lisa D. Williams, REHS, REA, LSA Associates, Inc.

APPENDIX C

BIOLOGICAL RESOURCES SCREENING

LSA

LSA ASSOCIATES, INC.
ONE PARK PLAZA, SUITE 500
IRVINE, CALIFORNIA 92614

949.553.0666 TEL
949.553.8076 FAX

OTHER OFFICES: FT. COLLINS
BERKELEY RIVERSIDE
PT. RICHMOND ROCKLIN

October 17, 2001

Ali Hemmati
Dokken Engineering
140 Central Avenue
Salinas, CA 93901

Subject: Preliminary Biological Assessment for the State Route 1 Improvements in Monterey County, California

Dear Mr. Hemmati:

LSA Associates, Inc. (LSA) is submitting this preliminary screening analysis of the potential biological constraints associated with the State Route 1 (SR-1) improvements between State Route 68 (SR-68) and the Carmel River Bridge in Monterey County, California. This letter report includes a complete biological record search, a field reconnaissance survey to evaluate the current habitat conditions, and observations of plant and animal species occurring within the proposed project area. Results of the record searches, field survey, and recommendations are included in this letter report.

GENERAL PROJECT DESCRIPTION

The Transportation Agency for Monterey County (TAMC), in cooperation with the California Department of Transportation (Caltrans), proposes improvements along 4.7 kilometers (2.9 miles) of SR-1 between the SR-68 interchange and the Carmel River Bridge. The improvements involve widening existing SR-1 to four travel lanes and partial realignment. The widening will occur on the west and east sides of the road from 0.45 kilometer (0.28 mile) south of the SR-68 interchange to 0.16 kilometer (0.1 mile) south of the Carmel River Bridge. Please refer to Figure 1, Regional Location.

The study area covers a 4.7 kilometer (2.9 mile) segment of SR-1 and a 402.35 meter (one-quarter mile) radius surrounding SR-1. The following streets intersect SR-1 within the study segment and are included in the study: San Luis Avenue, Carpenter Street, Handly Drive, Valley Way, Third Avenue, Flanders Drive, Mesa Drive, Morse Drive, Atherton Drive, Carmel Valley Road, Rio Road, and Oliver Road. The study area also covers a portion of Hatton Canyon, located east of SR-1, where alternatives are considered. An approximately 488 meter (1,600 foot) length of Hatton Canyon, north of Carmel Valley Road, was included in the records search and visual survey.

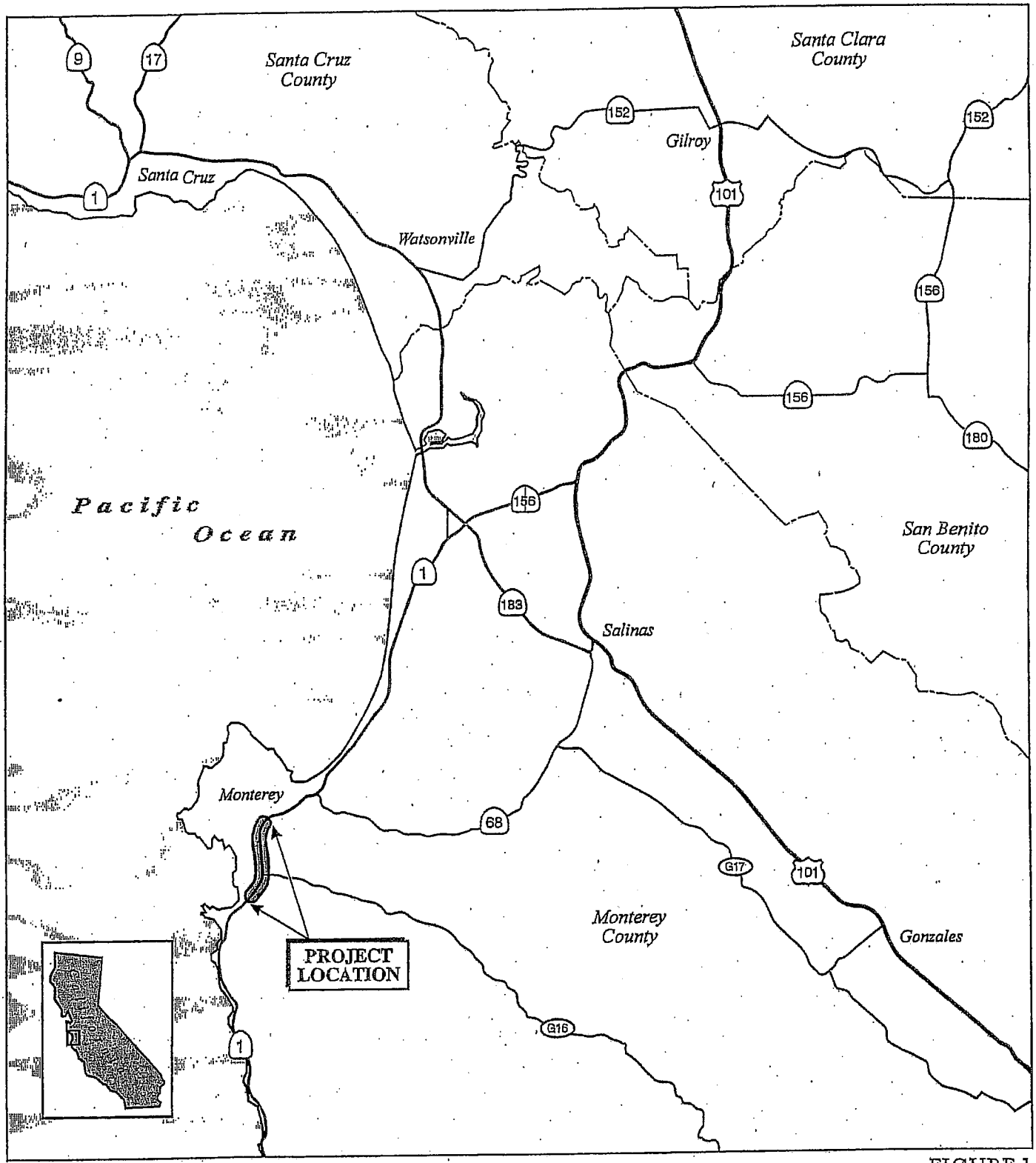


FIGURE 1

LSA

N

0 3.5 7 MILES
0 1.1 2.2 KILOMETERS

SR-1 Improvements
Regional Location
KP 116.3/121.0 (PM 72.3/75.2)
EA #05-0C820K
05-MON-1

I:\DEC130\G\Regional.cdr(8/29/01)

METHODS

LSA conducted a standard literature review, which included a records search, for the project area (United States Geological Survey [USGS] 7.5 quadrangle for Monterey and Soberanes Point). The record search included the California Natural Diversity Data Base (CNDDB, California Department of Fish and Game [CDFG] 2000) and a review of the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2000). Table A includes a summary of findings from the CNDDB and CNPS lists.

LSA biologist Kimberly Peterson surveyed the area on June 11-12, 2001. The area was assessed by driving SR-1 and surveying on foot ruderal and native habitat within the project area. Photographs were taken of densely vegetated areas and locations possibly containing sensitive plants and/or animals (Figures 2 and 3).

RESULTS

Several natural plant communities are present in the proposed SR-1 project area; closed-cone coniferous forest, specifically Monterey pine *(Pinus radiata)* forest, mixed oak-woodland, bramble thicket, and a riparian corridor. The remaining portions within the SR-1 project area can be described as ruderal vegetation. Horticultural plantings are also present on various portions of the site. Attachment A contains a complete list of all plants observed during the field survey.

Closed-Cone Coniferous Forest

The site is located within a disturbed and degraded urbanized area of remnant Monterey pine forest. The canopy cover ranges from relatively open to closed. The majority of the trees are mature pines, naturally occurring and varying in size from 1.3 meters (4 feet) tall saplings to mature trees up to 30 meters (100 feet) in height. The saplings are present among the mature trees and constitute part of the woody understory. Mature Monterey cypress (*Cupressus macrocarpa*) are intermittently scattered along SR-1 and some are as tall as 18 meters (60 feet) tall. The shrubby and herbaceous understory is sparse where the canopy cover is relatively extensive.

Mixed Oak-Woodland

At the proposed interchange east of Carpenter Drive/High Meadows Drive and SR-1 intersection, mature and young individuals of coast live oak (*Quercus agrifolia*) are interspersed among Monterey pine. The coast live oaks vary in size from seedlings to six meters (20 feet) tall.

Table A: Special Interest Plant and Animal Species near the Project Site

Species	Designation	Preliminary Analysis of Occurrence Probability
ANIMAL		
California red-legged frog (*Rana aurora daytonit*)	US: Threatened CA: SA	Low-Moderate: Conditions on site may be suitable for this species but only near the Carmel River edge.
Southern steelhead (*Oncorhynchus mykiss irideus*)	US: Threatened CA: SA	High: This species has been observed in the Carmel River.
California brown pelican (*Pelecanus occidentalis californicus*)	US: Endangered CA: Endangered	Low: Habitat on site is not suitable for this species
Western snowy plover (*Charadrius alexandrinus nivosus*)	US: Threatened CA: SA	Low: Habitat on site is not suitable for this species.
Smith's blue butterfly (*Euphilotes enoptes smithi*)	US: Endangered CA: SA	Moderate: Habitat on site may be suitable for this species. However, the larval and adult food plants were not observed at the time of the site visit.
Monarch butterfly (*Danaus plexippus*)	US: None CA: SA	High: Because of restricted winter roosting sites for this species, it is listed by the State as a Special Animal. Wind protected groves of Monterey pines were observed on site. These pines may provide suitable roosting habitat for this species.
PLANT		
Beach layia (*Layia carnosa*)	US: Endangered CA: Endangered CNPS: 1B	Low: Habitat on site is not suitable for this species.
Menzies's wallflower (*Erysimum menziesii* ssp. *menziesii*)	US: Endangered CA: Endangered CNPS: 1B	Low: Habitat on site is not suitable for this species.
Coastal dunes milk-vetch (*Astragalus tener* var. *titi*)	US: Endangered CA: Endangered CNPS: 1B	Low: Habitat on site may be suitable for this species; however, none were observed at the time of the site visit.

Species	Designation	Preliminary Analysis of Occurrence Probability
Tidestrom's lupine (*Lupinus tidestromii)*	US: Endangered CA: Endangered CNPS: 1B	Low: Habitat on site is not suitable for this species.
Pacific grove clover *(Trifolium polyodon)*	US: None CA: Rare CNPS: 1B	High: Habitat on site is suitable for this species.
Monterey clover *(Trifolium trichocalyx)*	US: Endangered CA: Endangered CNPS: 1B	High: Habitat on site is suitable for this species.
Monterey spineflower *(Chorizanthe pungens* var *pungens)*	US: Threatened CA: SP CNPS: 1B	Moderate: Suitable conditions for this species are present in some areas of the site.
Robust spineflower *(Chorizanthe robusta* var *robusta)*	US: Endangered CA: SP CNPS: 1B	Low: Conditions on site are not suitable for this species.
Sand gilia (*Gilia tenuiflora* ssp *arenaria)*	US: Endangered CA: Threatened CNPS: 1B	Low: Conditions on site are not suitable for this species.
Hickman's cinquefoil *(Potentilla hickmanii)*	US: Endangered CA: Endangered CNPS: 1B	High: Habitat on site is suitable for this species.
Gowen cypress (Cupressus goveniana ssp *goveniana)*	US: Threatened CA: SP CNPS: 1B	High: Habitat on site is suitable for this species.
Yadon's rein orchid *(Piperia yadonii)*	US: Endangered CA: SP CNPS: 1B	High: Habitat on site is suitable for this species.
Hickman's onion *(Allium hickmanii)*	US: None CA: Rare CNPS: 1B	Low-Moderate: Habitat on site is suitable for this species. However, this species is known from fewer than twenty occurrences.
Little Sur manzanita *(Arctostaphylos edmundsii)*	US: None CA: Rare CNPS: 1B	Low: Habitat on site is not suitable for this species.
Sandmat manzanita *(Arctostaphylos pumila)*	US: None CA: SP CNPS: 1B	Moderate-High: Habitat on site is suitable for this species. However, this species is known from fewer than twenty occurrences.

