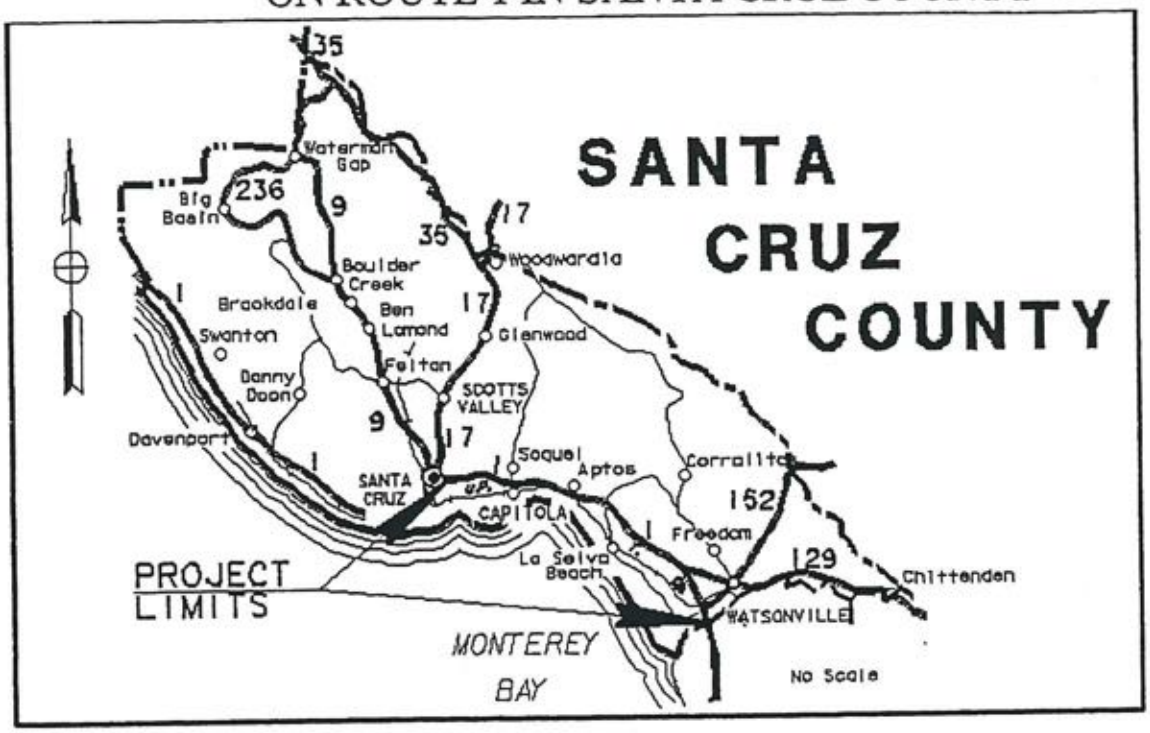
45030K

05-SCr-1-0.0/27.0
(PM 0.0/16.8)
July 1997

PROJECT STUDY REPORT

ON ROUTE 1 IN SANTA CRUZ COUNTY



Between the Monterey County Line
and Route 1/17 Separation

RECOMMENDED BY:

Steven M. Wyatt
Project Manager

APPROVED:

For Kenneth G. Nelson
District Director
District 5

Date 9-22-97

Bart Bohn 9/26/97

Bart Bohn
District Director
District 6 - Central Region

Date

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

REGISTERED CIVIL ENGINEER

7-29-97
DATE

05-SCr-1-0/27.0)
236-45030K
HB4N
Operational Improvements

Introduction - The project proposes to construct operational improvements on Route 1 in Santa Cruz County between the Rio Del Mar interchange (Post Mile (PM) 9.2) and the Route 17 interchange (PM 16.8). The project improvements include an auxiliary lane for southbound traffic between Park Avenue (PM 12.1) and Bay Avenue (PM 13.2), an auxiliary lane for southbound traffic between 41st Avenue (PM 13.6) and Soquel Avenue (PM 13.2), and a southbound auxiliary lane between Soquel Avenue (PM 14.9) and Morrisey Boulevard (PM 15.8). The project also proposes ramp metering all of the onramps between Rio Del Mar Boulevard and Morrisey Boulevard. The project also proposes interchange modifications for the southbound ramps at Soquel Avenue. The estimated cost of the five improvements range from $1.2 million to $5.1 million and total $17.5 million. This proposal is to fund all the improvements and construct them in 5 phases. The phases could be combined to take advantage of funding and/or lower overall costs. This 1998 STIP candidate is to be funded from the operational improvements (non-capacity increasing)(HB4N/IRS) program. The identified improvements to Route 1 are operational in nature and not intended to increase the capacity of the highway.

Background - This project was initiated by Caltrans District 5 after consultation with the Santa Cruz County Regional Transportation Commission to study operational improvements including ramp metering in the Route 1 corridor from the Monterey County line to the Route 1/17 separation ("Fishhook"). Route 1 is the only major north-south highway in Santa Cruz County. Within the county Route 1 runs 37.5 miles along the coast from Monterey County to San Mateo County. Route 1 also connects directly with Route 17 in the City of Santa Cruz. Route 17 is the major east-west arterial running between the coastal region and the the highly industrialized portion of Santa Clara County known as the "Silicon Valley". A project to revise the Route1/17 interchange is currently in design and is scheduled for construction in 2000. Route 1 throughout the proposed project limits is part of the National Highway System (NHS). The objective of the NHS is a national network interconnecting all major urban areas.

Route 1 between Rio Del Mar Boulevard and Morrisey Boulevard is a four lane divided freeway with a 2 to 11 meter median width. Within the project limits there are seven interchanges. The Route Concept report (RCR) for this segment of Route 1 proposes a 6-lane facility to obtain a future Level of Service (LOS) D/E. The RCR is a planning document which outlines Caltran's proposed strategy for responding to projected travel demand over the subsequent 20-year planning period.

Widening Route 1 in Santa Cruz from four to six lanes between Rio Del Mar Avenue and the Route 17 interchange was identified as a high priority regional transportation improvement in the 1986 Regional Transportation Plan (RTP) for Santa Cruz County. A draft Project Study Report to evaluate the widening was prepared by Caltrans in October 1992 . The 1994 RTP lists widening Route 1 to six lanes from Rio Del Mar Road to Route 17. The Santa Cruz County Transportation Commission is continuing to perform a Major Investment Study (MIS) for the Route 1 corridor. The MIS is studying eight alternatives, one of which proposes HOV lanes in each direction of Route 1 between Rio Del Mar and the Route 17 interchange.

Need and Purpose – Santa Cruz County remains heavily auto-dependant, despite efforts to lessen dependenc on the automobile. The current Annual Average Daily Traffic (AADT) along Route 1 ranges from 31,000 near the Monterey County line to 100,000 near the "fishhook". The AADT and the projected volumes for (2022) along this segment are 85,600 (115,700) . The Design Hourly Volume for the year 2022 is 12,150 which exceeds the theoretical capacity of the highway. The current operating condition is Level of Service "F" during peak hours. As the volumes continue to rise the peak hours with LOS F are expected to lengthen if no improvements are made to the facility. Maximum peak hour volumes on this segment of Route 1 are in the northbound direction during the A.M. peak hour and in the southbound direction during the P.M. peak hour. During the PM peak, the county's highest hourly traffic volumes occur on Route 1 between the fishhook and 41st Avenue in Capitola. The highway volumes at these peaks are now 8,200, which exceed the theoretical capacity of the highway and are projected to increase to 12,150 by the year 2022. Traffic will back up in the southbound direction from Park Avenue in Capitola through the Fishhook on Route 17 towards Scott's Valley and on Route 1 north toward the Route 9 junction..

There are no alternate State Routes for motorists to use when approaching the Fishhook from either southbound Route 1 (Mission Street) or from southbound Route17. There are no convenient parallel alternative local roads in the corridor. A southbound motorist on Route 1 (Mission Street) continuing from north of Santa Cruz could negotiate downtown Santa Cruz via River Street, Front Street, Ocean Street, and Soquel Avenue however these streets also experience peak hour congestion. A southbound motorist on Route 17 has little alternative but to go through the Fishhook to continue south on Route 1. The focus of these traffic flows is the project location. By improving the operation with these proposed improvements there will be a positive effect upstream on Route 1 and 17. To summarize, there is a need to improve the operation of Route 1 south of the Fishhook to facilitate north-south surface movements in the County and the purpose of the improvements is to facilitate more efficient operation of the facility with the goal of reducing P.M. peak hour congestion.

Alternatives - There is one "build" alternative with 5 proposed improvements for construction under consideration. Each of the improvements proposed in the "build" alternative is a separate "stand alone" project in that it does not depend on any other improvements for effectiveness. The projects are complimentary however, and if they are implemented following the first phase of the Route 1/17 "fishhook" project there will be very significant operational improvements to the southbound traffic in the Route 1 corridor.

The build alternative has 3 basic components.
1) The auxiliary lane, which typically connects a freeway entrance ramp directly with the next exit ramp, thu improving merging opportunities and traffic flow.
2) Interchange ramp modifications, to modify the existing "hook" and "loop" type ramps to the "diamond type" interchange configuration provides direct turning movements at the crossroads, minimal construction and right of way costs, and a high standard for ramp alignment.
3) Ramp meters, to reduce congestion and overall travel time both on the freeway and local streets by more efficiently integrating the merging flows.

Improvement 1- Southbound Auxiliary Lane from Soquel Avenue to 41st Avenue. This proposal features a 3.6 meter lane and 1.5 meter shoulder which would be constructed in the median. The roadway would then be restriped to provide a dedicated lane beginning at the southbound Soquel Avenue onramp anc terminating at the southbound 41st Avenue offramp. A concrete barrier would be constructed in the median.

No additional right of way is required for this improvement and environmental impacts are expected to be minimal. The estimated construction cost is $1,200,000.

Improvement 2- - Southbound Auxiliary Lane from Morrissey Avenue to Soquel Avenue. This proposal features a 3.6 meter lane and 1.5 meter shoulder which would be constructed in the median where the existing median is wide enough to allow it, and along the existing outside shoulder with a retaining wall where the existing median is less than 10 meters wide. The roadway would then be restriped to provide a dedicated lane beginning at the southbound Morrissey Avenue onramp and terminating at the southbound 41st Avenue offramp. The La Fonda Avenue Overcrossing would have to be replaced with a wider, longer structure. A concrete barrier would be constructed in the median. No additional right of way is required for this improvement and environmental impacts are expected to be minimal. Estimated construction cost is $4,800,000.

Improvement 3- Ramp meter all onramps from Rio Del Mar Boulevard to Morrissey Boulevard. This operational improvement would install ramp metering at seven interchanges. They are Rio Del Mar, State Park Road, Park Avenue, Bay/Porter Avenue, 41st Avenue, Soquel Road, and Morrissey Avenue. The ramp meters include closed circuit television, mainline detector loops, the ramp meter signals and controllers and telephone service for data and video linkage to the Traffic Operations Centers. Wherever feasible there will be HOV dedicated lanes and CHP enforcement pads. The estimated cost is $2,400,000.