Species	Designation	Preliminary Analysis of Occurrence Probability
Seaside bird's-beak *(Cordylanthus rigidus* ssp *littoralis)*	US: None CA: Endangered CNPS: 1B	High: Habitat on site is suitable for this species.
Monterey cypress *(Cupressus macrocarpa)*	US: None CA: SP CNPS: 1B	Observed: This species was observed within the project area at the time of the site visit.
Hutchinson's larkspur *(Delphinium hutchinsoniae)*	US: None CA: SP CNPS: 1B	Low-Moderate: Habitat on site is suitable for this species.
Eastwood's goldenbush *(Ericameria fasciculata)*	US: None CA: SP CNPS: 1B	High: Habitat on site is suitable for this species.
Fragrant fritillary *(Fritillaria liliacea)*	US: None CA: SP CNPS: 1B	Low: Habitat on site may be suitable for this species.
San Francisco gumplant *(Grindelia hirsutula* var *maritima)*	US: None CA: SP CNPS: 1B	Low-Moderate: Habitat on site may be suitable for this species.
Kellogg's horkelia *(Horkelia cuneata* ssp *sericea)*	US: None CA: SP CNPS: 1B	Moderate-High: Habitat on site is suitable for this species.
Jone's layia *(Layia jonesii)*	US: None CA: SP CNPS: 1B	Low: Conditions on site are not suitable for this species.
Carmel Valley bush mallow *(Malacothamnus palmeri* var *incolucratus)*	US: None CA: SP CNPS: 1B	Low: Habitat on site may be suitable for this species.
Monterey pine *(Pinus radiata)*	US: None CA: SP CNPS: 1B	Observed: This species was observed within the project area at the time of the site visit.

Notes:

1. For a description of status designations see Legend on following page.
2. Based on the following categories: **Absent; Low; Moderate; High; Observed.**

Legend: Status Designation

FEDERAL CLASSIFICATIONS

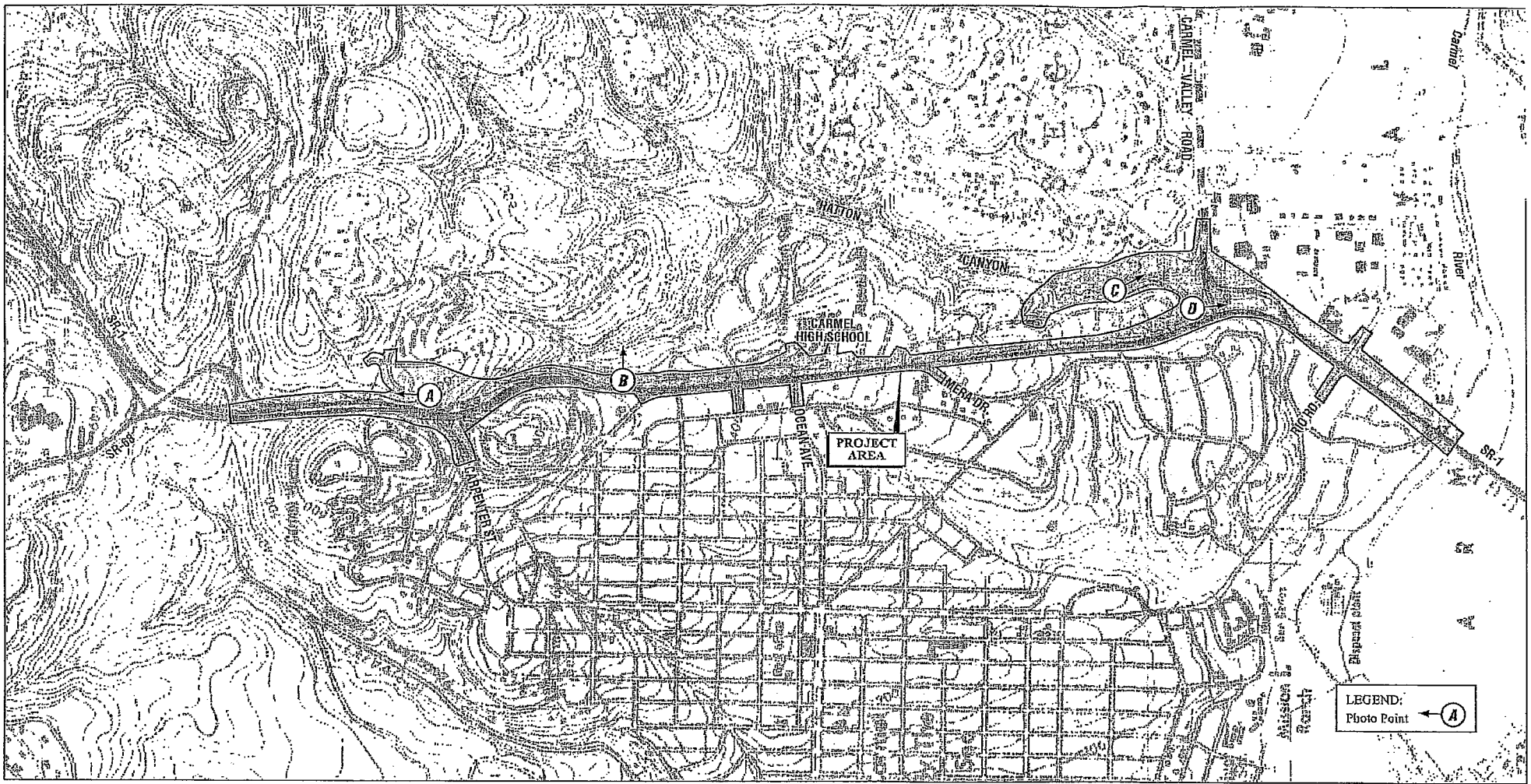
END	Federally listed as Endangered.
THR	Federally listed as Threatened.
P END	Federally proposed as Endangered.
P THR	Federally proposed as Threatened.
C	Candidate for federal listing. Taxa for which the U.S. Fish and Wildlife Service (USFWS) has sufficient information available to support a proposal to list as Endangered or Threatened. Issuance of the proposal(s) is anticipated, but precluded at this time.

STATE CLASSIFICATIONS

END	State listed as Endangered.
THR	State listed as Threatened.
RARE	State listed as Rare.
CFP	California Fully Protected. Taxa legally protected under special legislation enacted prior to the California Endangered Species Act.
C END	State candidate for listing as Endangered.
C THR	State candidate for listing as Threatened.
C RARE	State candidate for listing as Rare.
CSC	California Species of Special Concern. Taxa with populations declining seriously or otherwise highly vulnerable to human developments.
SA	Special Animal. Taxa of concern to the Natural Diversity Data Base regardless of their legal or protection status.
SP	Special Plants. Taxa of concern to the Natural Diversity Data Base regardless of their legal or protection status.

CALIFORNIA NATIVE PLANT SOCIETY (CNPS) CLASSIFICATIONS

1A	List of plants that are presumed extinct in California.
1B	List of plants that are considered by the California Native Plant Society (CNPS) to be Rare, Threatened, or Endangered in California and elsewhere.
2	List of plants that are considered by CNPS to be Rare, Threatened, or Endangered in California, but more common elsewhere.
3	CNPS review list of plants suggested for consideration as Endangered but about which more information is needed.
4	CNPS watch list of plants of limited distribution, whose status should be monitored.



LSA

FIGURE 2

N

0 500 1000 FEET

0 150 300 METERS

MAP SOURCE: USGS 7.5' QCAD - MONTEREY, CA

I:\DEC1305\G\Photo Points.cdr (9/30/03)

SR-1 Improvements

Photo Point Locations

Photo A: Mixed oak woodland located east of Carpenter Street/High Meadows Drive and SR-1 intersection.

Photo B: Bramble thicket at the edge of closed-cone coniferous forest. Photo taken south of Handley Drive and SR-1 intersection on the east side of SR-1.

Photo C: Overview of riparian habitat in Hatton Canyon. Looking southeast over canyon.

Photo D: Overview of riparian habitat located southeast from the corner of Carmel Valley Road and SR-1.

LSA

FIGURE 3

SR-1 Improvements

Photo Points of Habitat Types Within the SR-1 Project Area

I:\DEC130\GI\Photos A B C & D.cdr (8/24/01)

Riparian Corridor

A riparian corridor extends from just south of the intersection at Carmel Valley Road and SR-1 and continues north through Hatton Canyon. This area is dominated by Goodding's black willow (*Salix gooddingii*), red willow (*Salix laevigata*), coyote bush (*Baccharis pilularis)*, mugwort (*Artemisia douglasiana*), and hoary nettle (*Urtica dioica* ssp. *holosericea*).

Bramble Thicket

A substantial bramble thicket at the edge of the closed-cone coniferous forest is located east of SR-1, and just south of the intersection at Handley Drive and SR-1. Dominated by California blackberry (*Rubus ursinus*), this unnamed tributary of Hatton Canyon appears to stay moist throughout most of the year due to the topography and runoff from SR-1 and the adjacent urban development.

Ruderal Habitat

The roadside and heavily disturbed areas of the project area are dominated by ruderal species that include cheeseweed (*Malva parviflora*), long-beaked filaree (*Erodium botrys*), California burclover (*Medicago polymorpha*), yellow sweet clover (*Melilotus indica*), wild radish (*Raphanus sativus*), German ivy (*Senecio mikanioides*), French broom (*Cytisus monspessulanus*), ripgut brome (*Bromus diandrus*), slender wild oat (*Avena barbata*), and quaking grass (*Briza maxima*).

Special Interest Species

Of the 25 potential special interest plant species listed in Table A, only Monterey pine and Monterey cypress were observed during the field survey. The ruderal and disturbed areas along SR-1 are less than ideal for any of the plant species listed in the CNDDB. Some undisturbed native plant communities, such as the oak woodland and riparian habitat areas, do exist within the boundaries of the project area. These areas should be considered more carefully during the appropriate survey season throughout the year to determine whether any special interest species are present.

Special interest wildlife species considered for this assessment include: California red-legged frog (*Rana aurora daytonii*), southern steelhead (*Oncorhynchus mykiss irideus*), California brown pelican (*Pelecanus occidentalis californicus)*, western snowy plover (*Charadrius alexandrinus nivosus*), Smith's blue butterfly (*Euphilotes enoptes smithi*), and monarch butterfly (*Danaus plexippus*). None of the special interest species were observed during the June, 2001, field survey.

The California red-legged frog and the southern steelhead have the potential to inhabit the Carmel River. The southern steelhead is known to historically inhabit the Carmel River at the southernmost end of the site. Although the proposed project is adjacent to and not within the Carmel River, potential indirect impacts to the California red-legged frog or the southern steelhead may be incurred with the proposed project.

Smith's blue and monarch butterfly may occur within the project area. Wind protected groves of Monterey pines can provide suitable roosting habitat for monarch butterfly. Focused surveys to determine the presence or absence of these sensitive butterflies and to identify potential roosting sites and nectar sources should be considered prior to commencement of the proposed project.

Habitat conditions on site are not conducive for California brown pelican or western snowy plover. These species are not expected to occupy the site.

More thorough surveys would likely result in identification of a greater number of animal species on the site, particularly common mammals and bird species. Animals observed during the field visit are listed in Attachment A.

RECOMMENDATIONS

During the project's environmental document phase, a Natural Environmental Study (NES) should be prepared. As part of the NES, a more thorough general survey and focused surveys for California red-legged frog, southern steelhead, Smith's blue butterfly, and monarch butterfly should be conducted for the possible presence of these species within the area potentially affected by the project. Focused surveys for special interest plants should be performed during the appropriate seasons to determine their possible occurrence within the project area.

A wetland/waters jurisdictional analysis should also be conducted to determine whether the riparian areas within and adjacent to Hatton Canyon are subject to U.S. Army Corps of Engineers or CDFG jurisdiction as waters of the United States or waters of the State, respectively.

Sincerely,

LSA ASSOCIATES, INC.

Kimberly Peterson
Project Biologist

ATTACHMENT A

PLANT AND ANIMAL SPECIES OBSERVED

VASCULAR PLANT SPECIES OBSERVED

The following plant species were observed on the project site by an LSA biologist during the current study.