Improvement 4- Realign the southbound on/offramps at the Soquel Avenue Interchange. This proposal would realign the southbound ramps of the Soquel Avenue interchange to create a "Half Diamond" configuration. This configuration would increase the efficiency of the interchange and create more storage on the ramps for metering. The southbound offramp would require an embankment with a 6 meter maximum height. Some mature trees and vegetation would have to be removed on the existing slope. No additional right of way is anticipated. The estimated cost is $4,000,000.

Improvement 5 - Southbound Auxiliary Lane from Bay/Porter Avenue to Park Avenue. This proposal features a 3.6 meter lane and 1.5 meter shoulder which would be constructed in the median where the median width is adequate and along the existing outside shoulder by means of a retaining wall where the existing median is 10 meters wide. The roadway would then be restriped to provide a dedicated lane beginning at the southbound Bay/Porter Avenue onramp and terminating at the southbound Park Avenue offramp. The Capitola Avenue Overcrossing would have to be replaced with a wider, longer structure. A concrete barrier would be constructed in the median. No additional right of way is required and environmental impacts are expected to be minimal. The estimated construction cost is $5,100,000.

System Planning - Route 1 is part of both the National Highway System and the Interregional Road System (IGRS). It is the major north-south arterial in the County. The Santa Cruz County 1994 Regional Transportation plan (RTP) lists the following long range projects:

1) Widen Route 1 from four to six lanes from Rio Del Mar Boulevard to Route 17. Reconstruct Morrissey Boulevard Interchange. Expand State Park Drive interchange. Eliminate weave between Bay Avenue and 41st Avenue interchanges.
2) Reconstruct the Soquel Avenue interchange to provide a 2-loop interchange and widen the overcrossing structure.

No additional right of way is required for this improvement and environmental impacts are expected to be minimal. The estimated construction cost is $1,200,000.

Improvement 2- - Southbound Auxiliary Lane from Morrissey Avenue to Soquel Avenue. This proposal features a 3.6 meter lane and 1.5 meter shoulder which would be constructed in the median where the existing median is wide enough to allow it, and along the existing outside shoulder with a retaining wall where the existing median is less than 10 meters wide. The roadway would then be restriped to provide a dedicated lane beginning at the southbound Morrissey Avenue onramp and terminating at the southbound 41st Avenue offramp. The La Fonda Avenue Overcrossing would have to be replaced with a wider, longer structure. A concrete barrier would be constructed in the median. No additional right of way is required for this improvement and environmental impacts are expected to be minimal. Estimated construction cost is $4,800,000.

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Improvement 5 - Southbound Auxiliary Lane from Bay/Porter Avenue to Park Avenue. This proposal features a 3.6 meter lane and 1.5 meter shoulder which would be constructed in the median where the median width is adequate and along the existing outside shoulder by means of a retaining wall where the existing median is 10 meters wide. The roadway would then be restriped to provide a dedicated lane beginning at the southbound Bay/Porter Avenue onramp and terminating at the southbound Park Avenue offramp. The Capitola Avenue Overcrossing would have to be replaced with a wider, longer structure. A concrete barrier would be constructed in the median. No additional right of way is required and environmental impacts are expected to be minimal. The estimated construction cost is $5,100,000.

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2) Reconstruct the Soquel Avenue interchange to provide a 2-loop interchange and widen the overcrossing structure.

The current Route Concept Report RCR) recommends widening Route 1 from 4 to 6 lanes between Rio Del Mar Boulevard and 41st Avenue and 4 to 8 lanes between 41st Avenue and the Route 1/17 Interchange. The Operational Improvements proposed in this document are interim measures not dealing with capacity and deficiencies.

Hazardous Material/Waste- No hazardous waste issues are anticipated. None were found on the 6 and 8 lan studies in 1992. The operational improvements will all be constructed within existing right of way.

Traffic Management Plan- The construction impacts to traffic will be minimal since the existing lanes and ramps should be available during most of the construction stages. A traffic management plan would be developed to mitigate the impacts.

Environmental Clearance- From the preliminary study done by the environmental branch of Caltrans there ar issues with endangered species, wetlands, and cultural resources. Because of these potential impacts the likely environmental document for this project is an EIR/EIS. More detailed studies may change this conclusion.

Funding/Scheduling- This project is a candidate for the 1998 STIP from the HB4N (Operational Improvements, Non-capacity increasing) program.

The tentative milestone schedule is as follows:
Submit Project Report: Aug. 1, 1997 (draft)
Environmental Clearance: June 2000
Bridge Site Data:
Maps to R/W:
PS&E: May 2001
R/W Cert.: July 2001

District contact

Steven M. Wyatt Project Manager	(805) 549-3079
Rich Krumholz Programming Document Coordinator	(805) 542-4604
Don Steiger Transportation Planner	(408) 722-9276
Janet Newland Environmental Planner	(805) 542-4603
Jim Amberg Right of Way Agent	(805) 549-3207

Attachments:

1. Project Location Map
2. Typical Sections
3. Alternate 1,2,4,& 5 Layouts
4. Alternate 1-5 Estimates
5. Preliminary Environmental Determination
6. Right of Way Data sheet
7. Database Certification
8. Distribution List

Resources can be avoided If the resources can be avoided, a determination of eligibility is not required and the HPSR must document that there would be no effect to any cultural resources. The SHPO must concur in the finding that the protective measures are sufficient and that there will be no effect to any cultural resources. Allow 6-8 months to complete those studies.

Finding of Effect A Finding of Effect/No Adverse or Adverse (Adverse if human remains are encountered) may be required. If the property is eligible and cannot be avoided during construction, the effects document must be approved by the SHPO and the Advisory Council on Historic Preservation. The final environmental document must show that the SHPO and ACHP concur in the Finding of Effect. In case of an Adverse Effect a signed Memorandum of Agreement between FHWA, SHPO, ACHP and Caltrans must also be included in the environmental document. Allow an additional 4 months for preparation and processing of the effects document. Preparation of this document can take place concurrent with SHPO review of the Positive Historic Property Survey Report/DOE.

COASTAL DEVELOPMENT

A Coastal Development Permit will be required. The project runs through the coastal zone from the Santa Cruz County Line (postmile 0.0) to Orchard Street (approximately postmile 12.5). To obtain the permit, it will be necessary to demonstrate compliance with the Santa Cruz County LCP (Local Coastal Plan) and the Capitola LCP its provisions.

Work in the Santa Cruz County Coastal Zone consists of ramp metering at Rio Del Mar Avenue Overcrossing, State Park Drive Overcrossing and the Park Avenue Undercrossing. In their combined General Plan and LCP, Santa Cruz County stresses the provision of transit facilities, protection and preservation of plant habitats, wildlife corridors, visual, historic and archaeological resources. Level of Service C is considered the objective in the County, but it has been decided that LOS D is the minimum acceptable.

Work in the City of Capitola's Coastal Zone is includes ramp metering at the Park Avenue Undercrossing and a portion of the southbound auxiliary lane that would be constructed between the Bay/Porter Avenue and Park Avenue Undercrossings. The Capitola LCP allows tree removal only in accordance with the city's Tree Ordinance. It is the policy of the city to protect environmentally sensitive and locally unique habitats and to maintain the natural features and visual resources of the area. The city's General Plan recommends increasing the capacity of Route 1 and supports the improvement of Route 1 interchanges.

In addition to a Coastal Development Permit, a determination of consistency with the approved Coastal Zone Management Plan is required from the California Coastal Commission before federal approval can be granted.

REQUIRED STUDIES

Air, Noise and Water Technical Reports
Initial Site Assessment (ISA)
Natural Environment Study (NES)
  Biological Assessment
  Wetlands Assessment
Historic Property Survey Report (HPSR)
  Archaeological Survey Report (ASR)
  Historic Architectural Survey Report (HASR)
  Finding of Effect

PERMITS, COORDINATION OR APPROVALS WHICH MAY BE REQUIRED

California Department of Fish and Game (1601)
U.S. Fish and Wildlife Service (Section 7)
U.S. Army Corps of Engineers (Section 404)
Regional Water Quality Control Board (Section 401)
State Historic Preservation Officer (SHPO)
Coastal Development Permit (Santa Cruz County)
Coastal Zone Consistency (California Coastal Commission)

CONCLUSION

Because of the potential to impact a number of threatened or endangered species, and its controversial nature, the likely environmental document for this project is an Environmental Impact Report/Environmental Impact Study (EIR/EIR) . The environmental document should be completed within 24 months of initiation of the required studies.

To initiate environmental coordination please submit a completed Environmental Coordination Request Form and attach 3 copies of 100-200 scale project plans for each alternative under consideration, including needs for access, staging, and storage areas as well as existing and proposed right-of-way.

RIGHT OF WAY DATA SHEET

TO: STEVE M. WYATT
OFFICE OF DESIGN

DIST 05 CO SCr RTE 1 PM KP0.0/27.0
E.A. 15030K
DATE September 18, 1997
PROJ. DESC.: OPERATIONAL IMPROVEMENTS

ROUTING: (1) R/W (Signature) (2) T. ~~EARLEY~~ (Signature) (3) UTILITIES (Signature) (4) T. RASMUSSEN (Signature) (5) STEVE WYATT (Signature) (6) ESTIMATE FILE (Clerical)

cc: T. ~~EARLEY~~; Wayne Thomas
Trans. Prog. Sacramento

SUBJECT: Right of Way Data and Cost Estimate - **Alternate: 1**

1. R/W Cost Estimate: (current cost)

A. Acquisition, including Excess Land and Damages to Remainder	$ 0.00
B. Utility Relocation (State share)	250,000.00
C. Clearance/Demolition	0.00
D. RAP	0.00
E. Title and Escrow Fees	0.00
Total R/W Estimate (current)	250,000.00

F. Construction Contract Work: $ 0.00

2. Parcel Data:

Type	Utilities	RR Involvements	
X	U4-1	None	X
A	-2	C&M Agrmt	
B	-3 3	Svc Contract	
C	-4	Lic/RE/Clauses	
D	U5-7	Misc R/W Work:	
	-8 6	RAP Displ	
	-9	Clear/Demo	
		Const Permits	

Total # none parcels
Areas: R/W -0.00 acres; Excess 0 acre; # of Excess Parcels 0

3. Description of Major Items of Construction Contract Work: N/A

4. General Description of R/W and Excess (zoning, use, major improvements, critical or sensitive parcels, etc.): None Required X
According to the PSR dated July 1997, there is no need for additional R/W.

5. Is there an effect on Assessed Valuation? Yes ☐ Not Significant ☐ No X.

6. Are Utility Facilities or Rights of Way Affected? Yes ☒ No ☐ (If yes, explain):

See attached memo from JAMES E. CHILDRESS dated September 18, 1997.

7. A. Are Railroad Facilities or Rights of Way Affected? Yes ☐ No ☒ (If yes, explain)
   B. Name(s) of railroad(s)
   C. When branch lines or spurs are affected, would acquisition and/or payment of damages to businesses served by the railroad facilities be more cost effective than perpetuating the rail? (See Procedural Handbook Volume 4a, Chapter 440 for further detail).
   Yes ☐ No ☐ (If yes, explain)

8. Were any sites with underground tanks, potentially hazardous wastes and/or material found?
   Yes ☐ None Evident ☒ (If yes, attach memorandum per Section 101.026 P&M Procedures Handbook).