* Introduced, nonnative species

ANGIOSPERMAE: DICOTYLEDONAE	DICOT FLOWERING PLANTS
Apiaceae	**Carrot Family**
Asteraceae	**Sunflower Family**
* *Centaurea melitensis*	Tocalote
Gnaphalium californicum	California everlasting
Heterotheca grandiflora	Telegraph weed
Boraginaceae	**Borage Family**
Amsinckia menziesii var. *intermedia*	Common fiddleneck
Brassicaceae	**Mustard Family**
* *Brassica nigra*	Black mustard
* *Sisymbrium irio*	London rocket
Chenopodiaceae	**Goosefoot Family**
* *Atriplex semibaccata*	Australian saltbush
* *Chenopodium album*	Lamb's quarters
Fabaceae	**Legume Family**
Hoffmannseggia glauca	Pig-nut
* *Medicago sativa*	Alfalfa
Geraniaceae	**Geranium Family**
* *Erodium cicutarium*	Red-stemmed filaree
Juglandaceae	**Walnut Family**
Juglans sp.	Pecan tree
Malvaceae	**Mallow Family**
* *Malva neglecta*	Common mallow
* *Malva parviflora*	Cheeseweed
Polygonaceae	**Buckwheat Family**
* *Polygonum arenastrum*	Common knotweed

Solanaceae	**Nightshade Family**
* *Solanum eleagnifolium*	Silverleafe nettle
ANGIOSPERMAE: MONOCOTYLEDONAE	MONOCOT FLOWERING PLANTS
Cyperaceae	**Sedge Family**
Carex sp.	Sedge
Poaceae	**Grass Family**
* *Avena* sp.	Wild oat
* *Bromus* sp.	Ripgut grass

Taxonomy and scientific nomenclature conform to Hickman (1993); common names primarily follow Roberts (1989).

ANIMAL SPECIES OBSERVED

This is a list of the butterflies, birds and mammals noted in the study area by LSA biologist Kimberly Peterson during a survey conducted during June 11-12, 2001. Presence may be noted if a species is seen or heard, or identified by the presence of tracks, scat or other signs.

* Introduced species

LEPIDOPTERA	**BUTTERFLIES**
Papilionidae	**Swallowtails**
Papilio rutulus rutulus	Western tiger swallowtail
Nymphalidae	**Brush-footed Butterflies**
Precis coenia	Buckeye
REPTILIA	**REPTILES**
Colubridae	**Colubrid Snakes**
Pituophis melanoleucus	Gopher snake
AVES	**BIRDS**
Odontophoridae	**New World Quail**
Callipepla californica	California quail
Laridae	**Jaegers, Gulls and Terns**
Larus delawarensis	Ring-billed gull
Columbidae	**Pigeons and Doves**
* *Columba livia*	Rock dove
Strigidae	**Typical Owls**
Bubo virginianus	Great horned owl
Trochilidae	**Hummingbirds**
Calypte anna	Anna's hummingbird
Picidae	**Woodpeckers**
Melanerpes formicivorus	Acorn woodpecker
Corvidae	**Jays, Magpies and Crows**
Aphelocoma californica	Western scrub-jay
Corvus brachyrhynchos	American crow

Hirundinidae	**Swallows**
Stelgidopteryx serripennis	N. rough-winged swallow
Petrochelidon pyrrhonota	Cliff swallow
Aegithalidae	**Bushtits**
Psaltriparus minimus	Bushtit
Timaliidae	**Babblers**
Chamaea fasciata	Wrentit
Mimidae	**Mimic Thrushes**
Mimus polyglottos	Northern mockingbird
Sturnidae	**Starlings**
* *Sturnus vulgaris*	European starling
Emberizidae	**New World Sparrows**
Pipilo crissalis	California towhee
Melospiza melodia	Song sparrow
Chondestes grammacus	Lark sparrow
Icteridae	**American Orioles**
Euphagus cyanocephalus	Brewer's blackbird
Fringillidae	**Fringillid Finches**
Carpodacus mexicanus	House finch
Carduelis tristis	American goldfinch
Passeridae	**Old World Sparrows**
* *Passer domesticus*	House sparrow
MAMMALIA	MAMMALS
Leporidae	**Rabbits and Hares**
Lepus californicus sp.	Black-tailed jackrabbit
Cricetidae	**Cricetid Rodents**
Neotoma fuscipes	Dusky-footed woodrat
Canidae	**Foxes, Wolves and Allies**
Canis latrans	Coyote (scat)
Cervidae	**Deer, Elk, and Allies**
Odocoileus hemionus	Mule deer (tracks and scat)

Taxonomy and nomenclature follow Mattoni (1990. Butterflies of Greater Los Angeles. Center for Conservation of Biodiversity/Lepidoptera Research Foundation, Los Angeles.), Laudenslayer et. al. (1991. A checklist of the amphibians, reptiles, birds, and mammals of California. California Fish and Game 77:109-141.), and the American Ornithologists' Union (1998. The A.O.U. Checklist of North American Birds, 7th Ed. American Ornithologists' Union, Washington D.C.).

ATTACHMENT B

REFERENCES

LITERATURE CITED

Abrams, L. 1923 (v. I), 1944 (v. II), 1951 (v. III). *Illustrated Flora of the Pacific States; Washington, Oregon, and California*, vols. I-III. Stanford University Press, Stanford, CA.

Abrams, L. and R.S. Ferris. 1960. *Illustrated Flora of the Pacific States; Washington, Oregon, and California*, vol. IV. Stanford University Press, Stanford, CA.

American Ornithologists' Union. 1998. Check-list of North American Birds. 7th edition. American Ornithologists' Union, Washington, D.C.

California Department of Fish and Game, Natural Heritage Division, Natural Diversity Data Base (CNDDB). 2000. *RareFind II.* Records search executed May 18, 2001, covering the Monterey, and Soberanes Point USGS quadrangles. The Resources Agency, Sacramento, CA.

Hickman, J.C., (ed.). 1993. The Jepson Manual: Higher Plants of California. University of California Press, Berkeley.

Laudenslayer, W.F., Jr., W.E. Grenfell, Jr., and D.C. Zeiner. 1991. A checklist of the amphibians, reptiles, birds, and mammals of California. California Fish and Game 77:109-141.

Munz, P.A. 1974. A Flora of Southern California. University of California Press, Berkeley.

Skinner, M.W. and B.M. Pavlik, eds. 200. *Inventory of Rare and Endangered Vascular Plants of California.* California Native Plant Society Special Publication No.1 (Fifth Edition, 2000 Electronic Inventory update). Sacramento, CA. vi + 338 pp.

Exhibit E – Traffic Operations Technical Memorandum

Technical Memorandum

WOOD RODGERS
ENGINEERING ▪ PLANNING ▪ MAPPING ▪ SURVEYING

Job No.: 8086.002

☒ For Your Use
☒ For Your Review
☐ For Your Information

To: **PDT Members**
David Rasmussen, Wayne Mills, Paul McClintic – Caltrans District 5
Enrique Saavedra – Monterey County Department of Public Works
Bill Reichmuth, Jeff Morgan – TAMC
Ali Hemmati, Keith Hallsten – Wood Rodgers, Inc.

From: Ravi Narayanan, P.E. – Wood Rodgers, Inc.

Date: 04/22/2004

File: 8086_TrafOpsMem01.doc

Project: SR 1 – Rio Road thru Carmel Valley Rd. PSR [05-MON-001, KP 116.3 - 117.2, (PM 72.3 - 72.9)]

Re: **Traffic Operations Analysis**

INTRODUCTION AND BACKGROUND

The Transportation Agency for Monterey County (TAMC) has initiated a focused *Project Study Report* (PSR) process for the construction of operational improvements to the segment of State Route 1 (SR 1) between Rio Road and Carmel Valley Road, near the City of Carmel, in Monterey County. The PSR process was formally kicked-off in March 2004, with a Project Development Team (PDT) meeting between representatives of Caltrans District 5, TAMC and Monterey County. TAMC, serving as the lead agency for this PSR, has retained Wood Rodgers, Inc. to complete the PSR engineering design as well as the supporting traffic operational analysis. As part of and in support of the PSR study, Wood Rodgers has prepared this "Traffic Operations Technical Memorandum" in order to present our analysis and evaluation of traffic operating conditions for the subject SR 1 study segment under conditions both without and with the recommended PSR improvements.

A *Project Study Report/Project Development Support* (PSR/PDS) study for the segment of SR 1 between the Carmel River Bridge and State Route 68 West was completed and approved by Caltrans District 5 in December 2001. The 2001 PSR/PDS studied and evaluated conceptual improvement alternatives for the current study segment on SR 1, among other segments. The current PSR is essentially a procedural study for programming construction funds for operational improvements in the focused SR 1 study segment now under evaluation. Based on our background data review and PDT discussions, Wood Rodgers has determined that the traffic volumes, demand forecasts and other background transportation planning data utilized/developed as part of the 2001 PSR/PDS effort continue to be largely applicable in the current PSR study. Therefore, this current PSR study extensively references, utilizes and builds off of traffic forecast data already developed as part of the 2001 PSR/PDS.

SETTING

Monterey County is located on the Central Coast of California, approximately 100 miles south of the San Francisco Bay Area. Monterey County, which falls within the jurisdiction of Caltrans District 5, is bounded by Santa Cruz County to the north, San Luis Obispo County to the south, San Benito County to the east and the Pacific Ocean to the west. The study segment of SR 1 lies within the southeastern vicinity of Carmel-by-the-Sea, which is a coastal incorporated community located on the southern edge of Monterey Bay within the northwestern portion of Monterey County.

Appendix Figure 1 illustrates the project location and vicinity map. The following describes the study area roadway system.

State Route 1 (SR 1) is a state highway that runs along California's Pacific coastline, and represents an important recreational as well as commuter travel route serving California's coastal communities. In the federal route classification system, SR 1 is considered an urbanized principal arterial and is included in the National Highway System (NHS). SR 1 is a designated "Scenic Highway" in the state route classification system. Within Monterey County, SR 1 provides connection between Monterey Bay to the north and the Big Sur and Los Padres National Forest areas to the south. Through the study segment, SR 1 represents a commuter as well as tourist route connecting Carmel and Monterey communities. SR 1 is a two-lane arterial through the study segment. According to *2002 Average Daily Traffic Volumes on California State Highways* (published on Caltrans website), SR 1 carries an Annual Average Daily Traffic (AADT) of approximately 25,500 vehicles between the intersections of Rio Road and Carmel Valley Road. According to *2002 Annual Average Daily Truck Traffic on the California State Highway System* (also published on Caltrans website), trucks comprise approximately 3.9% of the average daily traffic through the SR 1 study segment.

Rio Road is an east-west two-to-four lane arterial type roadway that connects the residential and commercial areas in the Carmel Valley across the SR 1 study segment to the Carmel shopping district to the west. To the west of SR 1, Rio Road extends as Junipero Street into Carmel-by-the-Sea. Within the SR 1 study segment vicinity, Rio Road provides access to/from the Barnyard and Crossroads Shopping Centers, both located on the east side of the SR 1/Rio Road intersection. The SR 1/Rio Road intersection is a four-legged intersection, with a regular eight-phase traffic signal.

Carmel Valley Road is a County roadway that runs in a general northwesterly to southeasterly direction, connecting between SR 1 and the Carmel Valley area to the southeast. Carmel Valley Road has a four-lane undivided arterial cross-section, just east of the signalized T-intersection with SR 1. The westbound left-turn movement from Carmel Valley Road to southbound SR 1 is currently prohibited, with this traffic movement directed south to Rio Road via Carmel Rancho Boulevard which runs parallel to the SR 1 study segment.

ANALYSIS METHODOLOGY

In this analysis, traffic operations have been quantified through the computation of "Level of Service" (LOS). Level of Service is a qualitative measure of traffic operating conditions, used as an industry standard for quantifying transportation facility operations, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment, representing progressively worsening traffic operations.

In this study, Levels of Service have been computed using methods documented in the Transportation Research Board (TRB) Publication *Highway Capacity Manual, Fourth Edition, 2000* (referred to as HCM-2000). For signalized intersections and all-way-stop-controlled (AWSC) intersections, the intersection delays and LOS reported are the average values for the whole intersection, computed based on HCM-2000. For two-way-stop-controlled (TWSC) intersections, the average delays and LOS are reported for the "worst-case" movement, computed based on HCM-2000. The delay-based LOS criteria for different types of intersection control are outlined in Table 1. The speed-based urban arterial segment LOS thresholds, also from HCM-2000, are shown in Table 2.