9. Are RAP displacements required? Yes ☐ No ☒ (If yes, provide the following information).

   No. of single family ___ No. of business/nonprofit 0
   No. of multi-family ___ No. of farm 0 ___

   Based on ___ ___, it is anticipated that sufficient replacement housing wil be available without Last Resort Housing.

10. Are material, borrow and/or disposal sites required? Yes ☐ No ☒ Unknown ☐

11. Are there potential relinquishments and/or abandonments? Yes ☐ No ☒ (If yes, explain)

12. Are there existing and/or potential Airspace sites? Yes ☐ No ☒ (If yes, explain)

13. Anticipated Right of Way lead time requirements. 6 **MONTHS**

14. All R/W work will be performed by Caltrans' staff? Yes ☒ No ☐

Evaluations Prepared By:

1. R/W: Name James E Childress Date 9-19-97
   JAMES E. CHILDRESS
2. Railroad: Name James E Childress Date 9-19-97
   JAMES E. CHILDRESS
3. Utilities: Name James E Childress Date 9-19-97
   JAMES E. CHILDRESS

I have reviewed the above data and find it to be complete, current and accurate.

T A Rasmussen Date 9-19-97
THOMAS A. RASMUSSEN
Field Office Chief - District 10
Right of Way Department

Entered PMCS Screens ___/___/___, and ___/___/___ By ___

State of California
Agency

Business, Transportation and Housing

Memorandum

To: MR. Steven M. Wyatt
Project Manager

Date: September 18, 1997

File: 05-SCr-10-0.0/27.0
E.A. 45030K
Alt. 1-Soquel Avenue to 41st Avenue
Alt. 2-Morrissey Avenue to Soquel Avenue
Alt. 3-Ramp meter all onramps
Alt. 4-Soquel Avenue interchange
Alt. 5-Bay/Porter Avenue to Park Avenue

From: DEPARTMENT OF TRANSPORTATION

Subject: ESTIMATE OF CAPITAL COSTS FOR UTILITY RELOCATION

The estimate of costs for relocation of utility facilities to accommodate the above-referenced project to protect and/or relocate utilities to accommodate freeway construction on Route 1 between Santa Cruz and Capitola is:

Alternative 1	$250,000.00
Alternative 2	$250,000.00
Alternative 3	$ .00
Alternative 4	$ .00
Alternative 5	$250,000.00

Utilities in the project area include:

Power
Telephone, aerial and underground
Cable TV, aerial and underground
Gas, distribution and transmission
Water
Sewer

There are many utilities within the project area. Typically, power, telephone, CATV and gas are located longitudinally within existing right of ways and as such generally relocate at a

50/50 split of expenses. No information specific to locations was included with the request, this estimate anticipates the above circumstance for the longitudinal facilities.

Gas lines crossing the highway are generally transmission or large distribution mains. Relocation's for these facilities would involve State costs, at the least for the area within the right of way. However, no relocation's are anticipated as the pipes, if they are deep enough to be under our existing structural section, are likely toe be below our proposed construction influence.

Recommended lead time for utility relocation is 20 months. Investigation of underground sanitary sewer, water, power, telephone and gas facilities will be required.

Leadtime REG-RW to RTL (RW Cert) would be 6 months.

James E Childress

JAMES E. CHILDRESS
Utility Relocation Coordinator

State of California — Business, Transportation and Housing Agency

Memorandum

To: R. E. WADDINGTON
Central Region Division Chief
Project Development

Date: July15, 1997

File: SCr-1-0/27(KP)
0/16.8(PM)
EA: 05_– 45030k_____
Program: HB4N_____

From: DEPARTMENT OF TRANSPORTATION
Central Region - Project Development

Subject: PSR/PSSR/PR Data Base Certification

The attached PSR has been prepared under my direction and has been reviewed by appropriate District and Headquarters personnel.

The project is on State Route 1 from KP 0.0 to 27.0.
The work consists of Operational Improvements

The pertinent project factors which would affect programming are:

COST BREAKDOWN:

Construction:	Roadway	$ 14,900,000	Date: July,1997
	Bridge	$ 2,200,000	

Right of Way: (Escalated)	
Acquisition	$_____
Utilities	$ 400,000
Hazardous Waste	$_____
Relocation	$_____
Demolition & Clearance	$_____
R/W Total	$ 400,000

Support Effort	PY's
District PY's	
Design	40.0
Right of Way	3.0
Construction	30.0
Engineering Service Center	
Structures	
Design	10.0
Construction	5.0
METS and Others	
Design	_____
Constuction	_____
METS and Others	5.0

Right of Way Factors:

Number of Parcels -	0
Number of RAP -	0
Railroad Involvement -	Yes/**No**
Utility Relocation -	**Yes**/No

ENVIRONMENTAL FACTORS:

Document -	CE - **ND** - EIS
Historical -	Yes/No
Archaeological -	Yes/No

ENVIRONMENTAL FACTORS - CONTINUED:

Section 4 (f) -	Yes/No
Public Lands -	Yes/No
Fish & Game (1601 Permit) -	**Yes**/No
Hazardous Waste -	Yes/No
Material or Disposal Site Clearance	Yes/**No**
Endangered Species	Yes/No

The Environmental, Right of Way and Program Management Branches certify that the above pertinent factors are correct and are reflected in their data base:

I certify that the above environmental factors are appropriate for environmental issues and clearances.
Based on very early preliminary information prior to approval of final PSR

Gary R. Pal
for Gary Ruggerone, Sr. Env. Planner
Environmental Management - Branch B

7/31/97
Date

I certify that the above programming factors listed have been entered into the right of way data base.

Jim Arnberg
Right of Way Administration

Date

I certify that the above programming factors listed have been entered into the data base with a _____ start date.

NORM FOLEY
Program Management

Date

This PSR has been prepared under my direction and I concur with the scope cost and schedule for the preferred alternative. The preferred alternative has been found by the Project Development Team to best meet the needs of the users and the requirements of the Department.

July 25, 1997

Steven M. Wyatt
Project Manager

Date

cc: RM
NSF
???
JML/SKK

Distribution:

Hdq. Design & Local Prog. (2) or (4 PSSR) - R. Weiss
Transp. Prog. (2) - J. Nicholas

Hdq Maint. - Rob Marsh

Initials of Proj Mgr. (3) - Original + 2 cc's
Res. Engr.(S.DiGrazia, PM)
Dist. Maint. - MAG

District Traffic - NQS

D-10 - Traffic - Hassan Marei

Dist. Const.

SNP
JKL
PSR Files or PSSR Files
Data Center.

Rev. 6/97

PSR COST ESTIMATE

05-SCr-1
KP 0/27.0(PM 0/16.8)
EA45030K
HB4N

Caltrans Metric

PROJECT DESCRIPTION:

Limits On Route 1 in Santa Cruz County Between the Monterey County line and the Route 1/17 Separation.

Proposed Improvement (Scope) Operational Improvements

Alternate. 1- 5

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$ 14,500,000
TOTAL STRUCTURE ITEMS	$ 2,200,000
SUBTOTAL CONSTRUCTION COSTS	$ 16,700,000
TOTAL RIGHT OF WAY (Current Value)	$ 750,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	$ 17,500,000

Reviewed by District Program Manager _____
(Signature)

Approved by Project Manager _____ Date 9-22-97
(Signature)

Phone No. (805) 549-3079

PSR COST ESTIMATE

05-SCr-1
KP 0/27.0(PM 0/16.8)
EA45030K
HB4N

I. ROADWAY ITEMS

Section 1 Earthwork	Quantity	Unit	Unit Price	Unit Cost	Section Cost
Roadway Excavation	24,495	M3	$ 13.00	$ 318,435	
Imported Borrow	45,900	M3	$ 17.00	$ 780,300	
Clearing & Grubbing		LS	$	$ 50,000	
Develop Water Supply				$	$
				Subtotal Earthwork	$ 1,149,000
Section 2 Structural Section					
PCC Pavement (Depth)			$	$	
PCC Pavement (Depth)			$	$	
Asphalt Concrete	22,477	TONN	$ 44.00	$ 988,988	
Lean Concrete			$	$	
Cement Treated Base			$	$	
Aggregate Base	25,450	M3	$ 26.00	$ 661,700	
Aggregate Subbase		M3	$	$	
Permeable Material Blanket/Edge Drains		M3	$	$	
				Subtotal Pavement Structural Section	$ 1,651,000
Section 3 Drainage					
Large Drainage Facilities		LS	$	$ 80,000	
Storm Drains			$	$	
Pumping Plants			$	$	
Project Drain (X-Drains, overside, etc.)		LS	$	$ 135,000	
				Subtotal Drainage	$ 215,000

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

PSR COST ESTIMATE

05-SCr-1
KP 0/27.0(PM 0/16.8)
EA45030K
HB4N

Section 4 Specialty Items	Quantity	Unit	Unit Price	Unit Cost	Section Cost
Retaining Walls	LS		$	$ 2,760,000	
Noise Barriers			$	$	
Barriers and Guardrails	4730	M	$ 164.00	$ 776,000	
Equipment/Animal Passes			$	$	
Highway Planting		LS	$	$ 70,000	
Irrigation Modification		LS	$	$ 60,000	
Relocate Private Irrigation Facilities		$	$		
Erosion Control		LS	$	$ 15,000	
Slope Protection		LS	$	$ 35,000	
Water Pollution Control		LS	$	$ 50,000	
Hazardous Waste Work			$	$	
Environmental Mitigation		LS	$	$ 500,000	
Resident Engineer Office		LS	$	$ 50,000	
				Subotal Specialty Items	$ 4,316,000

Section 5 Traffic Items					
Lighting		LS	$	$ 90,000	
Traffic Delineation Items		LS	$	$ 265,000	
Traffic Signals		LS	$	$ 500,000	
Overhead Sign Structures		LS	$	$ 30,000	
Roadside Signs		LS	$	$ 10,000	
Traffic Control Systems		LS	$	$ 1,625,000	
Traffic Management Plan		LS	$	$ 405,000	
				Subtotal Traffic Items	$ 2,925,000

TOTAL SECTIONS 1-5 $ 10,256,000

PSR COST ESTIMATE

05-SCr-1
KP 0/27.0(PM 0/16.8)
EA45030K
HB4N

Section 6 Minor Items			Unit Cost	Section Cost
Subtotal Sections 1-5	$ 10,256,000	x (5-10%)	$ 513,000	
		TOTAL MINOR ITEMS	$ 500,000	
Section 7 Roadway Mobilization				
Subtotal Sections 1-5	$ 10,256,000			
Minor Items	$ 513,000			
Sum	$ 10,769,000	x (10%)	$ 1,077,000	
	TOTAL ROADWAY MOBILIZATION		$ 1,000,000	
Section 8 Roadway Additions				
Supplemental Work				
Subtotal Sections 1-5	$10,256,000			
Minor Items	$ 513,000			
Sum	$ 10,769,000	x (5-10%)	$ 500,000	
Contingencies				
Subtotal Sections 1-5	$ 10,256,000			
Minor Items	$ 513,000			
Sum	$ 10,769,000	x (25%)*	$ 2,250,000	
		TOTAL ROADWAY ADDITIONS	$ 2,750,000	
		TOTAL ROADWAY ITEMS (Total of Sections 1-8)		$ 14,500,000

Estimate Prepared by: Steve Wyatt Phone: (805) 549-3079 Date: 7-28-97

* Use 25% at the PSR stage or a higher or lower rate if justified.