TABLE 1
HCM-2000 BASED LEVEL-OF-SERVICE DEFINITIONS AND CRITERIA FOR INTERSECTIONS

Level of Service	Flow Type	Operational Characteristics	Intersection Control Delay (seconds/vehicle)	
			Signal Control	Two-Way-Stop or All-Way Stop Control
"A"	Stable Flow	Free-flow conditions with negligible to minimal delays. Excellent progression with most vehicles arriving during the green phase and not having to stop at all. Nearly all drivers find freedom of operation.	≤ 10	0 – 10
"B"	Stable Flow	Good progression with slight delays. Short cycle-lengths typical. Relatively more vehicles stop than under LOS "A". Vehicle platoons are formed. Drivers begin to feel somewhat restricted within groups of vehicles.	> 10 – 20	> 10 – 15
"C"	Stable Flow	Relatively higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear. The number of vehicles stopping is significant, although many still pass through without stopping. Most drivers feel somewhat restricted.	> 20 – 35	> 15 – 25
"D"	Approaching Unstable Flow	Somewhat congested conditions. Longer but tolerable delays may result from unfavorable progression, long cycle lengths, and/or high volume-to-capacity ratios. Many vehicles are stopped. Individual cycle failures may be noticeable. Drivers feel restricted during short periods due to temporary back-ups.	> 35 – 55	> 25 – 35
"E"	Unstable Flow	Congested conditions. Significant delays result from poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures occur frequently. There are typically long queues of vehicles waiting upstream of the intersection. Driver maneuverability is very restricted.	> 55 – 80	> 35 – 50
"F"	Forced Flow	Jammed or grid-lock type operating conditions. Generally considered to be unacceptable for most drivers. Zero or very poor progression, with over-saturation or high volume-to-capacity ratios. Several individual cycle failures occur. Queue spillovers from other locations restrict or prevent movement.	> 80	> 50

TABLE 2
HCM-2000 BASED LEVEL-OF-SERVICE (LOS) CRITERIA FOR ROADWAY SEGMENTS

Urban Street Class	I	II	III	IV
Free Flow Speed Range	55-45 mph	45-35 mph	35-30 mph	30-25 mph
Typical Free Flow Speed	50 mph	40 mph	35 mph	30 mph
LOS	Average Travel Speed (mph)			
A	> 42	> 35	> 30	> 25
B	34 – 42	38 – 35	24 – 30	19 – 25
C	27 – 34	22 – 28	18 – 24	13 – 19
D	21 – 27	17 – 22	14 – 18	9 – 13
E	16 – 21	13 – 17	10 – 14	7 – 9
F	≤ 16	≤ 13	≤ 10	≤ 7

Source: HCM-2000, Exhibit 15-2 – "Urban Street LOS by Class"

The Caltrans published *Guide for the Preparation of Traffic Impact Studies* (dated December 2002) states the following:

> *"Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS."*

Monterey County has designated LOS "C" as the minimum LOS standard on County facilities. The 2001 PSR/PDS had utilized LOS "D" as the minimum acceptable LOS standard for the SR 1 study segments. Therefore, this PSR study uses LOS "D" as the minimum acceptable LOS standard for the SR 1 study segment.

In this study, a general "Peak Hour Factor" (PHF) of 0.92 (as recommended by HCM-2000) has been applied in the study intersection capacity analyses under all analysis scenarios. Appropriate approach

grades, and heavy vehicle percentages have been specified by intersection movement. The HCM-recommended suburban traffic signal default cycle length of 100 seconds has been used, with 4 seconds of "lost time" per critical signal phase. *Synchro 6* (Trafficware, Inc.) operations analysis software has been used to complete the HCM-2000 analysis procedures.

EXISTING TRAFFIC VOLUMES

For this analysis, Wood Rodgers reviewed the peak hour study intersection traffic volume counts conducted in March-April 2001, as published in the 2001 PSR-PDS document. The traffic counts were reviewed for the following analysis periods.

- Weekday AM Peak Hour
- Weekday PM Peak Hour
- Weekend Afternoon Peak Hour

In this analysis, the AM peak hour is defined as the one hour of peak traffic flow counted between 7:00 AM and 9:00 AM on a typical weekday, and the PM peak hour is defined as the one hour of peak traffic flow counted between 4:00 PM and 6:00 PM on a typical weekday. The Weekend peak hour is defined as the one hour of peak traffic flow counted in the afternoon (between 1:00 PM and 5:00 PM) on a typical weekend (Saturday/Sunday). In this study, the March-April traffic counts are regarded as being reasonably representative of annualized average traffic conditions, since Spring conditions reflect an average situation between the low winter and high summer traffic volume conditions.

Traffic growth trends on the study roadway segments were reviewed over recent years, and are summarized in Table 3.

TABLE 3
STUDY ROADWAY SEGMENTS – RECENT TRAFFIC GROWTH TRENDS

Year	Annual Average Daily Traffic (AADT) Volume					
	State Route 1			Rio Road		Carmel Valley Road
	Just South of Rio Road	Between Rio Road & Carmel Valley Rd.	Just North of Carmel Valley Rd.	Just West of SR 1	Just East of SR 1	Just East of SR 1
1992	12,000	22,000	44,000	-	-	-
1993	12,000	22,000	44,000	-	-	-
1994	11,500	24,000	47,500	-	-	-
1995	11,700	25,000	49,000	-	-	-
1996	12,000	25,500	50,000	-	-	-
1997	11,600	26,500	52,000	-	-	-
1998	11,600	26,500	52,000	-	-	-
1999	14,000	27,000	53,000	12,100	15,200	21,300
2000	14,000	27,000	53,000	-	14,900	25,000
2001	13,500	26,000	50,000	13,800	15,800	23,000
2002	13,200	25,500	53,000	13,700	14,400	24,100
2003	-	-	-	11,300	14,200	26,600

Source: Caltrans Traffic Volumes Publications and Monterey County Public Works
Note: Blank cells indicate that counts are not (yet) available/published for those years.

As seen from Table 3, the SR 1 study segment has shown a significant AADT growth (by 20%-22%) between 1992 and 1999. However, the AADT growth on SR 1 study segment as well as on the vicinity County roadway segments, have been somewhat fluctuating, negative or negligible from 1999 through 2002, potentially due to the decline of tourism within study vicinity in recent years. Since it does not appear that a steady, significant increase in traffic volumes has occurred between 2001 and 2003, the March-April 2001 traffic counts obtained from the 2001 PSR/PDS document continue to be regarded as fairly representative of existing base year (2003-04) traffic volume conditions. (*Note:* Monterey County has indicated that the proposed expansion of the Crossroads Shopping Center located on the southeast quadrant of the SR 1/Rio Road intersection is a "pending" project that could be approved for construction

in the near-term. Per a fair-share evaluation completed for this project in September 2003, this expansion proposal is projected to add only 48 new daily trips to the study segment of SR 1. Per discussions with County staff, the anticipated completion date for this project is no sooner than 2007. As such, the impacts of this land development proposal are none under existing conditions and negligible under short-term future conditions.)

Appendix Figure 2 illustrates the existing traffic volumes at the study facilities.

EXISTING CONDITIONS' TRAFFIC OPERATIONS

Intersection and roadway traffic operations were quantified for the study facilities under existing traffic volumes both without and with the proposed PSR improvements. All *Synchro 6* operations analysis outputs are included in the Appendix.

Intersection Operations

Appendix Exhibit A illustrates the existing facilities through the study corridor. Table 4 presents existing (2003-04) conditions' intersection traffic operations under current facilities with no improvements ("no-build" alternative).

TABLE 4
EXISTING (2003-04) CONDITIONS INTERSECTION TRAFFIC OPERATIONS WITH NO IMPROVEMENTS

Intersection	Control Type	Weekday AM Peak Hour		Weekday PM Peak Hour		Weekend Afternoon Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS
SR 1 / Rio Road	Signal	24.9	C	24.2	C	35.9	D
SR 1 / Carmel Valley Road	Signal	14.8	B	28.1	C	32.7	C

Notes: 1. Delay = Average Control Delay in Seconds/Vehicle
2. LOS = Overall Intersection Level of Service.

As shown in Table 4, both study intersections are currently operating at LOS "C" or better conditions during weekday AM and PM peak hour, although the Rio Road intersection drops to LOS "D" during weekend afternoon peak hour conditions.

This current PSR study essentially proposes an additional northbound truck-climbing lane on SR 1 for the segment between Rio Road and Carmel Valley Road. At the SR 1/Rio Road intersection, a second through lane for the northbound approach and a second right-turn lane for the westbound approach are also proposed in order to efficiently "feed" traffic to the two northbound "receiving" lanes on the SR 1 segment just north of Rio Road. Appendix Exhibit B illustrates the proposed improvements through the study corridor. Table 5 shows the existing (2003-04) conditions' intersection operations assuming that these proposed PSR improvements are in place.

TABLE 5
EXISTING (2003-04) CONDITIONS INTERSECTION TRAFFIC OPERATIONS WITH PSR IMPROVEMENTS

Intersection	Control Type	Weekday AM Peak Hour		Weekday PM Peak Hour		Weekend Afternoon Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS
SR 1 / Rio Road	Signal	23.1	C	22.4	C	29.7	C
SR 1 / Carmel Valley Road	Signal	13.8	B	17.3	B	17.8	B

Notes: 1. Delay = Average Control Delay in Seconds/Vehicle
2. LOS = Overall Intersection Level of Service.

As shown in Table 5, with the proposed PSR improvements in place, existing conditions' traffic operations are projected to be at LOS "C" or better, under weekday AM and PM peak hour as well as weekend afternoon peak hour traffic volume conditions.

Roadway Segment Operations

Table 6 summarizes existing conditions' roadway operations for the study SR 1 segments under existing facilities, with no improvements in place.

TABLE 6
SR 1 STUDY SEGMENT WITH NO IMPROVEMENTS –
EXISTING CONDITIONS ROADWAY SEGMENT TRAFFIC OPERATIONS

SR 1 - Arterial Segment	Direction	Weekday AM Peak Hour		Weekday PM Peak Hour		Weekend Afternoon Peak Hour	
		Speed	LOS	Speed	LOS	Speed	LOS
South of Rio Road	Northbound	14.2	E	13.7	E	12.4	F
South of Carmel Valley Road	Northbound	15.4	E	16.3	E	14.8	E
Northbound Total		**14.9**	**E**	**15.1**	**E**	**13.7**	**E**
North of Carmel Valley Road	Southbound	32.4	B	32.3	B	31.6	B
North of Rio Road	Southbound	19.6	D	20.5	D	19.0	D
Southbound Total		**23.0**	**C**	**23.8**	**C**	**22.3**	**C**

Notes: 1. Speed = Average Travel Speed in miles per hour
2. With a free flow speed of approx.45 mph, the SR 1 study segment is regarded as a HCM-2000 Class II Arterial.

As seen from Table 6, the northbound SR 1 study segment is currently generally operating at an arterial peak hour LOS "E" or worse conditions. All other directional SR 1 segments through the study area are currently operating at peak hour LOS "D" or better conditions.

Table 7 summarizes existing conditions' roadway operations for the study SR 1 segments with the proposed PSR improvements in place.

TABLE 7
SR 1 STUDY SEGMENT WITH PSR IMPROVEMENTS –
EXISTING CONDITIONS' ROADWAY SEGMENT TRAFFIC OPERATIONS

SR 1 - Arterial Segment	Direction	Weekday AM Peak Hour		Weekday PM Peak Hour		Weekend Afternoon Peak Hour	
		Speed	LOS	Speed	LOS	Speed	LOS
South of Rio Road	Northbound	21.0	D	21.6	D	21.4	D
South of Carmel Valley Road	Northbound	18.2	D	18.2	D	19.0	D
Northbound Total		**19.5**	**D**	**19.9**	**D**	**20.3**	**D**
North of Carmel Valley Road	Southbound	35.8	A	32.3	B	31.6	B
North of Rio Road	Southbound	19.4	D	19.6	D	18.1	D
Southbound Total		**25.1**	**C**	**23.0**	**C**	**21.6**	**D**

Notes: 1. Speed = Average Travel Speed in miles per hour
2. With a free flow speed of approx.45 mph, the SR 1 study segment is regarded as a HCM-2000 Class II Arterial.

As shown in Table 7, all SR 1 segments through the study area are projected to operate at peak hour LOS "D" or better conditions under existing traffic volumes with the proposed PSR operational improvements in place.

DESIGN YEAR 2030 TRAFFIC VOLUMES

Per Caltrans requirements, the desired "design life" of improvements scoped by a PSR is a minimum of twenty (20) years from the date of completion of the improvements. Given that the PSR improvements are anticipated to be completed and opened for operation approximately by 2009, Caltrans has indicated that "year 2030" (as used in the 2001 PSR/PDS document) should continue to be used as the "design year" for this PSR.