PSR COST ESTIMATE

05-SCr-1
KP 0/27.0(PM 0/16.8)
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HB4N

II. STRUCTURE ITEMS

	STRUCTURE No. 1	No. 2	No. 3
Bridge Name *	La Fonda O.C.	Capitola Ave. O.C.	
Structure Type	CIP/PS Box	CIP/PS Box	
Width ft. (out to out)	52'-0"	52'-0"	
Span Lengths Ft.	192'-0"	196'-0"	
Total Area Sq. Ft.	9984 sf.	10,192 sf.	
Footing Type (pile/spread)	Pile	Pile	
Cost Per Sq. Ft. (incl. 10% mobilization and 25% contingency)	$ 92.00	100.00	
Total Cost for Structure	$ 920,000	$1,100,000	

Other (Demo) $180,000

* Add additional structures as necessary

Subtotal Structure Items	$ 2,200,000
Railroad Related Costs	$
TOTAL STRUCTURE ITEMS	**$ 2,200,000**

COMMENTS:
Based on 1990 APS estimates that were escalated.

Estimate Prepared by : Steve Wyatt Phone: (805) 549-3079 Date: 7-28-97

PSR COST ESTIMATE

05-SCr-1
KP 0/27.0(PM 0/16.8)
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(If appropriate attach additional pages and backup)
III. RIGHT OF WAY ITEMS

Right of Way estimates should consider the probable highest and best use and type and intent of improvements at the time of acquisition. Assume acquisition including utility relocation occurs at the right of way certification milestone as shown in the Funding and Scheduling Section of the PSR. For further guidance see Chapter I, Caltrans, Right of Way Procedural Handbook.

	Current Values (Future Use)	Escalation Rates	Escalated Values*
Acquisition, including excess lands, damages, and Goodwill	$	%	$
Utility Relocation (State share)	$750,000	%	$750,000
Relocation Assistance	$	%	$
Clearance/Demolition	$	%	$
Title and Escrow Fees$		%	$

TOTAL RIGHT OF WAY (Escalated Value)* $

Anticipated Date of Right of Way Certification:

Construction Contract Work
Brief Description of Work:

12 parcels may be needed (for construction easements)
Minimal utility relocation may be required.

Right of Way Branch Cost Estimate for Work $750,000

COMMENTS:

Estimate Prepared by: J. Childress Phone: (209) 948-7852 Date:9-18-97

* Escalated to assumed year of advertising

(If appropriate, attach additional pages and backup including Right of Way Data Sheet).

State of California

Business, Transportation and Housing Agency

Memorandum

To : District 05
Steve Wyatt

Date : September 8, 1997

File No. : 05-SCr-01-kp0.0/27.0
(pm 0.0/16.8)
Operational Improvements
05-45030K

Gary Ruggerone

From : DEPARTMENT OF TRANSPORTATION
Gary Ruggerone
Office of Environmental Management

Subject : PRELIMINARY ENVIRONMENTAL EVALUATION REPORT (PEER)

Pursuant to your request dated July 7, 1997, the District 5 Office of Environmental Management has completed its preliminary review of the proposed project. The intent of this report is to assess issues of concern that should guide the development of the project to avoid or minimize adverse effects to the environment. This report is based on field review, office research and the project description. Given the current project description, issues which could affect project schedule:endangered species, wetlands, cultural resources.

PROJECT DESCRIPTION

The project is located on State Route 01 in Santa Cruz County. It extends from the Monterey/Santa Cruz County line (postmile 0.0) north to the Route the 01/17 separation (postmile 16.8). It is proposed to improve the operation of Route 01 in phases. All improvements would be constructed in the southbound direction only. Work will take place in the southbound shoulder or median.

Improvement 1 Auxiliary lane - Soquel Drive to 41st Avenue
Improvement 2 Auxiliary lane - Morrissey Avenue to Soquel Avenue Interchange
Improvement 3 Ramp metering
- Rio Del Mar Overcrossing
- State Park Drive Overcrossing
- Park Avenue Undercrossing
- Bay Avenue Undercrossing
- 41st Avenue Overcrossing
- Soquel Drive Overcrossing
- Morrissey Boulevard Overcrossing

Improvement 4 Realign ramps - Soquel Avenue Interchange
Improvement 5 Auxiliary lane - Bay Avenue Undercrossing to Park Avenue Undercrossing

AIR, NOISE, AND WATER

Air, Noise and Water Quality Technical Reports will be required to determine impacts from the proposed auxiliary lanes. The proposed ramp metering will necessitate consultation with the local Air Pollution Control District. A Notice of Intent will be filed with the Regional Water Quality Control Board and a Stormwater Pollution Prevention Plan shall be completed by the contractor. Air, Noise and Water studies will require approximately one full week each for this project.

HAZARDOUS WASTE

At this time there are no expected hazardous waste concerns associated with this project. As detailed plans are developed the project will need further review. To facilitate this review, the Hazardous Waste Coordinator will require information regarding the areas to be excavated, the total amount of surplus vegetation, areas where excavation will be next to Caltrans existing right-of-way and any new right-of-way to be acquired.

BIOLOGICAL RESOURCES

The project area extends from the Pajaro River to tributaries of the San Lorenzo River (Carbonera Creek and Branciforte Creek) and from agricultural land to an urbanized area. There are 17 blue line streams in the project area, but it appears the project has the potential to impact two; Rodeo Gulch, and Arana Gulch. Vegetation in the project area is a mix of native and ornamental species. Notable among the native species are oak trees, redwood trees, willows and Monterey cypress.

The project area was evaluated for its potential to impact biological resources. Methodology included observation and review of the California Natural Diversity Database for the Santa Cruz, Soquel and Watsonville West Quadrants. Review of the California Natural Diversity Database indicated 2 threatened or endangered species that existing in the project area. These are the Santa Cruz long-toed salamander and the Tidewater goby.

A field review was conducted on August 26. A small drainage runs adjacent to Route 01 near the proposed Soquel Avenue southbound off-ramp and the proposed southbound auxiliary lane between Morrissey Boulevard and Soquel Avenue. There was standing water in the drainage at the time of the field review. The area is overgrown with vinca, eucalyptus, willow and blackberry brambles. The addition of an auxiliary lane between Morrissey Boulevard and Soquel Avenue will require the placement of a retaining wall near Arana Gulch. If the existing shoulder can not accommodate the proposed auxiliary lane and standard shoulder, the project may impact the area of the drainage. Further assessment will be necessary.

Required Technical Reports A Natural Environment Study (NES) shall be required to thoroughly evaluate biological communities in the area, the existing level of disturbance and the important biological resources in the area. If the NES determines that endangered species inhabit the project area a Biological Assessment for formal consultation with U.S. Fish and Wildlife Service (USFWS) will be required per Section 7 of the Endangered Species Act. A wetlands assessment will also be required. The Biological Assessment and Wetlands Assessment will be incorporated into the NES. It can take six months for the USFWS to issue a Biological Opinion in response to formal consultation.

RECOMMENDED MEASURES

Tree Removal As proposed, the project would remove a number of oaks and other native trees. Legislation and Caltrans' policies call for the preservation of existing trees. If it is not possible to avoid tree removal, appropriate replacement planting will be required. To facilitate replacement plans, trees should be identified and mapped during project development. If on-site mitigation is not possible, opportunities for off-site mitigation must be investigated. A replacement ratio of 10:1 (planted trees to removed trees) is recommended. Mitigation costs for replacing oak trees at 10:1 can be estimated by multiplying the number of trees removed times ten to determine the number of replacement plants. That number is then multiplied by the cost to purchase and plant each tree, $50. Add to that the cost for a two-year plant establishment program (approximately $15,000). For example, replacement planting for 30 oak trees at 10:1 can be estimated at $30,000. This figure does not include the cost of any right-of-way acquired to accommodate replacement plants.

Endangered Species Surveys shall be conducted during the appropriate season to delineate species locations. Measures to protect the endangered species may include, but are not limited to the following: establishment of Environmentally Sensitive Areas (ESA), prevention of barriers to stream passage, relocation.

Wetlands Mitigation ratios recommended for permanent wetland impacts can vary from 2:1 to 10:1 depending on, among other criteria, the quality of the habitat impacted and the proximity of the mitigation site to the impacted area. Costs for wetland mitigation have been estimated at $75,000 per acre. The estimate does not include the cost of acquisition if off-site mitigation is required.

Cliff Swallows Cliff Swallows may nest on bridges in the project area. Federal and state laws protect migratory birds, their occupied nests and their eggs. These laws apply primarily where reconstruction activities on existing structures could affect the protected species, which includes Cliff Swallows.

If it is not possible to schedule all bridge work outside the nesting period (February 15 - September 1) all nests which might be destroyed by the project must be removed before the swallow colony returns to the nesting site. Methods of removal are not

specified but must be repeated at a frequency necessary to prevent nest completion or until a swallow exclusion device is in place.

Intact swallow nests are assumed to be occupied during the nesting period. Removing nests at this time requires a permit from the US Fish & Wildlife Service. This permit requires compelling justification; the work must be shown to be essential to public safety and critical in time.

NEPA/404 MEMORANDUM OF UNDERSTANDING (MOU) Soquel Avenue interchange improvements and the auxiliary lane between Morrissey and Soquel Avenue may impact wetlands near Arana Gulch. If the project has wetland impacts and those impacts necessitate an individual ACOE Section 404 Permit, the NEPA/404 MOU must be observed. This will require development and evaluation of avoidance alternatives (Section 404 of the Clean Water Act). An alternatives analysis must show that there is no practicable alternative to avoid the wetlands and the sensitive habitat they support. If no avoidance alternative is practicable, the least environmentally damaging practicable alternative (which would show that the impacts have been minimized to the extent feasible and that mitigation is incorporated into the project to lessen the adverse effects) must be chosen.

The NEPA/404 MOU requires that if an individual permit is anticipated, Caltrans circulate the Draft PSR through the Army Corps of Engineers. To satisfy the MOU, the PSR shall include a wetland avoidance alternative.

CULTURAL RESOURCES

Inventory Review A review of Caltrans District 5 cultural resource files was conducted. The Capitola Avenue overcrossing was built in 1948. Structures built less than fifty years ago are not considered eligible to the National Register of Historic Places. Because the Capitola Avenue undercrossing will turn 50 in 1998, it will be necessary to evaluate it. A number of archaeological sites are recorded within the project area. The project must be reviewed to determine whether or not the project will have an impact on any significant cultural resources.

Resources cannot be avoided Should it be determined that the resources cannot be avoided during construction, Phase II and Phase III studies are required. A Historic Property Survey Report/Determination of Eligibility may be required. Prior to public release of the draft environmental document Phase I and Phase II studies, including (SHPO) concurrence on eligibility for listing in the National Register of Historic Places (NRHP), must be determined. The studies could take between 12-24 months to complete.