The 2001 PSR/PDS effort had included development of year 2030 forecasts utilizing the AMBAG regional travel demand model. Monterey County has indicated that the County General Plan Update process has had no effect on the year 2030 forecasts used in the 2001 PSR/PDS, since the land use component was updated prior to the preparation of those forecasts. County staff has also noted that the status of the proposed Rio Road Extension to the east has remained unchanged since the preparation of the 2001 PSR-PDS. Thus, as agreed in PDT discussions, the year 2030 forecasts published in the 2001 PSR/PDS continue to represent the most up-to-date design year traffic forecasts for the current PSR study segments.

The projected year 2030 traffic volumes used in this analysis are shown on Appendix Figure 3.

YEAR 2030 TRAFFIC OPERATIONS

Intersection and roadway traffic operations were quantified for the study facilities under year 2030 traffic volumes both without and with the proposed PSR improvements. All *Synchro 6* operations analysis outputs are included in the Appendix.

Intersection Operations

Table 8 shows year 2030 intersection traffic operations under current facilities with no improvements ("no-build" alternative).

TABLE 8
YEAR 2030 CONDITIONS INTERSECTION TRAFFIC OPERATIONS WITH NO IMPROVEMENTS

Intersection	Control Type	Weekday AM Peak Hour		Weekday PM Peak Hour		Weekend Afternoon Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS
SR 1 / Rio Road	Signal	27.8	C	38.0	D	64.1	E
SR 1 / Carmel Valley Road	Signal	51.9	D	56.3	E	70.7	E

Notes: 1. Delay = Average Control Delay in Seconds/Vehicle
2. LOS = Overall Intersection Level of Service.

As shown in Table 8, in general, both study intersections with no improvements over existing facilities, are projected to operate at year 2030 weekend afternoon peak hour LOS "E" conditions. Furthermore, the SR 1 / Carmel Valley Road intersection with no improvements is projected to operate at year 2030 weekday PM peak hour LOS "E" condition.

Table 9 shows the year 2030 conditions' intersection operations with the proposed PSR improvements in place.

TABLE 9
YEAR 2030 CONDITIONS INTERSECTION TRAFFIC OPERATIONS WITH PSR IMPROVEMENTS

Intersection	Control Type	Weekday AM Peak Hour		Weekday PM Peak Hour		Weekend Afternoon Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS
SR 1 / Rio Road	Signal	25.0	C	32.2	C	39.7	D
SR 1 / Carmel Valley Road	Signal	20.0	C	25.0	C	23.0	C

Notes: 1. Delay = Average Control Delay in Seconds/Vehicle
2. LOS = Overall Intersection Level of Service.

As shown in Table 9, with the proposed PSR operational improvements in place, year 2030 conditions' traffic operations are projected to be at LOS "D" or better, under weekday AM and PM peak hour as well as weekend afternoon peak hour traffic volume conditions.

Roadway Segment Operations

Table 10 summarizes year 2030 roadway operations for study SR 1 segments assuming no improvements over existing facilities.

TABLE 10
SR 1 STUDY SEGMENT WITH NO IMPROVEMENTS –
YEAR 2030 CONDITIONS ROADWAY SEGMENT TRAFFIC OPERATIONS

SR 1 - Arterial Segment	Direction	Weekday AM Peak Hour		Weekday PM Peak Hour		Weekend Afternoon Peak Hour	
		Speed	LOS	Speed	LOS	Speed	LOS
South of Rio Road	Northbound	13.1	E	10.8	F	9.2	F
South of Carmel Valley Road	Northbound	9.2	F	8.9	F	7.6	F
Northbound Total		**10.5**	**F**	**9.6**	**F**	**8.2**	**F**
North of Carmel Valley Road	Southbound	31.9	B	31.9	B	30.9	B
North of Rio Road	Southbound	20.5	D	17.8	D	16.5	E
Southbound Total		**23.7**	**C**	**21.4**	**D**	**20.0**	**D**

Notes: 1. Speed = Average Travel Speed in miles per hour
2. With a free flow speed of approx.45 mph, the SR 1 study segment is regarded as a HCM-2000 Class II Arterial.

As shown in Table 10, the northbound SR 1 study segment is generally projected to operate at year 2030 arterial peak hour LOS "F" conditions, if no improvements over existing facilities are to be constructed. The southbound SR 1 segment just north of Rio Road with no improvements is projected to operate year 2030 weekend peak hour LOS "E" conditions.

Table 11 summarizes year 2030 roadway operations for the study SR 1 segments with the proposed PSR operational improvements in place.

TABLE 11
SR 1 STUDY SEGMENT WITH PSR IMPROVEMENTS –
YEAR 2030 CONDITIONS' ROADWAY SEGMENT TRAFFIC OPERATIONS

SR 1 - Arterial Segment	Direction	Weekday AM Peak Hour		Weekday PM Peak Hour		Weekend Afternoon Peak Hour	
		Speed	LOS	Speed	LOS	Speed	LOS
South of Rio Road	Northbound	19.9	D	18.7	D	19.5	D
South of Carmel Valley Road	Northbound	15.5	E	15.5	E	17.6	D
Northbound Total		**17.6**	**D**	**17.2**	**D**	**18.6**	**D**
North of Carmel Valley Road	Southbound	31.9	B	31.9	B	30.9	B
North of Rio Road	Southbound	19.5	D	17.0	D	14.4	E
Southbound Total		**22.8**	**C**	**20.7**	**D**	**18.0**	**D**

Notes: 1. Speed = Average Travel Speed in miles per hour
2. With a free flow speed of approx.45 mph, the SR 1 study segment is regarded as a HCM-2000 Class II Arterial.

As shown in Table 11, all SR 1 segments through the study area are generally projected to operate at year 2030 arterial peak hour LOS "D" or better conditions with the proposed PSR operational improvements in place. The northbound SR 1 segment just south of Carmel Valley Road and the southbound SR 1 segment just north of Rio Road are projected to experience year 2030 LOS "E" conditions under weekday AM and PM peak hour and weekend afternoon peak hour periods, respectively. However, overall the SR 1 study segments are anticipated to operate at year 2030 arterial peak hour LOS "D" or better conditions and therefore acceptable operations are generally projected through year 2030 with the proposed PSR operational improvements in place.

ACCIDENT DATA ANALYSIS

The Traffic Accident Surveillance and Analysis (TASAS) Table B accident summaries for the SR 1 study segment were obtained from Caltrans District 5, for the three-year period extending from May 31, 2000 through June 1, 2003, and are summarized in Table 12.

TABLE 12
TASAS TABLE B ACCIDENT DATA (05/31/2000 THROUGH 06/01/2003)

Des	Location (KP to KP)	Number of Accidents / Significance							
		Total	Fatal (F)	Injury (I)	F+I	Multi-Veh.	Wet	Dark	Persons K / I
State Route 1	72.3 / 73.3	78	1	19	20	72	8	11	1 / 28

Description	Location (KP to KP)	Accident Rate (Accidents / Million Vehicles)					
		Actual			Average		
		Fatal	F+I	Total	Fatal	F+I	Total
State Route 1	72.3 / 73.3	**0.029**	0.57	**2.23**	0.019	0.81	1.90

Notes: 1. Locations are shown in Kilometer-Post (KP), where 1 KP = 0.62 Mile-Post (MP)
2. Persons K/I = Persons Killed/Injured
3. Numbers shown in bold indicate actual rates exceeding corresponding average rates.

As shown in Table 12, the actual accident rates for Fatal and Total accidents in the study section of SR 1 are somewhat above the statewide average rates for similar facilities. However, the combined rate for

Fatal and Injury (F+I) accidents is somewhat below the statewide average. Only a single fatal accident occurred in the study segment. This suggests that this segment is not significantly more hazardous than other conventional highway segments in California.

The vast majority of accidents occurred in daylight conditions (86%) on a dry roadway (90%). Over 80% of all accidents occurred between 11 am and 6 pm, and more accidents occurred on the average weekday than the average weekend day. (The day of the week with the highest accident rate was Wednesday.) Almost 65% of all accidents occurred in the northbound lane, which emphasizes the congested conditions in the uphill direction. Only 13% of all collisions occurred in one of the two intersection in this segment of SR 1. About 70% of all accidents were rear-end collisions. The next-most-common collision types were sideswipes (12%) and broadsides (8%). Only 5% of accidents were of the "hit object" type. All of these factors are consistent with congested conditions in the northbound direction on SR 1, which the improvements scoped by the PSR are intended to mitigate.

INTERIM PROJECT

A concept for phased construction of the truck climbing lane on State Route from Rio Road to Carmel Valley Road was discussed by the Project Development Team at the meeting on March 30, 2004. In this interim arrangement the truck climbing lane would transition into an exclusive right-turn lane to Carmel Valley Road. An analysis of this concept is included as Exhibit C in the Appendix to this memo. It was found that the level of service on the northbound segment of SR 1 between Rio Road and Carmel Valley Road would drop to LOS "E" by year 2010. Caltrans policy generally requires each phase of a proposed improvement to a state highway to operate at an acceptable level of service for a minimum of 10 years before the next phase is required. Since it is clear that the proposed interim project could not operate acceptably for 10 years after the completion of construction, this concept should be dropped from further consideration.

APPENDIX

Figure 1 – Project Location and Vicinity Map

Figure 2 – Existing Traffic Volumes

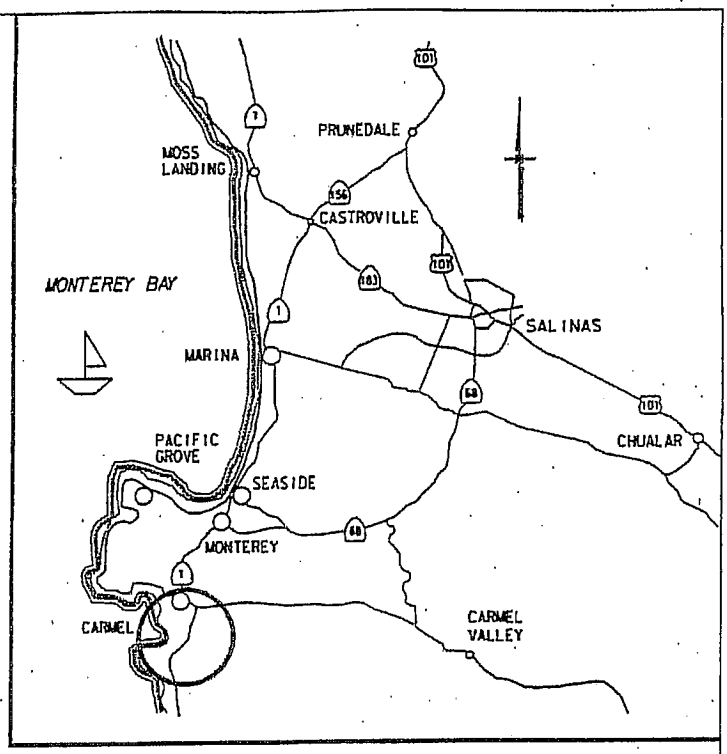
Figure 3 – Year 2030 Traffic Volumes

Exhibit A – Existing Facility Geometrics

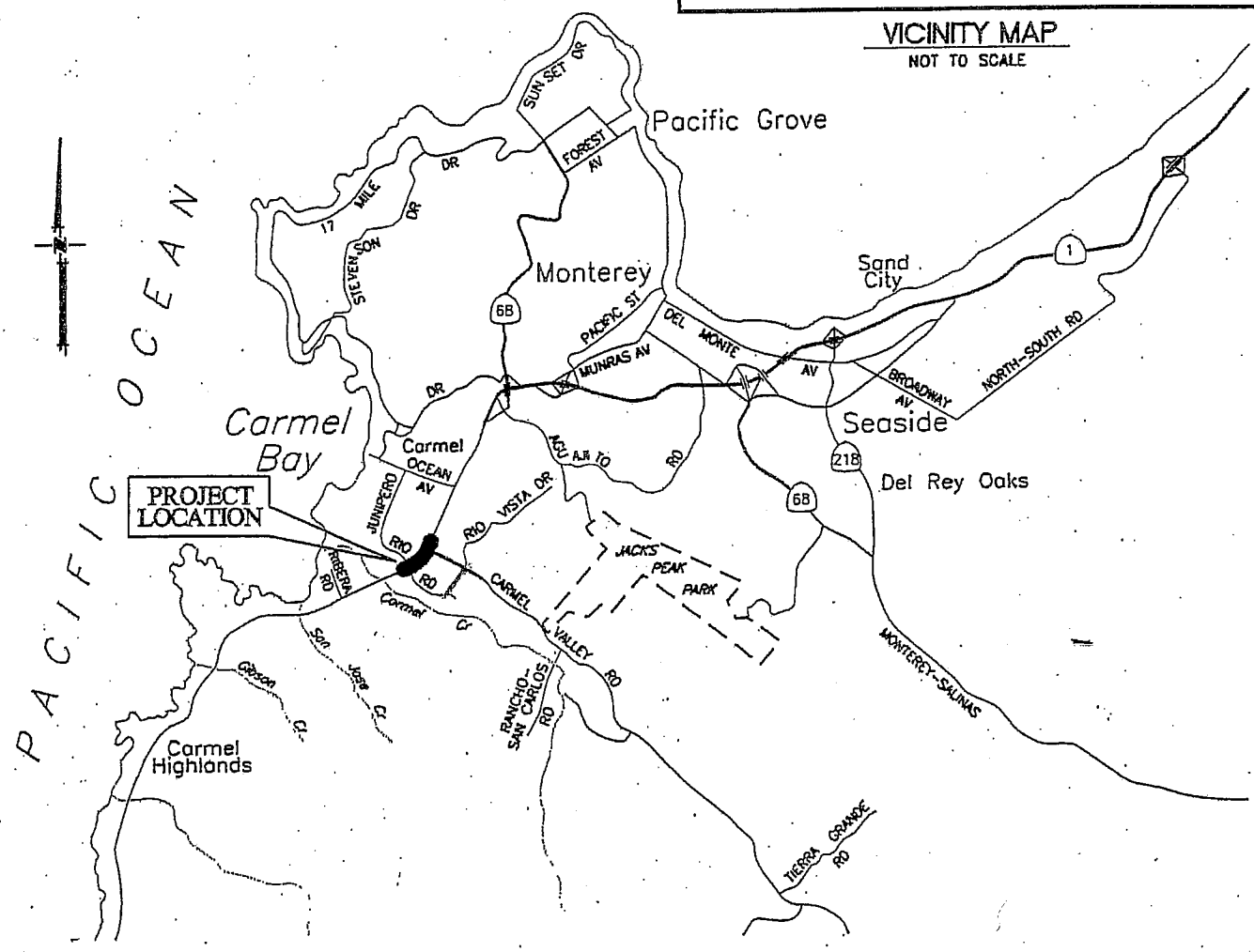
Exhibit B – Proposed Conceptual Design Geometrics

Exhibit C – Interim Project Analysis

Operations Analysis Worksheets



VICINITY MAP
NOT TO SCALE



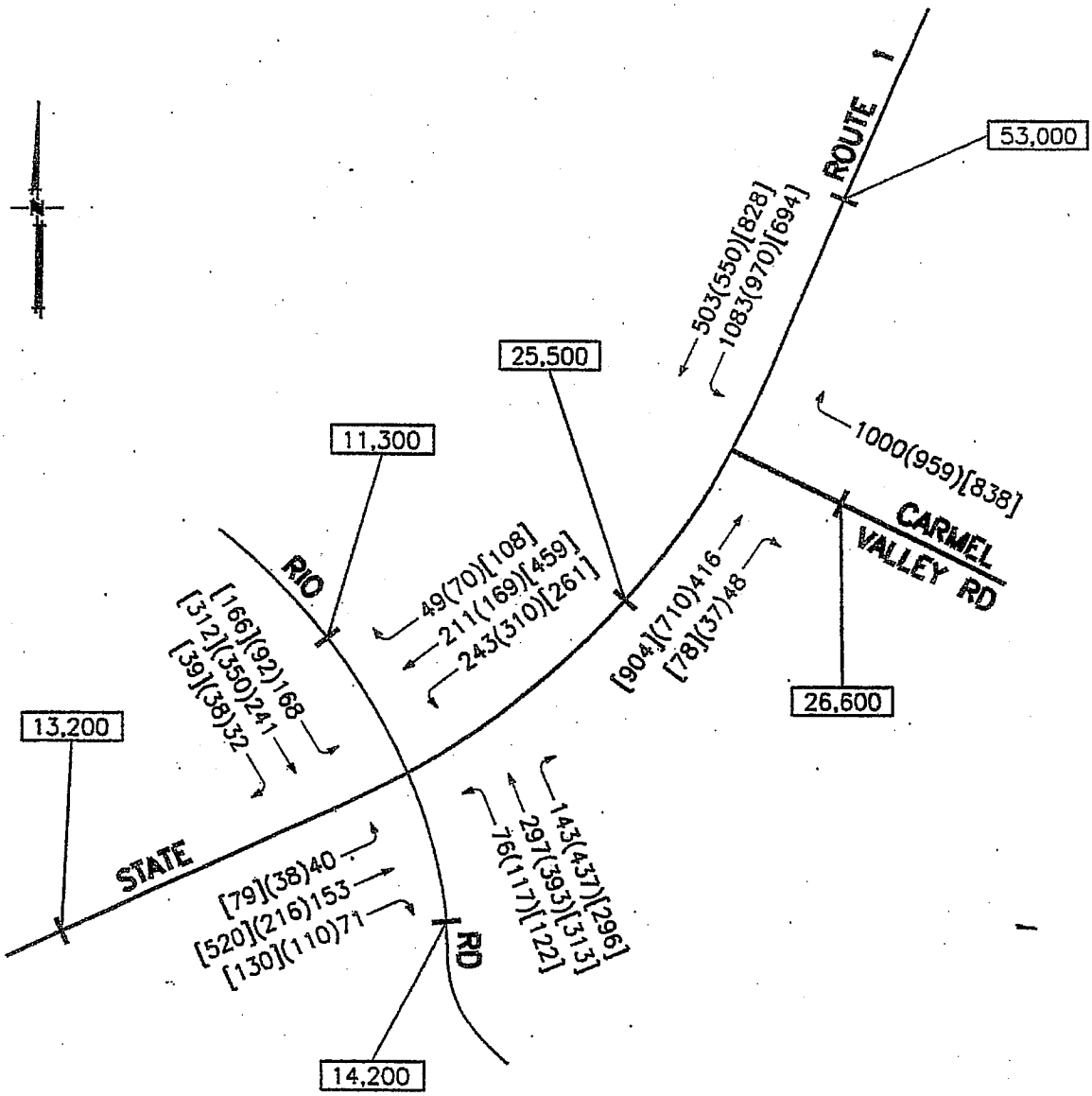
SR 1 IMPROVEMENTS - RIO ROAD TO CARMEL VALLEY RD PSR FIGURE 1

PROJECT LOCATION AND VICINITY MAP

WOOD RODGERS
ENGINEERING • MAPPING • PLANNING • SURVEYING
3301 C St, Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767

LEGEND:

XX – WEEKDAY AM PEAK HOUR VOLUME
(XX) – WEEKDAY PM PEAK HOUR VOLUME
[XX] – WEEKEND AFTERNOON PEAK HOUR VOLUME
XX,XXX – ANNUAL AVERAGE DAILY TRAFFIC VOLUME



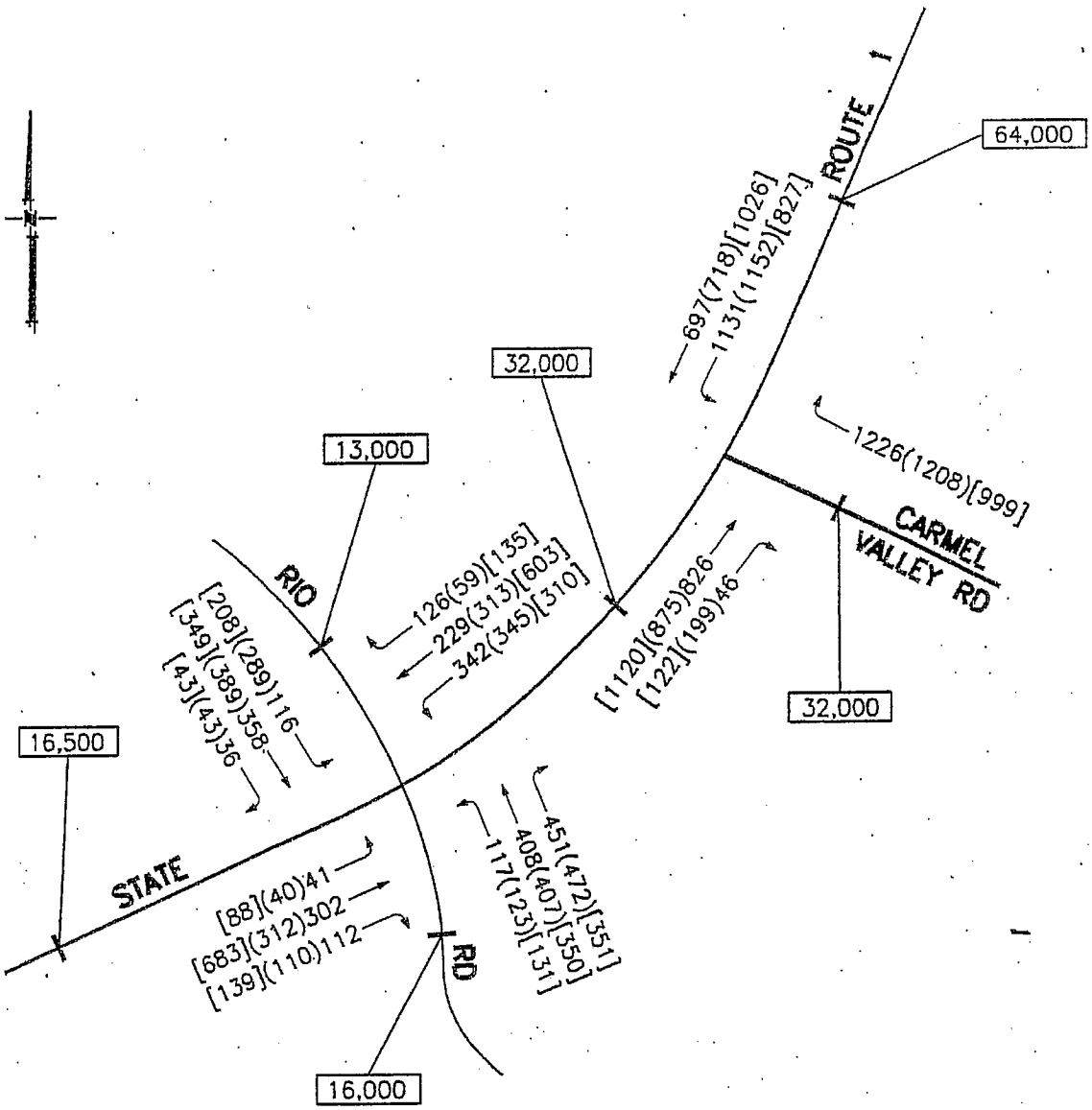
SR 1 IMPROVEMENTS - RIO ROAD TO CARMEL VALLEY RD PSR FIGURE 2

EXISTING (2003-04) TRAFFIC VOLUMES

WOOD RODGER
ENGINEERING • MAPPING • PLANNING • SURVEYS
3301 C St, Bldg. 100-B Tel 916.341.77
Sacramento, CA 95816 Fax 916.341.77

LEGEND:

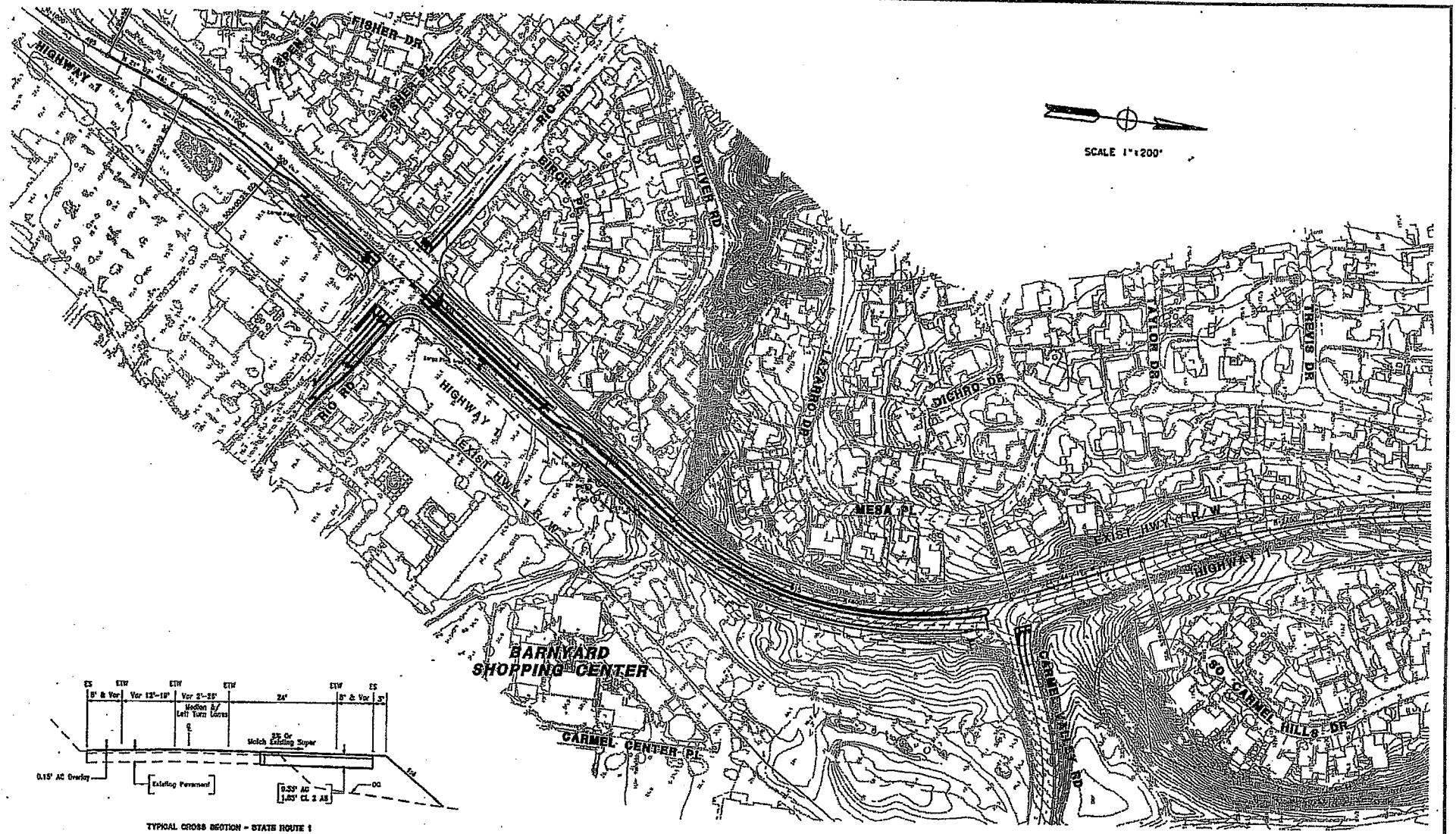
XX – WEEKDAY AM PEAK HOUR VOLUME
(XX) – WEEKDAY PM PEAK HOUR VOLUME
[XX] – WEEKEND AFTERNOON PEAK HOUR VOLUME
XX,XXX – ANNUAL AVERAGE DAILY TRAFFIC VOLUME



SR 1 IMPROVEMENTS - RIO ROAD TO CARMEL VALLEY RD PSR FIGURE 3

YEAR 2030 PROJECTED TRAFFIC VOLUMES

WOOD RODGERS
ENGINEERING - MAPPING - PLANNING - SURVEYING
3301 C St, Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767



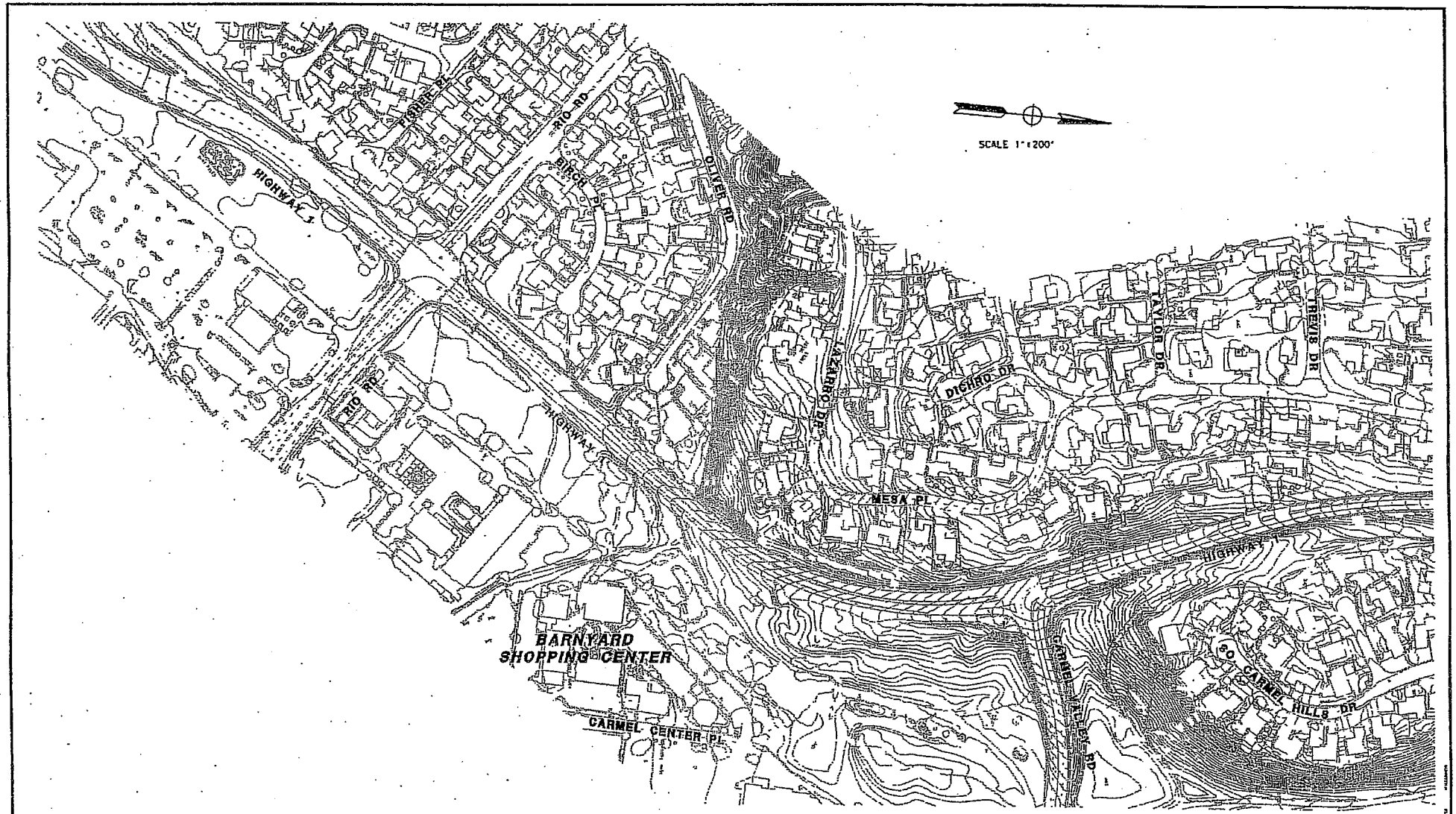
TYPICAL CROSS SECTION - STATE ROUTE 1

WOOD RODGERS
ENGINEERING - MAPPING - PLANNING - SURVEYING
3301 C St, Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767

PROJECT

STATE ROUTE 1 IMPROVEMENT (RIO RD - CARMEL VALLEY RD)

CONCEPTUAL GEOMETRIC PLAN



WOOD RODGERS
ENGINEERING • MAPPING • PLANNING • SURVEYING
3301 C St, Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767

PROJECT
STATE ROUTE 1 IMPROVEMENT
(RIO RD - CARMEL VALLEY RD)

EXISTING GEOMETRICS

EXHIBIT "C"

"INTERIM YEAR" TRAFFIC OPERATIONS WITH "INTERIM PROJECT"

As part of the current PSR study for identifying SR 1 Operational Improvements for the segment between Rio Road and Carmel Valley Road, it was recognized that it may be of interest to the PDT to investigate the operational life span an "interim" operational improvement project would provide. This envisioned "interim" operational improvement project would stripe the proposed northbound SR 1 truck-climbing lane as an exclusive northbound right-turn lane at the approach to the SR 1/Carmel Valley Road intersection (as opposed to through-right striping, which would represent the "ultimate" operational improvement project).

To that end, Wood Rodgers has completed an incremental traffic growth analysis using an interpolation of traffic growth between existing (2003-04) and ultimate design year (2030) traffic volumes. A comparison of the 2003-04 traffic volumes and year 2030 traffic volumes for the SR 1 study segment revealed an approximately 62% growth in weekday AM peak hour traffic volumes, 38% growth in weekday PM peak hour traffic volumes and 25% growth in weekend afternoon peak hour traffic volumes, over that time period. This yields an annual compoundable SR 1 traffic growth rate of 1.90%, 1.20% and 0.86% for weekday AM peak hour, weekday PM peak hour and weekend afternoon peak hour conditions, respectively. Based on traffic operational analyses completed for the "interim" project using incremental sets of traffic volumes, Wood Rodgers has determined that the first operational deficiencies, meaning deterioration below Caltrans standard of LOS "D" conditions, would occur approximately 5 years from the base year (2004), or approximately by 2009-10. Utilizing the projected annualized traffic growth rates, by year 2010, the weekday AM peak hour, weekday PM peak hour and weekend afternoon peak hour traffic volumes are projected to have increased over existing conditions by 10%, 6% and 4%, respectively.

The following section summarizes year 2010 intersection and roadway operations, quantified utilizing the same analysis methodologies and parameters as the PSR traffic operations analysis.

Intersection Operations

Table 1 presents year 2010 conditions' intersection traffic operations with the "interim" project.

TABLE 1
YEAR 2010 CONDITIONS INTERSECTION TRAFFIC OPERATIONS WITH INTERIM IMPROVEMENTS

Intersection	Control Type	Weekday AM Peak Hour		Weekday PM Peak Hour		Weekend Afternoon Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS
SR 1 / Rio Road	Signal	24.6	C	23.3	C	31.2	C
SR 1 / Carmel Valley Road	Signal	20.2	C	32.5	C	37.7	D

Notes: 1. Delay = Average Control Delay in Seconds/Vehicle
2. LOS = Overall Intersection Level of Service.

As shown in Table 1, both study intersections are projected to operate at weekday AM and PM peak hour as well as weekend afternoon peak hour LOS "D" or better conditions through year 2010 with the "interim" improvement project.

Roadway Segment Operations

Table 2 summarizes year 2010 conditions' roadway operations for the study SR 1 segments with the "interim" improvement project in place.

TABLE 2
SR 1 STUDY SEGMENT WITH INTERIM IMPROVEMENTS –
YEAR 2010 ROADWAY SEGMENT TRAFFIC OPERATIONS

SR 1 - Arterial Segment	Direction	Weekday AM Peak Hour		Weekday PM Peak Hour		Weekend Afternoon Peak Hour	
		Speed	LOS	Speed	LOS	Speed	LOS
South of Rio Road	Northbound	23.2	C	22.3	C	21.3	D
South of Carmel Valley Road	Northbound	17.0	E	14.8	E	13.2	E
Northbound Total		**20.0**	**D**	**18.3**	**D**	**16.9**	**E**
North of Carmel Valley Road	Southbound	32.3	B	32.3	B	31.5	B
North of Rio Road	Southbound	18.8	D	19.6	D	17.7	D
Southbound Total		**22.3**	**C**	**23.0**	**C**	**21.2**	**D**

Notes: 1. Speed = Average Travel Speed in miles per hour
2. With a free flow speed of approx.45 mph, the SR 1 study segment is regarded as a HCM-2000 Class II Arterial.

As seen from Table 2, the northbound SR 1 study segment with the "interim" improvement project in place is projected to operate at an arterial peak hour LOS "E" condition (average travel speed of 16.9 mph, which is just below the LOS "D" threshold of 17.0 mph) under year 2010 weekend afternoon traffic volumes. **Thus it becomes evident that the first operational deficiencies with the interim improvement project begin to appear by year 2010.**

Exhibit F – Right of Way Data Sheet & Utility Info Sheet

RIGHT OF WAY DATA SHEET

TO: Wood Rodgers, Inc.

ATTN.: Keith Hallsten, PE
Project Engineer

Date: July 17, 2004
Dist. 05 Co. MON Rte. 1
PM (KP): 72.3/72.9 (116.3/117.2)
EA: 0L570K
Project Desc. Operational Improvements Rio Road to Carmel Valley Road

SUBJECT: Right of Way Data – Build Alternate

1. **Right of Way Cost Estimate:**

	Current Value (Future use)	Escalation Rate	Escalated Value
A. Acquisition, including Excess Lands, Damages and Goodwill	$38,000	15%	$43,700
Project Permit Fees. (Coastal Permit)	$10,000	15%	$11,500
B. Utility Relocation (Agency Share)	$ 0	-%	$ 0
C. Relocation Assistance	$ 0	-%	$ 0
D. Clearance / Demolition	$ 0	-%	$ 0
E. Title and Escrow Fees	$1,000	15%	$1,150
F. Total Current Value	$49,000		
G. Total Escalated Value			$56,350
H. Construction Contract Work	$ 0		

2. **Anticipated Date of Right of Way Certification:** August 2007

3. **Parcel Data:**

Type	Dual /Appr
X	
A	
B	
C 1	0
D	
E XXXX	
F XXXX	
Total: 1	

Utilities NA
U4-1
-2
-3
-4
U5-7
-8
-9

RR Involvements
None X
C&M Agrmt
Svc Contract
Lic/RE/Clause

Misc. R/W Work
RAP Displ
Clear/Demo
Const Permits
Condemnation 0

Areas: Right of Way: 53 SM **Number Excess Parcels:** 0 **Excess:** 0

Enter PMCS Screens NA by NA

Enter AGRE Screens NA (Railroad data only) by NA

1/-25-05

4. **Are there any items of construction contract work?** Yes ____ No X

5. **Provide a general description of the right of way and excess lands required (zoning, use major improvements, critical or sensitive parcels, etc.)** No Right of Way Required _____ There is one minor right of way acquisition from a service station. There are no structural improvements involved. Surrounding neighborhood is devoted to mostly retail and professional services. The incorporated community of Carmel is located nearby.

6. **Is there an effect on assessed valuation?** Yes ____ Not Significant ____ No X

7. **Are utility facilities or rights of way affected?** Yes X No ____ **(If yes, attach Utility Information Sheet Exhibit 01-01-05).**

8. **Are Railroad facilities or rights of way affected?** Yes ___ No X **(If yes, attach Railroad Information Sheet Exhibit 01-01-06)**

9. **Were any previously unidentified sites with hazardous waste and/or material found?** Yes ____ None Evident X

10. **Are RAP displacements required?** Yes ____ No X **(If yes, provide the following information)**

No. of single family	No. of business/nonprofit
No. of multi-family	No. of farms

Based on Draft/final Relocation Impact Statement/Study dated - NA

11. **Are there material borrow and /or disposal sites required?** Yes ____ No X

12. **Are there potential relinquishments and/or abandonments?** Yes ____ No X **(If yes, explain)**

13. **Are there any existing and or potential Airspace sites?** Yes ____ No X **(If yes, explain)**

14. **Indicate the anticipated Right of Way schedule and lead time requirements.** No less than 6 to 10 months lead time will be required for this alternate.

15. **Is it anticipated that all Right of Work will be performed by CALTRANS staff?** Yes ___ No X. It is anticipated that CALTRANS staff will only provide project oversight and assistance.

I personally prepared this Right of Way Data Sheet and supporting information. I certify that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the accuracy of the data provided, normal limiting conditions and that this Data Sheet is complete and current.

The above data has been prepared for the sole purpose of making a comparative market analysis and should not be considered to be an appraisal. In making any decision that relies upon the above data, it should be remembered that the guidelines for development of an appraisal or analysis as contained in the Uniform Standards of Professional Appraisal Practice of the Appraisal Foundation have not been followed .

By: **R. H. Tarvin SR/WA, IFAS** **Date: July 17, 2004**
Right of Way Agent and Certified General Real Estate Appraiser

RHT 1-28-05

Alternative: Operational Improvements Rio Road to Carmel Valley Road

UTILITY INFORMATION SHEET

1. Name of utility companies involved in project:

   Pacific Gas & Electric
   SBC
   Charter Communications
   County of Monterey - Information only
   City of Carmel – Information only

2. Types of facilities and agreements required:

   Notice:

PG&E - Relocate 5 poles @ $7,500/pole	-	$37,500	No Agency Costs
Charter Communication – Relocate cable facilities located On PG&E poles	-	$30,000	No Agency Costs

3. Is any facility a longitudinal encroachment in existing or proposed access controlled right of way? There is no access control right of way in this project.

4. Additional information concerning utility involvement on the project:

   No less than six month lead time should be scheduled for utility relocation activities.

5. PMCS Input Information; Not Applicable

Total estimated Agency cost obligations for utility relocation on this project alternative: $ 0

Prepared By: R. H. Tarvin

RHT 11-25-05

Exhibit G – Storm Water Data Sheet Cover

Caltrans Metric

Dist-County-Route 05-Mon-01
Kilometer Post Limits 116.3/117.2 (PM 72.3/72.9)
Project Type Operational Improvements
EA: 05-0L570K
RU:
Program Identification: HB4N

Phase: ☒ PID ☐ PA/ED ☐ PS&E

Regional Water Quality Control Board(s): Central Coast

Is the Project exempt from incorporating Treatment BMPs? Yes ☐ No ☒
If yes, attach the Exemption Documentation Form

Are new Treatment BMPs incorporated into the Project? Yes ☒ No ☐

Estimated Construction Start Date: September 2007

Notification of Construction (NOC) Date to be Submitted: TBD

Notification of ADL reuse (if yes, provide date) Yes ☐ Date_____ No ☒ N/A ☐

Separate Dewatering Permit (if yes, permit no.) Yes ☐ Permit #_____ No ☒ N/A ☐

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the data upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

Registered Project Engineer — *Date* 25 August 2004

I have reviewed the storm water quality design issues contained in the Storm Water Data Report and Attachments attached hereto, and find the data to be complete, current, and accurate:

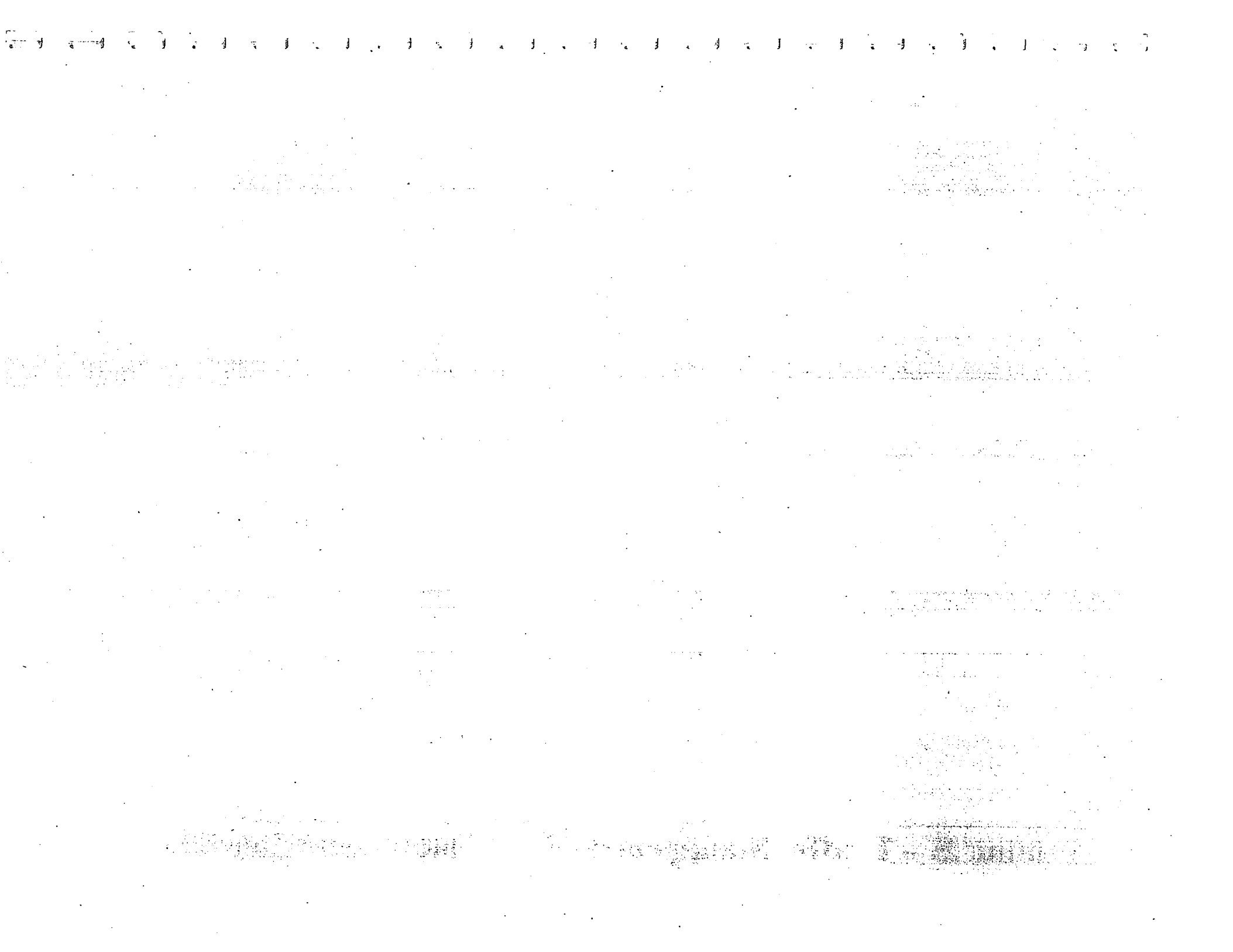
Project Manager — *Date* 9-24-04

Designated Maintenance Representative — *Date* 9-23-04

Designated Landscape Architect Representative — *Date* 9/22/04

Design District/Regional Storm Water Coordinator or Designee — *Date* 9/22/04

Exhibit H – Traffic Management Plan Data Sheet/Checklist



DISTRICT 5
TRAFFIC MANAGEMENT PLAN DATA SHEET/CHECKLIST

District / EA: 05 / 0L570K
Project Engineer: Keith Hallsten, Wood Rodgers
Date Prepared: 14 June 2004

Co.-Rte-KP: Mon - 1 - 116.3/117.2
Description: Climbing lane, Rio Rd to CVR
Working Days: 120

Check each box and reference your attachments to the item(s) number(s) shown on the list.

	Required	Not required	Not Applicable	COMMENTS
1.0 Public Information				
1.1 Public Awareness Campaign	X			
1.2 Other Strategies		X		
2.0 Motorist Information Strategies				
2.1 Changeable Message Signs - Portable	X			
2.2 Construction Area Signs	X			
2.3 Highway Advisory Radio (fixed and mobile)		X		
2.4 Planned Lane Closure Web Site		X		Construction to provide information to TMC
2.5 Caltrans Highway Information Network (CHIN)		X		Construction to provide information to TMC
3.0 Incident Management				
3.1 COZEEP	X			
3.2 Freeway Service Patrol		X		
4.0 Traffic Management Strategies				
4.1 Lane/Ramp Closures Charts			X	
4.2 Total Facility Closure		X		
4.3 Coordination with adjacent construction		X		
4.4 Contingency Plan				Standard SSP
4.4.1 Material/Equipment Standby		X		Contruction/Contractor to provide
4.4.2 Emergency Detour Plan			X	Contruction/Contractor to provide
4.4.3 Emergency Notification Plan		X		Contruction/Contractor to provide
4.5 SSP 12-220 and Others		X		
4.6 Other Strategies:				
Identify relevant holiday closures.	X			No work on heavy tourist weekends
5.0 Anticipated Delays				
5.1 Lane Closure Review Committee (for anticipated delays over 30 minutes)			X	
5.2 Planned freeway closures			X	
5.3 Minimal delay anticipated - no further action required				

[X] yes [ ] no If no, explain additional measures on attached sheet.

6.0 Placement of CMS	X		Approaching Rio Rd intersection from S, E & W.

Keith Hallsten
Prepared by: