Transportation Planning Fact Sheet

State Route (SR) 1 in Monterey County

Purpose of this Transportation Fact Sheet:

Transportation Planning Fact Sheets provide one comprehensive summary document that captures physical, social, political, and development characteristics along State Routes and provides web links to various planning resources and documents. Fact sheets are to be used as supplemental planning documents to existing to Transportation Concept Reports (TCRs) and to future Corridor System Management Plans (CSMPs).

Route Description:

SR 1 is approximately 100 miles in length. According to the *Transportation Concept Report for State Route 1 in District 5* (2006), SR 1 is divided into four segments, see map below. SR 1 in Monterey originates at the Monterey/San Luis Obispo County Line and extends northerly, hugging the coast in a serpentine formation. SR 1 passes the Cities of Seaside, Sand City, Monterey, Carmel-by-the-Sea, and Pacific Grove before crossing the Santa Cruz/Monterey County Line. Please reference map below.

- Traffic: tourist and recreation, agricultural and trucking, and local and regional
- Access Control: 2 to 4 lane conventional highway, expressway, and freeway
- Functional Classification: rural minor arterial, urban minor arterial, and principal arterial
- Terrain: the terrain alternates between rolling and mountainous

Traffic Volumes:

- 2015 ADT: 2,500 - 92,200
- 2030 ADT: 3,000 - 104,000

Truck Volumes:

- Peak Hour: 3 - 6%
- ADT: 3.5 - 9.7%

Future Concept:

According to the *Transportation Concept Report for State Route 1 in District 5* (2006), the future concept for SR 1 in Monterey County is provided by Level of Service (LOS):

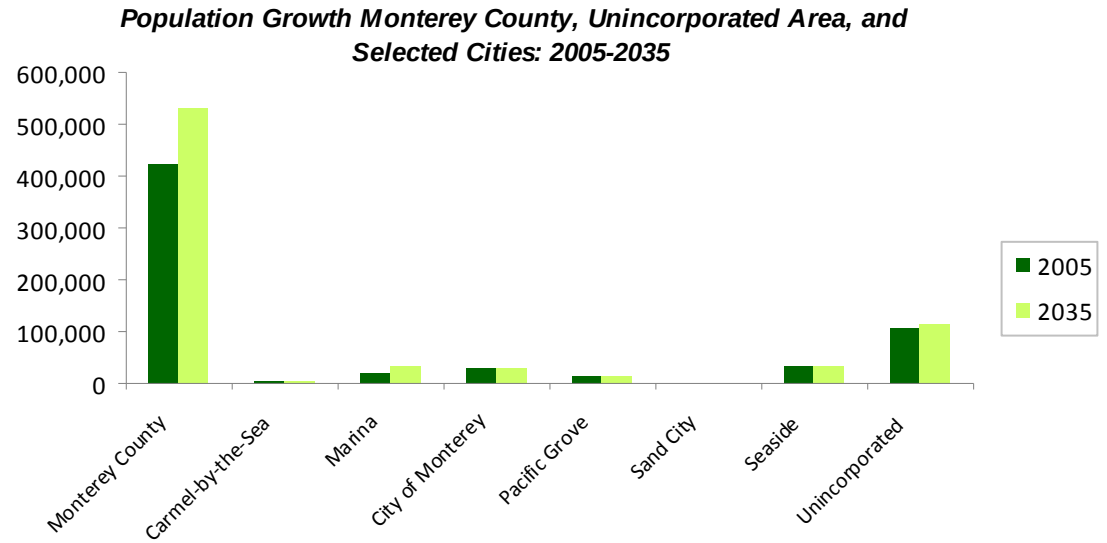
Segment	Begin Postmile	End Postmile	Route Concept
Segment 1 (TCR Segment 12)	0.00	67.90	LOS D, 2-lane conventional highway
Segment 2 (TCR Segment 13)	67.90	72.30	LOS D, 2-lane conventional highway
Segment 3 (TCR Segment 14)	72.30	90.98	LOS D, 4 and 6-lane conventional highway or 6-lane freeway depending on section
Segment 4 (Mon) (TCR Segment 15)	90.98	R102.03	LOS D, 4-lane conventional/expressway/ freeway

Route Designation:

- Freeway and Expressway System
- High Emphasis Route
- Interregional Road System
- National Highway System
- Scenic Highway System
- Terminal Access Route
- Truck Restrictions

County Profile:

- Located on the Central Coast of California, Monterey County consists of 12 incorporated cities, 6 of which are located near SR 1: Carmel-By-the-Sea, Marina, Monterey, Pacific Grove, Sand City, and Seaside.
- The Association of Monterey Bay Area Governments' Monterey Bay Area Regional Growth Forecast projects the population of Monterey County will grow to 530,362 from 422, 632.



Source: Association of Monterey Bay Area Governments. (2008). *Monterey Bay Area Regional Growth Forecast*

- 51% of Monterey County Residents over 5 years of age speak a language other than English at home (US Census Bureau).
- Government services and farming dominate the economy of Monterey County, employing approximately 49% of the workforce in 2007. Strawberries are the principal crops for agriculture and many of the public sector jobs are associated with California State University, Monterey Bay, and the state correctional facility in Soledad. Recreation and leisure, and professional services, while making up a small percentage of the total economy, experienced strong absolute growth in 2007.

Bicycle Access:

- According to the Caltrans-District 5 *Bicycle Map: For State Highways of the Central Coast* (2004), all of the State Highways are open to bicyclist except at a few sections of freeways.
- A majority of SR 1 is open to bicycles, with the exception of the portion inside the Cities of Monterey, Seaside, Marina, and Castroville, and a small section between the Salinas Road interchange and the Santa Cruz boarder. In each case, the Pacific Coast Bicycle Route and other local routes provides access.

Public Transportation:

Public transit service in Monterey is limited. However the following services are or in the future will be available:

- Monterey-Salinas Transit provides urban transit service within and among the urban communities on the Greater Monterey Peninsula. MST also provides inter-city service for travel from the Peninsula east to Salinas and to Watsonville in Santa Cruz County.
- Caltrain will extend commuter rail service to Monterey County beginning in 2011, adding stops in the cities of Pajaro, Castroville, and Salinas.
- The Monterey Peninsula Fixed Guideway Service will provide inner-city rail service along the Monterey Peninsula and in the Salinas area beginning 2014. The system will connect to the proposed Caltrain extension in Salinas.

Intercity Rail Service:

Amtrak provides rail and bus service in Monterey County. The Coast Starlight runs from Seattle to Los Angeles with three stations in Monterey: Salinas, Gilroy, and King City. Additionally, the Coast Starlight is contiguous with the Pacific Surfliner between San Luis Obispo and Los Angles, providing the region access to that rail line, which runs from San Luis Obispo to San Diego. Finally, 7 Thruway Bus Stations are located in Monterey County: 1 in Carmel-by-the-Sea, 5 in Monterey, and 1 in Salinas. These stations connect the region to the Amtrak's nation rail network.

Airport:

Six airports are located throughout the Monterey County: The Monterey Peninsula Airport, Clark Ranch, San Ardo Field, Salinas Municipal Airport, Marina Municipal Airport, Mea Del Rey Municipal Airport. Of these six, the Monterey Peninsula Airport provides the most extensive public regional airport services.

Transportation Agencies:

- Association of Monterey Bay Area Governments – MPO
- Transportation Agency for Monterey County - RTPA

TCR General Recommendations:

According to the *Transportation Concept Report for State Route 1 in District 5* (2006), the recommended actions for SR 1 in Monterey County include:

Segments 12 & 13:

- Provide standard width travel lanes and 4-foot shoulders where possible.

- Minimize and consolidate access.
- Evaluate need and provide operational improvements including turn-outs and channelization for turning.
- Implement CHMP actions.
- Accommodate California Coastal Trail in right-of-way, as circumstances require.

Segments 14:

- Widen 2-lane to 4-lane and 4-lane to 6-lane.
- Consolidate access points where feasible south of SR 68 West (Sub-segment 14A)
- Install operational improvements.
- Widen to 6-lanes north of SR 68 West.
- Install ITS elements to improve operations.
- Pursue commuter and inter-city rail extension to Monterey Peninsula for commuter and interregional travel.
- Pursue non-highway mobility measures (rail, transit, and bicycling) for regional travel among Monterey Bay destinations.

Segment 15:

- Construct 4-lane expressway or equivalent capacity in bypass, light rail, and/or other modes.
- Consolidate access points where feasible.
- Pursue commuter and inter-city rail extension to Monterey Peninsula for commuter and interregional travel.
- Pursue non-highway mobility measures (rail, transit, and bicycling) for regional travel among Monterey Bay destinations.
- Provide standard width shoulders.

State Highway Projects:

For an updated list of State Highway projects (including State Transportation Improvement Plan/State Highway Operation and Protection Program) along SR 1 in Monterey County, click on the Caltrans, District 5, *Status of Projects* web link: http://www.dot.ca.gov/dist05/projects/.

- For more information about Caltrans Monterey County highway projects visit: http://www.dot.ca.gov/dist05/projects/#mon
- Transportation Projects identified in the identified in the TAMC 2005 Regional Transportation Plan: http://www.tamcmonterey.org/programs/rtp/index.html
- Local Agency STIP Projects – Caltrans Local Assistance Website: http://www.dot.ca.gov/dist05/local/stip_index.html

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Transportation Concept Report

For

State Route 1 in District 5

DEPARTMENT OF TRANSPORTATION, DISTRICT 5
System Planning Branch

APRIL 2006

I approve this *Transportation Concept Report* for State Route 1 in District 5 as the guide for future decisions, investigations, and investments in the highway corridor.

Recommend Approval:

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EXECUTIVE SUMMARY

This Transportation Concept Report (TCR) is the long-term planning document for State Route 1 (Route 1 or SR 1) in District 5 of the California Department of Transportation (Caltrans). The TCR (1) evaluates current and projected conditions along the route; (2) establishes a twenty-year planning vision or concept; and (3) recommends long- and short-term improvements to achieve the concept. The most recent previous TCR updates for Route 1 in District 5 were completed in 1987 and 1990.

Route 1 extends some 265 miles through four counties in District 5: Santa Barbara, San Luis Obispo, Monterey, and Santa Cruz. Traffic characteristics, existing facilities, and environmental setting vary considerably along the corridor. Each county has its own regional transportation planning agency (RTPA) or metropolitan planning organization (MPO) that performs regional transportation planning. In preparing the TCR, Caltrans consulted each of these agencies and referenced its most recent plan (RTP or MTP). Caltrans also consulted the public. Meetings were held with residents, elected officials, and local and regional transportation agency staff in each of the four counties.

The TCR reflects regional plans for accommodating travel demand on the State Route as well as local concerns and priorities. However, Caltrans is charged with the additional responsibility to ensure that its highways provide reasonable interregional traffic flow, safety, continuity, and efficient goods movement to sustain the State's economy. The TCR provides this statewide perspective. The TCR offers descriptive commentary on areas where goods movement and interregional travel are constrained.

Commitments are developing for alternatives that reduce the need to rely on single-occupant motor vehicle travel. The TCR provides a limited qualitative assessment of potential contributions of modal alternatives, local land use policies, and transportation demand management efforts.

Route segments and sub-segments were identified for analyzing traffic data on Route 1. Ideally, the traffic analyses, along with alternatives for accommodating or reducing travel demand, and local plans, would provide the basis for establishing a traffic concept for each route segment. In several urban areas along Route 1, however, intersection operations rather than segment flows control level of service. Intersection analyses were not consistently available, which has made analysis more difficult in urbanized settings.

The ability to provide capacity to accommodate rising volumes has become increasingly difficult in California. Historically, District 5 targeted a peak hour concept of LOS C or better for state highways. (See Appendix A for a definition of level of service or "LOS" and descriptions of the six levels.) However, in each county, current operations, existing development patterns, environmental values, local plans, and/or projected growth are such that achieving even LOS D will require major improvements and concerted efforts to manage demand.[1] In some segments, the California Coastal Act prohibits additional capacity. Finally, along several stretches of the highway, issues arise from competing objectives and/or complex traffic flows demanding analysis that is beyond the scope of a TCR. For such areas, the TCR recommends further study: a corridor study or an area/network study.

[1] Both Santa Barbara and Monterey Counties have Congestion Management Programs that reflect LOS D as the standard for state highways within the counties.

The chart below summarizes the setting, major considerations and route concepts proposed for each segment of Route 1 in District 5. The backgrounds and analyses that were the bases for these concepts are detailed county-by-county in Part Two of this report.

Summary of Route 1 Segment Considerations and Concept LOS for 2025

SEG-MENT	LIMITS	MAJOR CONSIDERATIONS	ROUTE CONCEPT
Santa Barbara County			
1	US Route 101 Junction to State Route 246	- 2-4-lane expressway and conventional highway - Increasing commuter traffic to South Coast job sites - Winding roadway through rolling terrain - Limited passing opportunities due to sight restrictions - Designated California Scenic Route - Erosion/rockslide potential adjacent to cut walls - Frequent closures - Narrow bridges over El Jaro Creek - Pacific Coast Bike Route	Peak LOS D or better/ provide operational improvements such as passing lanes and channelization.
2	State Route 246 to Purisima Road	- 4-lane conventional highway coincident with Ocean Avenue (State Route 246) and H Street through central Lompoc - Multiple signalized intersections - Multiple mid-block driveways for commercial development - Road maintenance - Interregional, regional, and local (main street) traffic - Segment operations controlled by intersections	Peak LOS C/D or better/ evaluate effects of Central Avenue extension on Route 1; widen NB Santa Ynez River Bridge for cyclists; consider designating parallel arterials as directional couplets in Lompoc.
3	Purisima Road to Orcutt Expressway	- 4-lane conventional highway and expressway - Traffic operations at intersection of H Street with Harris Grade and Purisima Roads - Access to Allan Hancock College, Vandenberg Village, and Vandenberg Air Force Base - Continuity of bicycle lanes - Aesthetics - Speeding	Peak LOS C or better/ minimize and consolidate points of access.
4	Orcutt Expressway to Santa Barbara/San Luis Obispo County Line	- 2-4-lane expressway and conventional highway - Narrow travel lanes, narrow/absent paved shoulders, and narrow bridges - Slow-moving agricultural vehicles - Insufficient turning lanes - Discontinuous bicycles lanes - Pedestrian/vehicular conflicts in Guadalupe - At-grade crossing of railroad tracks near SR 1/166 intersection blocking access to Santa Maria services when trains are present	Peak LOS C or better/ widen non-standard lanes and shoulders; add passing lanes or turn-outs; add channelization for turns; improve local circulation in Guadalupe; provide elevated railroad crossing on SR 166 or parallel alignment in Guadalupe; widen Santa Maria River Bridge.

SEG-MENT	LIMITS	MAJOR CONSIDERATIONS	ROUTE CONCEPT
San Luis Obispo County			
5	Santa Barbara/San Luis Obispo County Line to Halcyon Road	- 2-lane conventional highway - Vertical undulations in roadway - Seasonal flooding over roadway - Hard turns at Willow Road and Halcyon Road - Slow-moving agricultural vehicles - Proliferation of low density development in Mesa area - High percentage of trucks in traffic mix - California Coastal Zone	Peak LOS C/D or better/ improve vertical and horizontal alignments; consolidate driveways to limit access points; provide channelization for turns; support extension of area county road(s) to US 101.
6	Halcyon Road to US Route 101 Junction (Pismo Beach)	- 2-lane conventional highway - Direct access to residential, beach-related, commercial, and light industrial uses - Heavy seasonal recreational traffic - Rural and urban sections passing through Oceano, Grover Beach, and Pismo Beach - Multiple signalized intersections - Roadside parking - Potential for local multi-modal programs: shuttles and bicycles; land use options incorporating parking, park and ride - California Coastal Zone	Peak LOS C/D or better/ widen to four lanes where feasible; improve local circulation; consolidate driveways to limit access points; provide Class II bicycle facilities throughout; improve pedestrian access.
7	US Route 101 Junction (San Luis Obispo) to Highland Drive	- 4-lane urban highway - Circuitous ramp access from/to US 101 - Heavy local, regional, and interregional traffic along Santa Rosa Street - Multiple mid-block access points to commercial uses and offices - Main access to Sierra Vista Hospital via Murray Street - Inconclusive past studies of alternative alignments for Segment 7 and sub-segment 8A. - Segment operations controlled by intersections - Heavy bicycle and pedestrian traffic at Foothill Boulevard - California Coastal Zone	Peak LOS D or better/ improve US 101/SR 1 interchange; evaluate potential for widening to six lanes; evaluate bypass/relinquishment; evaluate improvements at Foothill Boulevard intersection; improve transit/TDM; improve pedestrian access; synchronize signals; consider local CSS proposals; analyze potential for CMS and HAR on NB US 101 re: SR 1 conditions.
8	Highland Drive in San Luis Obispo to South Bay Boulevard in Morro Bay	- 4-lane rural expressway - High speed traffic - Signalized intersections at Cuesta College and regional park - Major institutional (employment) centers along highway - Inconclusive past studies of alternative alignments for Segment 7 and sub-segment 8A. - Special designations: Scenic Byway/ All American Road, State Scenic Highway - California Coastal Zone	Peak LOS C or better/ minimize and consolidate access; convert conventional to expressway and expressway to freeway where feasible.

SEG-MENT	LIMITS	MAJOR CONSIDERATIONS	ROUTE CONCEPT
San Luis Obispo County, cont.			
9	South Bay Blvd in Morro Bay to State Route 46	- 4-lane expressway and freeway with 2-lane conventional highway north of Cayucos - Parks and beach-related activities, residential development, and urban uses along highway between north Morro Bay and Cayucos - Regional (commuter) and interregional (tourist) traffic - Special designations: Scenic Byway/ All American Road, State Scenic Highway - California Coastal Zone	Peak LOS C/D or better/ in 9A & 9B: consolidate access to convert 4-lane expressway sections to freeway; improve interchange with SR 41 (and Main Street); in 9C, consolidate access; evaluate need for passing lanes; install CMS south of SR 46.
10	State Route 46 to San Carpoforo Creek	- 2-lane expressway and conventional highway - Special designations: Scenic Byway/ All American Road, State Scenic Highway - Coastal zone - Planned realignment away from coastline north of Cambria - Potential development of Hearst Ranch property - California Coastal Zone	Peak LOS D or better/ minimize and consolidate access; improve vertical and horizontal alignments; widen non-standard lanes and shoulders.
11	San Carpoforo Creek to San Luis Obispo/ Monterey County Line	- 2-lane conventional highway - Special designations: Scenic Byway/ All American Road, State Scenic Highway - Within Coast Highway Management Plan (CHMP) area - Slow-moving traffic - Rockslides and storm-related road damage - California Coastal Trail to be in right-of-way in some areas - California Coastal Zone	Peak LOS D or better/ minimize and consolidate access; provide 12-foot travel lanes & 4-foot shoulders where possible; implement CHMP actions.

SEG-MENT	LIMITS	MAJOR CONSIDERATIONS	ROUTE CONCEPT
Monterey County			
12	San Luis Obispo/ Monterey County Line to Malpaso Creek	- 2-lane conventional highway - Special designations: Scenic Byway/ All American Road, State Scenic Highway - Within Coast Highway Management Plan (CHMP) area - Slow-moving traffic - Rockslides and storm-related road damage - Congestion in Big Sur area - Access to State Parks/recreational facilities - California Coastal Trail to be in right-of-way in some areas - California Coastal Zone	Peak LOS D or better/ minimize and consolidate access; provide 12-foot travel lanes & 4-foot shoulders where possible; implement CHMP actions.
13	Malpaso Creek to Carmel River	- 2-lane conventional highway - Special designations: Scenic Byway/ All American Road, State Scenic Highway - Within Coast Highway Management Plan (CHMP) area - Slow-moving traffic - Rockslides and storm-related road damage - Access to State Parks/recreational facilities - Low density residential development/driveways - California Coastal Trail to be in right-of-way in some areas - California Coastal Zone	Peak LOS D or better/ minimize and consolidate access; provide 12-foot travel lanes & 4-foot shoulders where possible; implement CHMP actions.
14	Carmel River to State Route 156 West	- 2 to 4-lane conventional highway to SR 68 West; 4 to 6-lane freeway beyond - Intersections with state highways: 68 West, 68 East, 218, and 156 and major county roads: G16 (Carmel Valley Road) and G17 (Reservation Road) - Congestion: heavy local and regional (commuter) and interregional (tourist) traffic - Direct access to driveways and City of Carmel local road system - Access to State Parks/recreational facilities - California Coastal Zone	Peak LOS D or better/ widen 2-lane to 4-lane and 4-lane to 6-lane and consolidate access south of SR 68 West where possible; 6-lane freeway with auxiliary lanes where needed north of SR 68 West; install ITS elements to aid operations (loops, radar, CMS, HAR, ramp meters).
15	State Route 156 West to Monterey/ Santa Cruz County Line	- 2-lane conventional highway with multiple at-grade intersections - Multiple unpaved driveways and points of access to agricultural operations - Elkhorn Slough/drainage area with environmental resources of inestimable value - Most heavily traveled 2-lane conventional highway in District 5 - Controlled as safety corridor with daytime headlights requirement - Increasing volumes related to area growth and interactions with other state and local facilities - California Coastal Zone	Peak LOS D or better/ 4-lane conventional and expressway or equivalent capacity, light rail, or other mode; limit and consolidate access Conduct multi-agency network study.

SEG-MENT	LIMITS	MAJOR CONSIDERATIONS	ROUTE CONCEPT
Santa Cruz County			
16	Monterey/ Santa Cruz County Line to San Andreas Rd/ Larkin Valley Rd	- 4-5-lane freeway - Access to Watsonville - Intersections with SRs 129 & 152 - California Coastal Zone	Peak LOS D or better/ 4-lane freeway to SR 129 and 6-lane freeway remainder; pursue parallel passenger rail service.
17	San Andreas Rd Larkin Valley Rd to State Route 17	- 4-lane freeway - Heavy congestion with large interregional commuter component - Most heavily traveled 4-lane freeway in District 5 - Sensitive environmental and community setting - Topography and existing development limiting options for alternative roadway alignments/geometrics	Peak LOS D or better/6-lane freeway; support intermodal interconnectivity among highway, transit, rail, bicycle; install ITS elements to aid operations (loops, CCTV cameras, CMS ramp meters); support TDMs and intermodal facilities; pursue parallel passenger rail service.
18	State Route 17 Junction to Santa Cruz City Limits	- 2-4-lane conventional highway - Heavily-traveled, congested urban corridor - Serves as main street through west Santa Cruz - Multiple signalized intersections - Topography and existing development limiting options for alternative roadway alignments/geometrics	Peak LOS D or better/ 6-lane freeway to Mission/ Chestnut Streets; 4-lane to 6-lane conventional, Mission/Chestnut to Swift; 2-lane conventional to urban boundary; consolidate access; improve channelization at intersections; improve pedestrian access.
19	Santa Cruz City Limits to Santa Cruz/San Mateo County Line	- 2-lane conventional highway - Aesthetics - California Coastal Zone	Peak LOS D or better/ minimize and consolidate access; improve channelization.

INTRODUCTION

System planning is the California Department of Transportation's (Caltrans') long-range planning process. It is performed pursuant to Government Code Section 65086(a) and Department policy. System planning identifies, at the earliest stage, the capacity and operational improvements, new technologies, and alternatives to driving that will optimize performance of the facility. System planning thereby lays the groundwork for investments in the transportation system to meet future needs for mobility, access, and safety. The system planning process is recorded in three interrelated sets of planning documents: (1) Transportation Concept Reports (TCRs), (2) District System Management Plan (DSMP), and (3) Transportation System Development Program (TSDP).[2]

THE TRANSPORTATION CONCEPT REPORT

The Transportation Concept Report is Caltrans' long-term planning document for an individual state route corridor. The TCR (1) evaluates current and projected conditions for the route; (2) establishes a twenty-year planning vision or concept; and (3) recommends long-term improvements to achieve the concept. The TCR documents strategies from long-range plans prepared by the Regional Transportation Planning Agencies (RTPAs) and Metropolitan Planning Organizations (MPOs) that plan and program regional transportation projects. The TCR also identifies major alternatives for accommodating demand within the state highway corridor. The TCR addresses Caltrans' responsibility to ensure that its highways provide reasonable interregional traffic flow, safety, continuity, and efficient goods movement to sustain the State's economy. When State highway corridors pass through more than one county, the District-level TCR addresses the role of the corridor in interregional travel and goods movement. In doing so, the TCR may modify or augment regional strategies to create a single comprehensive, corridor-specific document.

The improvements identified in a TCR are not necessarily tied to a funding source, nor does the document project future funding scenarios. Collectively the TCRs provide the basis for developing the TSDP and the State Transportation Improvement Program (STIP) which do address funding availability and are project specific.

TCR IN THE PLANNING PROCESS

A TCR is the culmination of an integrated effort among various stakeholders. Figure 1 represents the interdisciplinary planning involved in preparing a concept report and the place of the TCR in the project identification process. As the illustration shows, several documents including the TCR and the Regional Transportation Plan (RTP) can identify and describe transportation needs. As these plans are updated they should be consistent in addressing such needs, reflecting community concerns and intergovernmental agency cooperation. The purpose of the integrated process is to attain general agreement among stakeholders on the direction of transportation improvements in a given area.

[2] The purpose and scope of the DSMP and TSDP are described in Appendix A: Definitions, Acronyms, and Abbreviations.

The process of generating a TCR involves identification and evaluation of transportation needs in collaboration with the following sources:

1. Caltrans specialists in areas such as safety and operations, forecasting, programming, transit and non-motorized travel, context sensitivity, and environmental issues for technical and programmatic information;
2. Local government agencies and members of the public for community values and concerns; and
3. Regional and metropolitan transportation agencies for regional as well as local perspectives and priorities.

The TCR does not function as a programming tool for transportation projects; rather, it serves as a starting point for transportation infrastructure improvements. With a potential need identified, a project study further evaluates the feasibility of alternatives to achieve the desired transportation improvements. The Project Study Report (PSR) translates broad improvement planning concepts into project level detail. Once a project has been established to address the need identified during the TCR (or RTP) process, it proceeds to a more tangible process where it competes for inclusion in a future funding program.

ORGANIZATION OF REPORT

The TCR comprises three major parts. Part One provides a broad overview of the functions, current development and designations of Route 1. Part One also reviews the process followed in developing an appropriate concept for the facility.

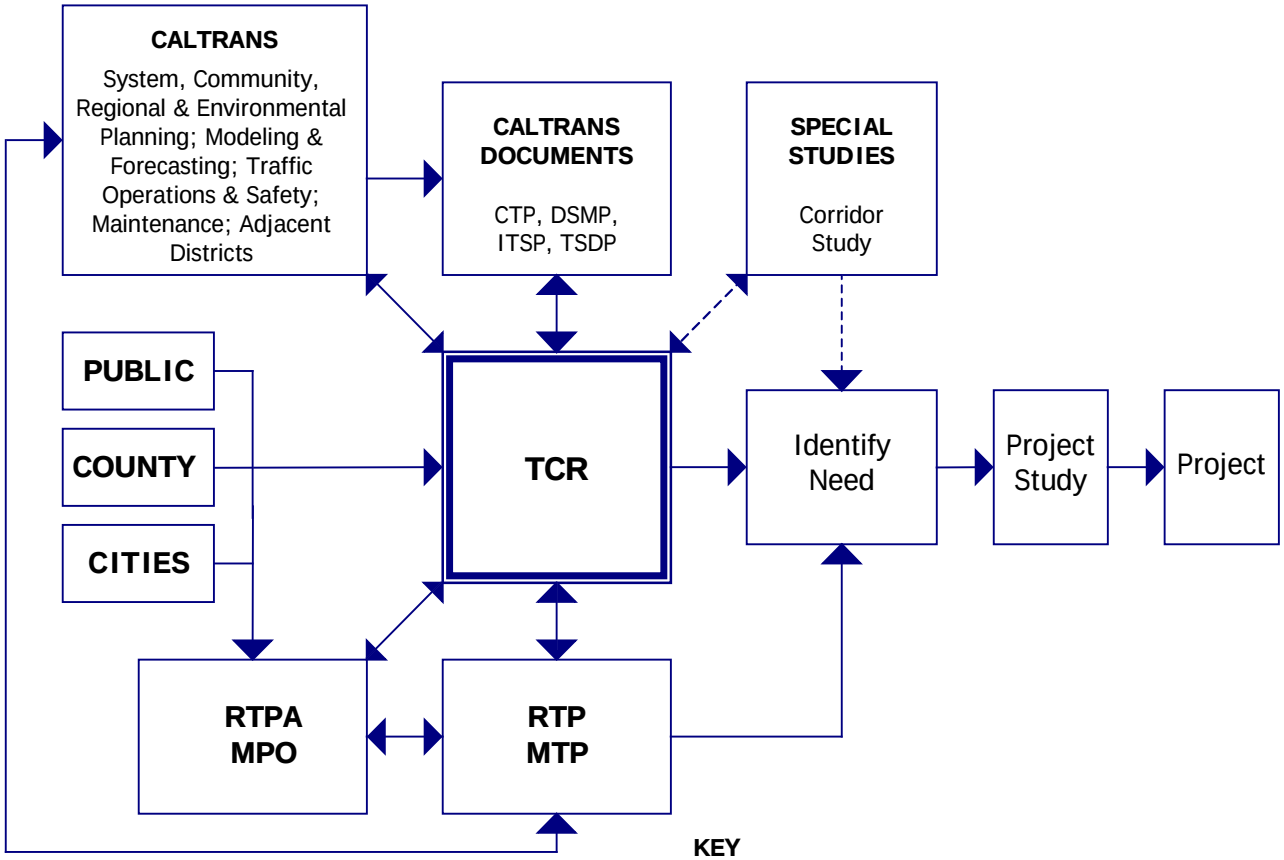
Part Two begins by identifying locations along the route where traffic levels, topography, or other constraints give rise to concerns related to goods movement and/or the flow of interregional traffic. This section is followed by an analysis of Route 1 in District 5. The following information is presented for each of the four counties through which Route 1 passes: area description and trends; present and future operating conditions of the highway; and alternatives to single-occupant vehicle travel. Each county analysis concludes with an appropriate 20-year transportation concept and the facilities or programs that will be required to achieve the concept.

Part Three considers realization of the 2025 transportation concept for Route 1 through future planning and programming. Environmental factors that will need to be considered are identified. Finally, the ultimate Route 1 transportation corridor, looking beyond the 20-year planning period, is presented.

Appendices provide background information, maps, and additional detail. Appendix A identifies the acronyms and abbreviations used in the TCR. Maps, segment summaries and data sheets for the 36 route sub-segments are presented in Appendix B. Comments heard and issues identified by local and regional agencies, community groups, and individuals are listed in Appendix C. Appendix D identifies the currently programmed or planned improvements to Route 1 identified in the State Transportation Improvement Program (STIP) and project lists in the four Regional Transportation Plans.

FIGURE 1

THE TCR IN THE TRANSPORTATION PLANNING PROCESS



KEY

CTP	California Transportation Plan
DSMP	District System Management Plan
ITSP	Interregional Transportation Strategic Plan
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
TCR	Transportation Concept Report
TSDP	Transportation System Development Program
→	Regular Process
- - - →	Special Circumstances

PART ONE: BACKGROUND FOR TRANSPORTATION CONCEPT DEVELOPMENT

Part One of the TCR presents an overview of the purpose, use, and designations of Route 1, the major coastal route through District 5. This is followed by a description of the process that was followed in analyzing the route for the TCR and various considerations that were referenced in developing transportation concepts for route segments.

STATE ROUTE 1 IN DISTRICT 5

State Route 1 is the major coastal route through District 5. The route extends some 270 miles through four counties in the District: Santa Barbara, San Luis Obispo, Monterey, and Santa Cruz. Traffic characteristics and settings vary greatly along the route. Sections of Route 1 are distinctly rural and lightly traveled, with Average Daily Traffic (ADT) levels under 5,000. In these areas, slow-moving agricultural equipment regularly share the road with conventional vehicles. At the other extreme, ADT on the Route 1 freeway in the City of Santa Cruz is well over 100,000, the highest traffic count for any four-lane highway in District 5. Here, a system of advanced electronic and information technologies support operations, safety, and productivity.

Traffic volume is only one of the dimensions that vary through the District. Others include settlement patterns, suitability for agricultural production, topography, proximity to tourist destinations, and proximity to major employment centers. In many locations, changes in these factors are changing the mix of traffic and the use of the route.

Route/Corridor Purpose and Characteristics

Route 1 accommodates trips ranging from interregional to local. Coastal areas in District 5 are replete with tourist and recreational resources including beaches, parks, historic sites, scenic vistas, venues for cultural events, and hosting facilities. The role of Route 1 in interregional tourism is incomparable in the state. In San Luis Obispo, Monterey, and Santa Cruz Counties, the majority of tourist traffic on the route is interregional, destination oriented and markedly seasonal. Along the Big Sur coast, the highway itself is an acclaimed tourist destination. In northern Monterey and southern Santa Cruz Counties, Route 1 is the final link for trips from the San Joaquin Valley and the Santa Clara Valley to tourist destinations along the Monterey Bay.

Route 1 is important for goods movement – both interregional and regional. Trucking predominates in moving goods through District 5. No seaports or non-military cargo airports are located in District 5. Neither are major manufacturing centers located in the District. While freight rail activity through District 5 is increasing, it does not approach the volumes carried on north-south routes through the Central Valley.

In all four District 5 counties, the highway passes through rich agricultural land on which high value crops are grown year round. Agricultural products begin the journey from field to packinghouse and on to state, national, and international markets along segments of Route 1. The highway is also vital for moving manufactured goods from other regions to meet the needs of growing coastal population centers in the District – especially along the Monterey Bay.

Along several stretches of Route 1, commuter traffic has become the major component of traffic. Regional commute trips predominate along segments south and north of Lompoc in Santa Barbara County and between San Luis Obispo and Morro Bay in San Luis Obispo County. In northern Monterey and southern Santa Cruz Counties, Route 1 is heavily used for both regional and interregional commuter trips with most of the latter trips to job sites in Santa Clara County and the Bay Area.

Finally, in addition to linking major coastal communities at the regional level, Route 1 is critical for local travel. Route 1 serves as the main street through the historic centers of two cities in Santa Barbara County: Lompoc and Guadalupe, and directly serves several unincorporated communities in the District: Oceano and San Simeon in San Luis Obispo County; Big Sur and Moss Landing in Monterey County; and Davenport in Santa Cruz County. While the route does not serve as "main street" in Grover Beach, Pismo Beach, San Luis Obispo and Santa Cruz, it passes through these communities over city streets lined with mixed urban uses.

Throughout the District, Route 1 is intended to accommodate the array of corridor users with a facility that operates in a safe, efficient, and (as much as practicable) environmentally benign manner.

Route Designations

The location and environmental setting of Route 1 have resulted in numerous special designations by federal and state agencies. These designations and classifications provide information regarding the facility itself and its intended use. They may indicate the availability of special purpose funding related to the designation.

In all four counties, where trip lengths and travel densities indicate substantial statewide and interstate travel, Route 1 is classified as a Principal Arterial. In long stretches, principally a few miles north and south of the Santa Barbara/ San Luis Obispo county line and between the north San Luis Obispo city limits and the Carmel River Bridge, the route is a Minor Arterial.

The section of Route 1 that describes the crescent of the Monterey Bay (Monterey and Santa Cruz Counties) is also part of the National Highway System (NHS) identified in the federal Transportation Equity Act for the 21st Century (TEA-21). The NHS is comprised of the Interstate System and other urban and rural principal arterials that are essential for interstate and regional commerce and travel, national defense, intermodal transfer facilities, and trade.

Large sections of Route 1 in District 5 are included in the National Truck Network. This Network was designated pursuant to the federal Surface Transportation Assistance Act (STAA) of 1982. Sections excluded from the Network are located in three areas: (1) within the City of Lompoc; (2) between the Orcutt expressway and US 101 in Pismo Beach; and (3) along the Big Sur Coast from San Simeon in San Luis Obispo County to the Carmel River in Monterey County. For various reasons related to geometric standards, truck advisories or restrictions exist for many of these areas. The section between Orcutt and US 101 passes through agricultural areas that are in production year-round. While this area is not on the National Network, much of it is part of the California Legal Network, allowing trucks access to fields and packinghouses from the National Network.

The Strategic Highway Corridor Network (STRAHNET) is a network of linked highways deemed essential to national defense for facilitating the movement of troops and equipment to airports, ports, rail lines and military bases**.** The federal Department of Defense in cooperation with Caltrans has identified the section of Route 1 from VAFB north to State Route 135 as a STRAHNET connector route.

The State of California has granted important designations to various sections of Route 1. First, major sections of the route are on the Freeway and Expressway System (F & E) whose completion has been declared essential to the future development of the State. Generally, inclusion on the F & E system entails provision for control of access to the extent necessary to preserve the value and utility of the facility. Three sections of Route 1 in District 5 are excluded: (1) Cienaga Road to the south junction with US 101 in San Luis Obispo County; (2) San Simeon Road in San Luis Obispo County to the Carmel River Bridge; and (3) City of Santa Cruz north limit to the Santa Cruz/San Mateo County line.

Route 1 is also one of 87 statutorily identified routes on the State's Interregional Road System (IRRS). The section of Route 1 extending from the Carmel Bridge in Monterey County to State Route 17 in Santa Cruz County is additionally one of 34 High Emphasis Routes identified in Caltrans' Interregional Transportation Strategic Plan (ITSP). In 1997, California Senate Bill 45 created an Interregional Improvement Program (IIP) for which Caltrans submits projects in specified categories. The IIP funds project components that provide for interregional movement of people and goods, including state highway projects on the IRRS.

Both the State of California and the federal government have recognized the majority of Route 1 in District 5 for outstanding scenic qualities. In Santa Barbara County the section from US 101 to Route 246 is a designated State Scenic Highway. In San Luis Obispo County, the section beginning near Halcyon and continuing north to Route 101 in Pismo Beach is eligible for designation as a State Scenic Highway. The long stretch from the Carmel River north through the remainder of Monterey County and on through Santa Cruz County is also eligible. In order to achieve the designation for an eligible section of a route, local governments must prepare and adopt a scenic corridor protection program.

The highway from San Luis Obispo's north city limit to the Carmel River in Monterey County has been designated an All American Road as well as a State Scenic Highway. The latter is the highest designation under the federal Scenic Byways Program. The All American Road passes through several beach communities and units in the state parks system as well as the famed Big Sur coast.

In addition to its various designations, Route 1 is subject to numerous local, regional, state, and federal policies, laws, and regulations. Among these are California Coastal Act policies which are applicable to Route 1 segments that are located in the Coastal Zone. (See Development Centers maps in Appendix B.) Coastal Act policies limit Route 1 to two lanes in rural areas.

SYSTEM PLANNING PROCESS AND CONSIDERATIONS

Transportation planners at every level of government are challenged by the multiple uses of Route 1, the mixture of interregional, regional, and local traffic, and the beauty and environmental sensitivity of the highway corridor, and the prospect of growth and increasing

travel demand along the Route. This TCR presents an opportunity for District 5 to develop a concept for this important facility in consultation with its regional partners.

The system planning process includes analyzing current and projected operating conditions for individual route segments, consulting with local and regional agencies and the public, and identifying the type of facility that will provide acceptable operations in the 20-year horizon. Other factors such as alternatives that might reduce demand, goods movement requirements, and route continuity are also considered.

Route Segmentation and Analysis

The District 5 portion of Route 1 has been divided into nineteen segments for purposes of analysis. Segment ends are identified by features such jurisdictional boundaries or changes in functional classification as well as by post mile measures.[3] Several of the segments were further divided into sub-segments, generally at intersections with other routes.[4]

The sub-segment is the basic unit for analysis of the travel volumes, forecasts and associated levels of service, and collision rates upon which a transportation concept has been built.[5] For each of the 36 sub-segments on Route 1, recent average traffic counts were compared with traffic projections for the year 2025.[6] For most Route 1 sub-segments, current levels of service could be calculated and compared with expected service levels in the year 2025.

In several urban locations, intersection operations would provide a more meaningful and accurate measure of service than sub-segment traffic flow. Current data (counts, turning movements, delay) were not available for many of these intersections. In some cases, Regional Transportation Plans or other sources identified intersection hot spots along Route 1. The TCR identifies these intersections and others where intersection operations are known to be critical.

Segment Summaries are included in the county level analyses and in Appendix B where maps and individual data sheets with technical descriptions of each sub-segment are included as well.

Present and Future Operating Conditions

The TCR references traffic data obtained in 2002. It also forecasts travel demand for the year 2025 based on local and regional land use designations. The traffic forecasts are used to determine future levels of service (LOS) and estimate the measures required to maintain acceptable service levels. The forecast data in this TCR were generated from traffic models

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[3] Caltrans assigns post-miles along all routes on the State highway system on a county-by-county basis. For a north-south route, measurements are taken from the southern origin of the route within the county. In the case of Route 1 in District 5, a post-mile 0.00 is located at the southern origin of the route in each county.

[4] Segments and sub-segments of odd-numbered routes are numbered from south to north through the District. Sub-segment 1 of Route 1 begins at Las Cruces where Route 1 diverges from US 101 as a separate route. Segment 19 ends at the Santa Cruz County/San Mateo County line, the north boundary of District 5.

[5] Traffic volumes for 2025 were generated for each of the four counties according to methods used by the agencies charged with forecasting transportation conditions for each county. The three agencies are Santa Barbara County Association of Governments, San Luis Obispo Council of Governments, and Association of Monterey Bay Area Governments, the Metropolitan Planning Organization for Monterey and Santa Cruz Counties.

[6] The year 2025 levels of service presented in this TCR were calculated using capacities that will exist upon completion of currently programmed STIP projects.

and local growth trends using 2002 traffic volumes, 2000 Census data, and policies from current General Plans. This document recommends improvements in both urbanized and non-urbanized segments of the route, with the recognition that RTPAs and MPOs have primary responsibility for addressing urban congestion.[7]

The TCR identifies a few areas where competing objectives or complex traffic flows demand analysis that is beyond the scope of a TCR. For such locations, corridor studies or area transportation studies are recommended.

Context Sensitive Solutions

The concept of Context Sensitive Solutions (CSS) embraces the integration of community and environmental values in transportation project planning, design, construction, maintenance, and operations. The concept began to emerge in the 1990s amid increasing public and community resistance to traditional approaches for solving transportation needs. Caltrans policy now encourages the pursuit of solutions that use innovative and inclusive approaches to integrate and balance community, aesthetic, and environmental values with transportation safety and performance goals.[8]

In the spring of 2003, meetings were held with planners in the four regional transportation planning agencies, local government officials, and local residents in cities and communities along the route. Extensive outreach was conducted in Spanish and English in two cities having large populations of Spanish-speaking workers and families: Guadalupe in Santa Barbara County and Watsonville in Santa Cruz County. The purpose of these meetings was to identify local priorities and concerns relative to the Route 1 corridor that should be addressed in the transportation concept and recommendations. Concerns identified in the public outreach process are listed in Appendix C. This TCR reflects community and environmental values identified in meetings with the public and agency representatives and in local and regional plans. Projects arising from this TCR will also incorporate CSS processes and principles.

Alternatives to Reduce Motor Vehicle Trips

A new emphasis on interrelationships has developed within the discipline of transportation planning and its institutional settings. With the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and its 1998 successor Transportation Equity Act for the 21st Century (TEA21), the federal government set a new course for planning and funding transportation facilities. These laws stress interconnectivity among transportation modes, enlarge the roles of regional planning agencies, and require the preparation of regional and state transportation plans that are comprehensive and linked. The Safe, Accountable, Flexible and Efficient Transportation Equity Act of 2005: A Legacy for Users (SAFETEA-LU) continues this basic framework. In 1997, California Senate Bill 45 directed Caltrans and regional planning agencies to address common issues as partners.

A variety of alternatives can contribute to accommodating future mobility needs along the Route 1 corridor. Opportunities for passenger rail, intercity and local public transit, and

[7] For purposes of the TCR, urban sub-segments that fail to attain LOS D are characterized as congested. See data sheets in Appendix B. Caltrans recognizes the existence of many definitions of urban congestion.
[8] Caltrans Director's Policy No. 22, November 2001

transportation demand management strategies such as ridesharing and teleworking may be exploited to reduce the impact of the new growth on the highway facility. Demand for travel on Route 1 and use of the facility may be better managed through Intelligent Transportation Systems (ITS) and construction of High Occupancy Vehicle (HOV) lanes. New development in the four counties may be undertaken in a pattern that reduces the need for automobile travel. This TCR identifies major alternatives in each of the four District 5 counties. It also speaks to the potential of each to influence the travel patterns along the route.

Numerous sources provide information regarding bicycle facilities in the District.[9] Although bicycles are accommodated within or close to Caltrans' right-of-way along much of Route 1, the majority of bicycle use outside urban areas is recreational rather than a modal alternative to conventional vehicular travel. In many areas, however, bicycling could be an alternative to such travel on the highway. From this perspective, the greatest potential contribution of bicycle use is likely to occur within urban areas where the mode can provide for travel to final destinations or to park and ride lots, transit stops, or train stations where inter-modal facilities (for storage) have been provided.

As partnerships evolve and new incentives and commitments are developed to enhance the attractiveness and effectiveness of rail and transit, TDM, and new land use patterns, these changes will be reflected in future Transportation Concept Reports. District 5 will continue to work with local agencies to develop comprehensive, all-inclusive approaches to ease congestion and improve safety.

Performance Measures

In the past several years Caltrans has focused attention on measuring and improving the performance of the transportation system. In 1998, a report entitled Transportation System Performance Measures, presented concept-level "system performance outcomes" and discussion regarding performance indicators by which the attainment of desired outcomes might be measured. Subsequently in 1999, the California Transportation Commission promulgated guidelines for the preparation of Regional Transportation Plans (RTPs) stating that program level transportation system performance measures should be adopted and applied in the evaluation and selection of plan alternatives.

In this Transportation Concept Report, performance of the State Route 1 is measured primarily using level of service (LOS) and delay as indicators for mobility, reliability, and accessibility. Collision rates along individual highway segments are compared with state averages as a measure of safety. Additional Transportation System Performance Measures are addressed qualitatively. Environmental resources known to exist along the transportation corridor are identified in anticipation of the comprehensive evaluation of environmental quality that would attend a major transportation project.

The outreach to local agencies and the public that has been part of the TCR preparation process has provided a means to address coordinated transportation and land use and equity. The TCR incorporates numerous recommendations gathered during the outreach process. For some locations, the TCR recommends additional studies with local agencies to assure that the

[9] For example, for District 5, Caltrans has published a booklet titled, "Bicycle Map for the State Highways of the Central Coast" and most local agencies have adopted bicycle plans.

future transportation facility provides adequate access while operating safely and efficiently for the traveling public. Such studies will include additional opportunities for public participation. Comments and suggestions from the public meetings conducted for this TCR are included in Appendix C. These comments address the needs and wishes of system users including transit riders, commuters, truckers, farmers, bicyclists and pedestrians.

Additional Considerations

Goods Movement - According to the 1998 California Statewide Goods Movement Strategy, goods movement on the transportation system was projected to increase by some 46 percent over the twenty-year period 1992-2012. The freight transportation system has already become the lifeline of domestic and international trade.

The strategy document was prepared as part of the 1998 California Transportation Plan in recognition of the critical role of transportation in sustaining economic vitality. It focuses on improving existing system efficiency, through new technology and other means, to maximize system capacity and reliability and minimize long-term transportation system costs.

Route 1 has an important role in District 5 in getting agricultural products to market. Additionally, in the Monterey Bay area from Carmel to Santa Cruz especially, Route 1 is critical for moving the goods needed to sustain the lives of local residents and the local businesses. Specific concerns and potential actions to improve goods movement along Route 1 will be identified in Part Two.

Non-Motorized Travel – While the central focus of this TCR is on Route 1 as a highway facility adequate to accommodate motor vehicle demand, the Route 1 corridor is uniquely attractive for and suited to non-motorized travel. Bicyclists share the highway with motorized vehicles for the majority of the Route. The type of bicycle facility available in the highway right-of-way for each route segment is indicated in the "Existing Roadbed Information" section of the data sheets in Appendix B. Deficiencies such as non-standard shoulders that could impact bicyclists are identified in Part Two in the "Operating Conditions" sections for each county. Among the actions recommended for individual segments are many that will improve the facility for use by bicyclists and pedestrians.

California's Pacific Coast Bike Route coincides with Route 1 through Santa Barbara County and sections of the highway in each of the other three District 5 counties on Route 1. The Bike Route follows local roads in other areas.

The California Coastal Trail (CCT) is planned to be a continuous recreational trail extending from the Mexican border to the Oregon state line. The CCT is envisioned to accommodate a variety of users – walkers, bicyclists, equestrian and the mobility impaired – using beaches, bluff tops, or roadway shoulders, through developed areas as well as open space. Along the Big Sur Coast, it is likely that portions of the CCT will coincide with the Route 1 right-of-way. Additionally, parallel recreational trails exist or are planned along the Route in San Luis Obispo, Monterey, and Santa Cruz Counties.

Intelligent Transportation Systems (ITS) - Intelligent Transportation Systems apply advanced technologies and management strategies to increase the safety and efficiency of the surface transportation system. Over the next 20 years, the deployment of ITS in District 5 will bring

significant improvements to Route 1 locations as diverse as agricultural operations in Santa Barbara and South San Luis Obispo Counties, the remote Big Sur Coast, and the heavily traveled corridor around the Monterey Bay. In rural areas ITS components such as smart call boxes can help travelers overcome isolation. Changeable message signs can warn of closures or delays ahead. In urban areas, ITS components constitute an integrated system that gathers data on roadway conditions; conveys information to drivers; and optimizes traffic flow.

The Central Coast ITS Strategic Deployment Plan (SDP), completed in June, 2000, provided a framework for developing a variety of ITS activities in District 5. A cornerstone of the Central Coast SDP is the Traffic Management Center (TMC) operated from District 5 offices in San Luis Obispo. Here Caltrans and CHP personnel staff monitor real time traffic conditions, provide pre-trip and en route information to travelers, coordinate emergency response efforts, and manage traffic flow. The TMC coordinates the following ITS components:

1. Closed circuit television (CCTV) and surveillance loops to monitor traffic flow and roadway conditions
2. Ramp meters and synchronized signals to improve traffic flow
3. Changeable message signs (CMS), extinguishable message signs (EMS), highway advisory radio (HAR), and web-based information services to provide real-time regional multi-modal traveler information, including notice of incidents and road closures
4. "Smart call boxes" that provide motorists with direct connections to dispatch facilities
5. "Smart cards" to facilitate automatic payment of transit fares, parking fees and roadway use tolls.

To date, ITS elements on Route 1 are concentrated in Santa Cruz County, a reflection of that county's past affiliation with District 4 and long-standing economic ties with Santa Clara County. Additional ITS applications throughout Route 1 in District 5 are identified in Part Two.

The importance of ITS for California's continued economic vitality is reflected in the Statewide Goods Movement ITS Action Plan published by the Division of New Technology and Research. The Plan proposes (1) research and development of standards and screening technologies; (2) field testing of standards; and (3) integration of public and private investments in technology. The Plan does not address deployment of specific applications in the field. However, because 82 percent of goods by tonnage travel via the highway system, the Plan focuses on trucking and the state's responsibility for the highway system and intermodal connections. In the future, new standards and technologies for fleet management and transportation system management will apply to state highways in District 5.

<u>HOV Consideration</u> - The California Transportation Commission requires Caltrans to evaluate the efficacy of High Occupancy Vehicle (HOV) lanes when considering any project to widen a freeway within an urban area.[10] A minimum of 800 vehicles per hour per lane, or 1800 persons per hour per lane should be projected to use the High Occupancy Vehicle facility during the peak hour in order to be effective. Components of successful HOV lanes include support facilities such as park and ride lots, transit facilities and public awareness campaigns.

[10] As a long-range planning document based upon a macro-analysis of travel demand and capacity, the TCR does not evaluate the potential effectiveness of HOV lanes within particular segments of roadway. HOV analysis will be included in the Project Study Report (PSR) that will be prepared as part of any proposed widening project along Route 1.

At least one segment of Route 1 in District 5, Segment 17 in Santa Cruz County, currently meets the minimum requirements for HOV lanes, as will be noted in Part Two.

Route Continuity - Continuity of state routes may require coordination with adjacent districts. District 5 seeks route continuity for functional classification and facility type from county to county as warranted by traffic conditions. In District 5, Route 1 originates at US 101 in the interior of Santa Barbara County, where route continuity is not an issue. The route leaves the District and enters District 4 at the Santa Cruz/San Mateo County line. System planning staff consulted District 4 staff regarding route concepts. The concept for Route 1 in Santa Cruz County provides for continuity into San Mateo County. Specific features of the facility through the border of the two districts are addressed further in Part Two, following the section on Santa Cruz County.

PART TWO: SUB-CORRIDOR ANALYSIS AND DETAIL

Part Two provides a segment-by-segment analysis of Route 1 through District 5. The following information is presented for each of the four counties through which Route 1 passes: area description and trends; present and future operating conditions of the highway; and alternatives to reduce single-occupant vehicle travel or improve highway operations. Each county analysis concludes by identifying an appropriate 20-year transportation concept and the facilities or programs that will be required to achieve the concept.

Part Two begins with a brief description of locations where Caltrans has particular concerns related to its charge to provide reasonable interregional traffic flow, safety, continuity, and efficient goods movement to sustain the State's economy.

CORRIDOR AND INTERREGIONAL CONCERNS

The significance of Route 1 requires Caltrans to consider issues and needs from an interregional perspective. Caltrans has identified concerns related to the flow of interregional traffic, safety, continuity, and/or goods movement through certain stretches of Route 1. Three of these stretches are particularly problematic. Beginning from the south, these are Santa Rosa Street in San Luis Obispo County, the Big Sur Coast in San Luis Obispo and Monterey Counties, and the stretch between the Carmel River Bridge in Monterey County and SR 17 in Santa Cruz County, which is a designated High Emphasis Route.

In the City of San Luis Obispo, Route 1 diverges from US 101 via non-standard ramps and proceeds northwest along the Santa Rosa Street alignment to the urban boundary. Santa Rosa Street is burdened to accommodate tourist-related interregional traffic in addition to heavy local and regional traffic. Local sentiment, existing development patterns, and topographic and environmental constraints are major factors when considering alternatives to improve traffic flow on this stretch of Route 1, which is analyzed below as Segment 7.

To the north along the scenic Big Sur Corridor in San Luis Obispo and Monterey Counties, reliability is a transportation concern. Where Route 1 winds along the western face of the Santa Lucia Mountains, the steep rock walls and erosive soils above the highway are slide prone, especially during heavy seasonal storms. Caltrans' challenge is to maintain the highway in a manner that protects the fragile environment while minimizing closures and inconvenience to out-of-area travelers as well as area residents and business owners for whom Route 1 is a lifeline. The Big Sur corridor was recently the subject of a comprehensive planning effort by Caltrans and numerous agency and citizen stakeholders. The Coast Highway Management Plan fully addresses traffic and maintenance issues as well as a host of important contextual issues.

Mobility is a major concern in Monterey and Santa Cruz Counties between the Carmel River Bridge and SR 17 in the City of Santa Cruz. The challenge here is to provide for acceptable traffic flows through the urbanized areas. Increasing volumes of tourist and commuter trips, combined with roadways and interchanges that are no longer adequate for current traffic volumes, are lowering the level of service for all traffic: interregional, regional, and local. Truck movement around the Monterey Bay is the most important goods movement issue on Route 1. In transporting fresh produce, timing is critical. Trucks leave fields or packinghouses as soon as they are loaded, regardless of conditions on roadways on which they travel. Truckers also

rely on Route 1 for delivering goods to retailers and final users in the cities and unincorporated communities around the Monterey Bay.

Within this stretch of Route 1, a section of two-lane highway through an environmentally rich area at the north end of Monterey County is particularly problematic with safety and continuity issues in addition to mobility concerns.

SANTA BARBARA COUNTY

Area and Population: Description and Trends

Santa Barbara County includes five centers of economic activity and development distributed over a varied topography. (See map of Santa Barbara County Development Centers in Appendix B-1.) The two largest developed areas, the South Coast area and the Santa Maria area lie along US 101. The South Coast includes the county seat, Santa Barbara, the cities of Carpinteria and Goleta, and several unincorporated communities, including Isla Vista, near the University of California at Santa Barbara campus.

The rapidly-growing Santa Maria area is located at the north end of the County. The City of Santa Maria lies on both sides of US 101 just south of the San Luis Obispo County line. This area also encompasses the community of Orcutt and the City of Guadalupe to the west of Santa Maria on Route 1.

The Santa Ynez Valley area lies north of the South Coast area and the Santa Ynez Mountains. The City of Buellton at the junction of US 101 and SR 246 is the gateway to other Santa Ynez Valley communities to the east including the City of Solvang and several unincorporated communities.

The Lompoc and Cuyama Valley centers of development are located away from the US 101 axis. Lompoc lies west of US 101 on Route 1. The Cuyama Valley is near the extreme northeast of the County, on SR 166.

The Lompoc area on Route 1 includes the City of Lompoc and the communities of Vandenberg Village and Mission Hills, all of which are affected by activity levels at Vandenberg Air Force Base (VAFB) to their west. The City of Lompoc can be reached from US 101 by three different routes. Route 1 leaves US 101 some 19 miles southeast of Lompoc. Although SR 246 provides shorter and faster access to Lompoc from US 101 in the vicinity of Buellton, for commuters to the South Coast, Route 1 is shorter and more direct. Finally, a combination of SR 135, one or more local roads, and Route 1 provide access from the north.

The Santa Barbara County Association of Governments (SBCAG) projects that the population of Santa Barbara County will increase from 399,000 in the year 2000 to 513,000 by 2025, an increase of 28 percent. In 2025, 54 percent of the population is expected to reside in the northern portion of the county (up from 50 percent in 2000). While the South Coast area is job-rich with government, technology, tourism, retail employment, and the UC campus, it lacks affordable housing. Significant and still-growing numbers of South Coast area workers reside in Santa Maria, the Santa Ynez Valley, and Lompoc. Each of these areas is growing its own employment base as well, in response to residential growth and local economic development investments. Because the development centers to the north are less constrained by topography, existing patterns of development, and traffic congestion, they can more easily accommodate growth.

Lompoc, the major city on Route 1, will continue to be somewhat of a bedroom community for the South County area. According to the US Census, some 10,000 residents, more than half Lompoc's work force, travel outside the city to work. More than 40 percent of those

commuters travel to South Coast job sites. Although Lompoc and nearby communities of Mesa Oaks, Mission Hills, and Vandenberg Village grew in population between 1990 and 2000, the population residing at VAFB declined by some 3,700 or 38 percent during this period. Lompoc's economy is still linked with the level of activity at VAFB. Growth in commercial launches at the base, expansion of Allan Hancock College, and development of a private packaging facility are expected to be major sources of job growth in the Lompoc area.

North of Lompoc and VAFB, Route 1 provides access to productive agricultural operations in the Santa Maria Valley, extractive operations in the northwest portion of the county, and the City of Guadalupe just south of the county line. Guadalupe is projected to grow by 14 percent to a population of 6,500 in the year 2025, an increase of 14 percent from the year 2000.

According to Caltrans' 2000-2001 California Statewide Household Travel Survey, weekday vehicle trips per household were greater in Santa Barbara County than anywhere in the state. The high number of trips is somewhat balanced by the fact that average trip duration (in minutes) is the lowest in the State. The County's relative ranking on these measures was unchanged from results of the 1991 survey. This overall pattern of many shorter trips may be more prevalent in the more densely populated South Coast area than along the Route 1 corridor.

Operating Conditions and Segment Summaries

Route 1 in Santa Barbara County consists of four major segments, three of which are further divided into sub-segments. Traffic conditions for each segment are described below. Maps, summaries and details for each of the segments and sub-segments can be found in Appendix B-1.

Segment 1 (P.M. R0.00/19.25) – Route 1 originates in District 5 at US 101 near the small settlement of Las Cruces between the Gaviota and Nojoqui passes (P.M. R48.85 on Route 101). The highway transitions from four to two lanes within three miles from US 101, and the road continues northwest as a two-lane conventional highway through the Santa Ynez Mountains to join SR 246 at a signalized intersection inside the east limits of the City of Lompoc. Segment 1 is a State designated scenic highway. The majority of the segment is hilly and winding; in some areas travel lanes and paved shoulder widths are as narrow as 11 and four feet, respectively – below the standard 12 and eight feet. Passing lanes are provided in both directions at two sections within the segment. Segment 1 is subject to closures due to winter weather-related landslides.

Daily traffic on Segment 1 averaged 7,500 in 2002 operating at LOS D. Traffic is projected to increase to 14,300 by the year 2025, but LOS will remain at "D".

Segment 2 (P.M. 19.25/R23.30) - Segment 2 follows local streets through the City of Lompoc. This segment serves as the "Main Street" for the City of Lompoc. It is the last leg of regional trips between the South Coast and Lompoc and between Buellton and Lompoc. The segment also carries regional traffic between the southeast corner of Lompoc and centers north of the City (Allan Hancock College, Mission Hills, Vandenberg Village and VAFB).

Sub-segment 2A follows Ocean Avenue coinciding with SR 246 from the Route 1/SR 246 junction to the intersection of Ocean Avenue and H Street, in the historic city center. There are

four signalized intersections on this four-lane urban section. (See Segment 2 map in Appendix B-1.) Sub-segment 2B extends north on Lompoc's H Street from Ocean Avenue to the intersection with Harris Grade and Purisima Roads. This sub-segment passes central city development, strip commercial development, and shopping centers. Sub-segment 2B is a four-lane facility with ten signalized intersections. (See map.)

Daily traffic on sub-segment 2A averaged 16,500 in 2002 and is projected to increase to 25,700 by the year 2025. On sub-segment 2B, average daily traffic will increase from 18,100 in 2002 to 26,100 in 2025.

Peak hour operations in sections of both sub-segments are controlled by intersection operations. While intersection analyses are not available for sub-segment 2A, a traffic study recently completed for a nearby residential development indicates existing peak hour levels of service for locations on 2B (H Street).

	2000	**2008**	**2015**
South of Purisima	D	D	E
North of Central	D	F	F
South of Central	B	C	C
North of North Ave.	C	D	D
South of North Ave.	C	D	D

The study also provided service levels for selected intersections along H Street.

	2000	**2008**	**2015**
SR 1/Purisima	B	D	D
H Street/Central	D	E	F
H Street/North Avenue	B	(n.a.)	C

Segment 3 (P.M. R23.30/ R34.78) - Segment 3 is a four-lane conventional highway and expressway that extends from the Route 1/ Harris Grade and Purisima Road intersection to the Orcutt Expressway. VAFB land abuts the majority of this segment. Segment 3 has three sub-segments. Sub-segment 3A ends at the main gate of the military base. Signalized intersections are located at Hancock Road, Timber Lane, and the main gate, where the route makes a 90-degree right turn. (See Segment 3 map in Appendix B-1.) Sub-segment 3A carries 17,800 ADT while operating at LOS A. Traffic volume is projected to increase to 26,200 and operate at LOS A/B by 2025. Traffic is heaviest just north of the intersection with Harris Grade Road where most of Lompoc's growth is occurring. This imbalance may be accentuated as additional residential development occurs and enrollment at Allan Hancock College increases.

A traffic study recently completed for a nearby residential development indicates existing peak hour levels of service for locations on Lompoc-Casmalia Road (State Route 1)

	2000	**2008**	**2015**
Southeast of Hancock Drive	B	C	C
Northwest of Hancock Drive	B	C	C

The study also provided peak-hour service levels for intersections along Lompoc-Casmalia Road (State Route 1).

	2000	2008	2015
SR 1/Hancock Drive	A	A	B

Sub-segment 3B continues as a conventional highway through VAFB to the south junction of State Routes 1 and 135. This sub-segment carries 13,900 ADT and operates at LOS A. Traffic is projected to rise to 17,700 ADT by 2025 with service declining slightly to A/B. Although sub-segments 3A and 3B are classified as conventional highway, only one major point of access exists along the portion that passes through VAFB. This could change if options under consideration for certain sections of the base property were realized. These include: (1) lease of acreage to the California Space Authority and the Chumash Indians for a rest center with areas for viewing launches, parking, a museum, and exhibits; (2) a national cemetery off sub-segment 3B; and (3) lease of acreage off sub-segment 3A for development of a windmill farm.

Sub-segment 3C is an expressway that coincides with SR 135 to the Orcutt Expressway. Here the sub-segment ends and the routes diverge; Route 1 courses northwest as SR 135 continues north into Orcutt and Santa Maria. Sub-segment 3C carried 15,000 ADT in 2002 while operating at LOS A. With 17,800 ADT in 2025, LOS will remain at A.

Segment 4 (P.M. R34.78/50.61) - Segment 4 extends from the Orcutt Expressway to the Santa Barbara/San Luis Obispo County line at the north side of the Santa Maria River. Traffic volume on sub-segment 4A is 77 percent less than on sub-segment 3C to the south. Sub-segment 4A is a two-lane facility extending north through the rich agricultural fields of the Santa Maria Valley to State Route 166 at south end of the City of Guadalupe. Travel lanes and shoulders are less than standard width on long stretches of the sub-segment. Produce trucks and slow-moving agricultural equipment are a regular component of traffic here. Sub-segment 4B is Guadalupe Street, the city's "main street." It reenters the unincorporated area just south of the Santa Maria River Bridge. Guadalupe Street is lined with commercial and industrial uses. Along Route 1 through Guadalupe there are no traffic signals but an all-way stop sign exists at 11th Street. An Amtrak station, the only passenger rail station along Route 1 in Santa Barbara County, is located on the east side of Guadalupe Street along tracks that run parallel to Route 1. The Santa Maria River Bridge, which ends sub-segment 4B, lacks standard shoulders.

State Route 166 provides access to Santa Maria from Route 1 in Guadalupe. This access is blocked periodically when trains are present on the railroad tracks just east of Route 1. No financially feasible or practical alternatives for a grade-separated crossing have been identified to date. Development on the southeast corner will require improvements to the SR 1/SR 166 intersection as well as channelization along SR 166 just east of the intersection.

Daily traffic on sub-segment 4A is 3,700, projected to rise to 4,000 by 2025. In the horizon year the facility will continue to operate at its current LOS C. With 5,000 ADT, sub-segment 4B operates at LOS A. Level of service on the sub-segment is not expected to change with ADT of 6,000 in 2025.

According to a traffic study prepared for proposed development on the southeast corner of State Routes 1 and 166, the unsignalized intersection at the end of sub-segment 4A currently operates at LOS B and would fall to C in 2023 (without the proposed project).

At a joint meeting of the Boards of SBCAG and the San Luis Obispo Council of Governments (SLOCOG) held in the fall of 2005, representatives of SBCAG voiced concerns that approved new development in San Luis Obispo County would impact operations along Route 1 in the City of Guadalupe. Traffic studies prepared for recent projects have not indicated such impacts would occur.

Linkages – Route 1 intersects with US Route 101 and State Routes 246, 135, and 166 (south to north) in Santa Barbara County.

Alternatives to Reduce Demand or Improve Operations

The Santa Barbara County Association of Governments Metropolitan Transportation Plan 2004-2030 recognizes that dependence on the automobile is the number one issue affecting the county's transportation system. Urban sprawl and a jobs/housing imbalance follow dependence on the automobile. Certain alternatives could lessen impacts to Route 1 from future growth and development in the Lompoc and Santa Maria areas. These include various modes of travel, transportation demand management, measures to control the flow of traffic, and new land use and circulation policies. The potential for each of these to affect travel demand on Route 1 is explored below.

Passenger Rail - Amtrak provides passenger rail service for interregional travel through District 5 with twice daily service by the Pacific Surfliner and daily service with Coast Starlight trains. The Union Pacific tracks follow US 101 north through the South Coast area of the county and on to Gaviota. At Gaviota, the tracks head west, more or less along the Route 1 corridor, through the Lompoc area, then north to Guadalupe, and on into San Luis Obispo County. The line continues to Oakland in the Bay Area.

The one staffed passenger station in the county is in the City of Santa Barbara. To the north, unstaffed stations at Surf and Guadalupe serve the Lompoc-Vandenberg area and the Santa Maria Valley, respectively. Surf is out of direction for travel from Lompoc to Santa Barbara. Given the station location and limited service, passenger rail provides a reasonable alternative for interregional trips but will have negligible effects on regional trips, e.g., commuter travel between the Lompoc and South Coast areas. North county communities have access to additional passenger trains southbound from Santa Barbara via dedicated Amtrak bus service linking north county with the Santa Barbara station.

Freight Rail - Freight operations provided by the Union Pacific Railroad Company are accommodated on the main rail line that diverges from the US 101 corridor at Gaviota, and continues west along the coast. Freight rail activity is light (two trains daily in each direction through the corridor) and there does not appear to be significant potential for more. The most significant freight rail activity in the county is the movement of bulk commodities and agricultural products between Guadalupe and Santa Maria. This service of the Santa Maria Valley Railroad includes a major spur to the Santa Maria Airport industrial zone providing for inter-modal transfers. This operation has minimal impact on the operational characteristics of Route 1.

Urban Transit - The City of Lompoc Transit (COLT) provides both fixed route and demand-responsive service within the city and out to the nearby unincorporated communities of Mission Hills and Vandenberg Village. For the residents of these communities, which are north of Lompoc and accessed via Route 1, this service reduces highway trips and also satisfies demand that might otherwise be unmet. As Allan Hancock College grows and development increases north of Lompoc, COLT transit service can be expected to relieve some of the demand to travel on Segments 2 and 3 of Route 1.

The Santa Maria Organization of Transportation Helpers (SMOOTH) operates the Guadalupe Shuttle providing deviated fixed route transit service within Guadalupe.

Inter-city Transit - Two types of travel needs – commuting and special needs – are accommodated by inter-city transit along the Route 1 corridor. The Clean Air Express delivers commuters from both Santa Maria and Lompoc to South Coast (Santa Barbara and Goleta) employment centers. If residential growth continues to outstrip job-creation in the Lompoc area, this service will become even more important for meeting future travel demand between Lompoc and the South Coast. The service will have positive impacts not only for Route 1, but also SR 246 and US 101. SMOOTH operates the Guadalupe Flyer, which provides fixed route service with one-hour headways between Guadalupe and Santa Maria. This service, however, responds to travel demand on SR 166 rather than Route 1. Regular use of inter-city transit for commuting can be enhanced through provision of park and ride lots at trip origin sites and coordination with intra-city services at both origin and destination sites.

A new service, The Breeze, runs between Santa Maria and Lompoc with stops in Orcutt, VAFB, and Vandenberg Village. The majority of the 15 daily one-way trips on The Breeze buses are timed to accommodate commuters. The Breeze was initiated in May 2005 as a three-year pilot program. Ridership of 35,000 is expected the first year, rising to 66,000 in the third.

Both SMOOTH and the City of Lompoc Transit (COLT) provide services to special populations. SMOOTH offers demand-responsive service from Guadalupe and Lompoc to Santa Barbara four times daily on weekdays for health care purposes. COLT also offers round-trip service twice a week between Lompoc and Santa Barbara. This service includes a door-to-door Dial-a-Ride feature for persons traveling to Santa Barbara for medical appointments. Others may board the COLT buses at the Mission Plaza shopping center. Advance reservations are required for the COLT service to Santa Barbara. In addition, SMOOTH provides scheduled transit rides to California Department of Social Services CalWorks recipients on weekdays between Lompoc and Santa Maria. These services can reduce automobile trips on Route 1 while assisting special needs or transit-dependent persons.

In spring of 2005, Greyhound Bus Lines discontinued inter-city and interregional bus service linking Lompoc on Route 1 with major employment and trade centers in Santa Maria to the north and South Coast communities (Goleta, Santa Barbara and Carpinteria) to the south. However, because service had been limited to one daily trip in each direction, Greyhound accommodated interregional travelers (e.g., trips to Los Angeles or the Bay Area) rather than commuters to South Coast sites.

Non-motorized Transportation – The 2004 Metropolitan Transportation Plan (MTP) for Santa Barbara County includes a system of bikeways providing access throughout major population

centers as well as linkages among such centers and recreational destinations in the region. Bicycle travel has potential as an alternative to motorized travel – especially in the Lompoc-Hancock College-Vandenberg corridor.

In the Lompoc area Class II bike lanes are proposed for Route 1 south of SR 246 and north of the Santa Ynez River. The extensive Class II and III bikeway system proposed within the city itself will avoid Route 1 along heavily traveled Ocean and H Streets. The proposed Regional Bikeway System does not include bike routes through the City of Guadalupe.

Narrow travel lanes and shoulders are a concern for both bicyclists and motorists. These are most problematic along the north end of Segment 2B and through the intersection with Harris Grade and Purisima Roads and along sub-segment 4A between the Orcutt Expressway and SR 166. In other areas, standard shoulders are absent over bridges.

All of Route 1 in Santa Barbara County is on the Pacific Coast Bike Route.

Transportation Demand Management – Transportation demand management includes a range of techniques to reduce traffic congestion including ridesharing, flexible work hours, and targeted pricing of parking (by area, vehicle occupancy or time of day or duration of stay).

TDM will be successful to the extent that the individual behaviors of large numbers of drivers change. Conditions and changes such as higher driving or parking costs, intolerable levels of congestion, work schedule changes effected by multiple employers, and concerted public policy actions can induce changes in transportation demand.

Intelligent Transportation Systems (ITS) – ITS projects promise to aid travelers and improve roadway operations. ITS projects have been implemented in the County and additional projects have a high priority. When the Central Coast ITS Strategic Plan is fully implemented, the following elements will be available on Route 1:

- System of call boxes
- Changeable message signs (CMS) and/or highway advisory radio (HAR) on US 101 and SR 154 to warn of traffic incidents, slides, and road closures along Segment 1
- Transit vehicle monitoring system and synchronization/coordination of traffic signals in Lompoc
- Traffic surveillance stations (Closed Circuit TV cameras) along Segment 3

Land Use Planning – Most of the development along Route 1 in Santa Barbara County has occurred and continues to occur at low densities. Strict separation of land uses has encouraged an automobile-dependent population. The resulting development pattern is difficult to serve with efficient intra-urban transit is not conducive to walking to commercial centers.

Local governments in Santa Barbara County have recognized the interrelationships among land use patterns, transportation, and quality of life concerns. The county and its cities are attempting to achieve more positive outcomes through complementary policies.

The SBCAG MTP acknowledges the problems facing most communities as they attempt to encourage modal shifts through land use: patterns of existing development are not conducive to such shifts. The MTP identifies the development of regional jobs/housing strategies as a

promising approach to addressing congestion and air quality through land use planning. Caltrans will work cooperatively with local governments to ensure that improvements in the Route 1 corridor are consistent with local plans and coordinated with other transportation modes.

Transportation Concept and Strategies

Caltrans strives to provide a consistently high level of service on its facilities as they pass through urban and rural communities. Historically, District 5 has targeted a peak hour LOS C or better for state highways. In Santa Barbara County, challenging traffic conditions put a realistic target LOS at D in certain areas. This will require operational improvements and perhaps changes to local circulation patterns. As part of the County's Congestion Management Program, SBCAG has also adopted a standard LOS D or better as the realistically achievable target LOS for projects in its 2004 Metropolitan Transportation Plan.

Segment 1 - The transportation concept for Segment 1 is peak hour LOS D or better. A number of actions can be taken to improve the performance of this rural highway where traffic is growing rapidly.

The following improvements could improve operations along this segment:

- Widen El Jaro Creek bridges to provide standard shoulders or construct parallel facilities of non-motorized travel.
- Consider additional passing lanes, turnouts, and channelization to ease turning movements.
- Install changeable message signs on US 101, SR 246, and/or Segment 2 of Route 1 to advise drivers of blockages on Segment 1.
- Attempt to reduce regional trips between the South Coast and the Lompoc area with express bus service, car pools, and vanpools and promotion of an upgraded SR 246 as an alternative.

Segment 2 - The transportation concept for Segment 2 is peak hour LOS C/D or better.

The following improvements could improve operations along this segment:

- Evaluate the feasibility of extending Central Avenue east of Route 1.
- Evaluate opportunities to improve local circulation with directional couplets of parallel arterials.
- Evaluate opportunities to improve conditions for bicyclists at the Santa Ynez River Bridge, northbound, and through the intersection at Harris Grade and Purisima Roads.

Segment 3 - The transportation concept for Segment 3 is peak hour LOS C or better. Future non-military activities proposed for VAFB land will require evaluation and mitigation of traffic impacts. However, the four-lane conventional highway/expressway will continue to operate well to the year 2025.

Segment 4 – The transportation concept for Segment 4 is peak hour LOS C or better.

The following improvements could improve operations along this segment:

- Widen non-standard travel lanes and shoulders including bridge crossings to improve motor vehicle and bicycle operations.
- Provide passing lanes or turnouts to compensate for mix of automobiles, trucks, and farm equipment on the highway. (Sub-segment 4A)
- Provide operational improvements at unsignalized intersections such as channelization and acceleration and deceleration lanes. (Sub-segment 4A)
- Promote ridership on The Breeze as a commuter transit alternative between Lompoc, Vandenberg, and Santa Maria.
- Evaluate alternatives for providing continuous reliable service between Guadalupe and Santa Maria in advance of significant new development in Guadalupe. Alternatives should include an elevated railroad crossing on an east-west street alignment away from SR 166.
- Improve circulation on the local street system in the City of Guadalupe to ensure adequate pedestrian and vehicular access in advance of new development. (Sub-segment 4B)

Appendix B-1 includes maps, sub-segment data sheets, and summaries of the issues, concepts, and recommended improvements described above for Route 1 in Santa Barbara County.

SAN LUIS OBISPO COUNTY

Area and Population: Description and Trends

San Luis Obispo County includes seven incorporated cities and several unincorporated communities. The coastal and near-inland areas of San Luis Obispo County enjoy a gentle Mediterranean climate and ideal conditions for growing crops throughout the year. The county lies midway between the Los Angeles Basin and the Bay Area and beyond daily commuting distance from either. Its communities have remained relatively distinct; its landscape remains distinctly rural.

State Route 1 runs along the coast through three of the four planning subregions identified by the San Luis Obispo Council of Governments: South County, Central, and North Coast. (See maps in Appendix B-2.) South County includes the cities of Arroyo Grande, Grover Beach, and Pismo Beach as well as the communities of Nipomo, Oceano, and Shell Beach. Nipomo, located near the county line on US 101, has grown rapidly over the past decade; its residents have explored the possibility of incorporating as a city. To the north, the Five Cities area[11] offers facilities and services for tourists: restaurants, campgrounds, motels, and beach-oriented mobile home parks. The City of Pismo Beach in particular is a tourist and recreational destination. Route 1 provides local access to agricultural and rural residential areas, the beachfront, recreational facilities, and residential communities in Oceano, Grover Beach, and Pismo Beach.

From Pismo Beach, Route 1 is contiguous with the US 101 alignment moving away from the coast, across the San Luis Range and into the Central area and the City of San Luis Obispo. In San Luis Obispo, Route 1 diverges from US 101, which continues north over the Cuesta Grade into the North County Area.

Route 1 heads northwest into the North Coast area. Several points of interest lie along Route 1 north of San Luis Obispo: a series of ancient volcanic peaks known as the Morros, the City of Morro Bay and the unincorporated communities of Cayucos and Cambria, beaches and spectacular ocean vistas. Popular units of the California Park system are located between Cambria and the county line: San Simeon State Park, W.R. Hearst Memorial State Beach, the Hearst Castle, and the Piedras Blancas Light Station. The economy of the North Coast is based on tourism with motels, restaurants, retailing, and recreational outfitters. The Route 1 corridor from the north city limits of San Luis Obispo through the remainder of the County is a designated All American Road.

The San Luis Obispo Council of Governments (SLOCOG) projects the population of San Luis Obispo County will grow from 258,500 in 2004 to 335,000 in 2025, an increase of 30 percent. Most of the growth is projected to occur in North County, South County, and the North Coast. The County Planning Department projects that Nipomo will grow more than 68 percent over the next 20 years. While no established community along Route 1 is projected to grow faster than 22 percent, growth in the rural South County will slightly exceed the overall rate for the County. The County's fastest growing areas will be inland communities in the North County.

[11] Collectively the cities of Arroyo Grande, Grover Beach, and Pismo Beach along with the unincorporated community of Oceano and the community of Shell Beach within Pismo Beach have long been known as the Five Cities.

The Central subregion is projected to grow 21 percent in the next 20 years. The City of San Luis Obispo, the county seat, cultural center, and home to California State Polytechnic University, is a major employment center and has a chronic shortage of affordable housing. Residents of the South County, North County and North Coast areas commute to jobs in San Luis Obispo jobs via US 101 and Route 1.

Operating Conditions and Segment Summaries

Route 1 in San Luis Obispo County consists of seven major segments, four of which have been further divided into sub-segments. Traffic characteristics of each segment are presented below. Segment maps and summaries and additional data for each of the segments and sub-segments can be found in Appendix B-2.

Segment 5 (P.M. 0.00/10.90) - Segment 5 extends from the Santa Barbara/San Luis Obispo County line to the north (second) intersection with Halcyon Road. The segment is a two-lane conventional highway without medians except at intersection approaches where left turn lanes have been constructed. While this segment of Route 1 provides a parallel route to US 101 for northbound traffic, the facility serves low volumes of largely local and regional traffic including farm vehicles and trucks carrying produce from fields to packing facilities in Guadalupe.

Segment 5 has been divided into two sub-segments at Willow Road. Both sub-segments 5A and 5B include stretches with non-standard width travel lanes as well as multiple curves and undulations, the steepest of which is a 10 percent grade south of the Nipomo Mesa. The Santa Maria River Bridge at the south end of sub-segment 5A has non-standard width outside shoulders. While little development currently exists along Segment 5A, a major mixed-use (residential, commercial, office and recreational uses) development has been approved for a 950-acre parcel at the southeast corner of Route 1 and Willow Road.

The density of rural homesites and small subdivisions increases north of Willow Road.

A study completed in the year 2000 considered improvements along Route 1 including alternatives to align the route with Halcyon Road, a more direct parallel route to the west. The realignment was rejected due to environmental issues and the cost of bringing the road to acceptable state highway standards.

The south and north legs of Halcyon are offset at the northern intersection of Halcyon Road and Route 1. A project to realign and signalize this intersection will improve operations.

In 2002, average daily traffic (ADT) was 5,500 along both Segments 5A and 5B, with trucks accounting for approximately 11 percent of peak hour traffic. Both sub-segments operated at peak hour LOS C. Traffic is projected to rise to 9,000 in sub-segment 5A by 2025 with operations remaining at LOS C. In sub-segment 5B traffic will increase to 9,500 with operations falling to LOS D by the horizon year.

Segment 6 (P.M. 10.90/16.77) - Route 1 continues toward the coast from the northern Halcyon Road intersection. The intensity of development increases gradually from south to north through this segment. Near the Oceano Airport, the highway turns north passing through Oceano, Grover Beach, and Pismo Beach. North of Grover Beach the highway follows Dolliver

Street, the main thoroughfare of Pismo Beach, then Price Street, to US 101 where Segment 6 ends. Segment 6 is a two-lane conventional highway throughout.

Motor vehicles, bicyclists, pedestrians, and sometimes equestrians all contend for access to Route 1 along this segment. Numerous driveways provide access to parks, beaches, campgrounds, recreational vehicle parks, and residences while slowing through-traffic. Pedestrian safety is a concern for area residents, especially south of Pismo Beach.

In 2002, ADT on Segment 6 ranged from 10,500 to 13,700 with an average of 12,200 ADT and an average LOS E. Average daily traffic is projected to increase to 24,300 by the year 2025 and to operate at LOS F. Beginning at Pier Street, Segment 6 includes seven signalized intersections, five of which are within Pismo Beach. Despite the numerous driveways and heavy use by tourists unfamiliar with the area, collision and injury rates on Segment 6 are well below statewide averages for the facility type. In general, the highest level of use by tourists does not occur during weekday peak hours when commuter traffic is heaviest.

Although less developable land is available adjacent to Segment 6 than Segment 5, new development to the south can be expected to add to congestion and heighten operational concerns for motorists, bicyclists and pedestrians along Segment 6.

From Pismo Beach, Route 1 and US 101 course north together for 12 miles into the City of San Luis Obispo where Route 1 resumes as an independent route.

Segment 7(P.M. 16.77/17.80) – Segment 7 is the one-mile stretch from US 101 to the city limits at Highland Drive. Segment 7 begins with a complex access system through city neighborhoods to Santa Rosa Street. The state route follows Santa Rosa Street through the northwest corridor of the city. Santa Rosa Street is a busy four-lane local thoroughfare lined with commercial, office, and residential uses with individual driveways. Through most of the segment, center lanes provide for mid-block left turns. This segment accommodates a variety of trip purposes. First, the road is used for local trips to Santa Rosa Street destinations and Sierra Vista Hospital and trips between downtown San Luis Obispo and the city's Foothill Avenue axis. Second, the road handles heavy regional traffic to California State Polytechnic University, Cuesta College, and employment sites located in downtown San Luis Obispo and along Segment 8. Finally, the facility accommodates interregional traffic between US 101 and major North Coast attractions such as Hearst Castle and the Big Sur coast. Although the majority of parcels along this heavily traveled corridor are developed, a large faculty housing project at the Southwest corner of Highland Drive and Route 1 will generate additional local traffic.

Segment 7 carried an average of 41,000 vehicles per day in 2002 with 3,100 during the peak hour. Santa Rosa Street traffic is projected to increase to 46,500 by the year 2025. Due to the heavy traffic volume and signal spacing along this segment, intersection analyses rather than traffic flow analysis would provide the appropriate measure of service level. The intersection at Foothill Boulevard accommodates the highest volume and has the most complex signal phasing. According to Vision 2025, the 2005 Regional Transportation Plan for San Luis Obispo County, this segment operated at LOS E in 2004, with LOS F expected in 2025.

Segment 7 is classified as a Highway/Regional Route on the City of San Luis Obispo Circulation Element. The Circulation Element expresses support for a study to evaluate widening Santa Rosa Street to six lanes and for constructing an underpass or overpass at Foothill Boulevard.

There are also plans to study the reconstruction of the US 101/Route 1 interchange. Caltrans has determined that major improvements to the US 101/SR 1 interchange would not resolve segment congestion without also widening Santa Rosa Street. Through the years, alternative alignments have been considered for Segments 7 and 8A. Such alternatives would route traffic from US 101 via an alternate route south of Santa Rosa Street to rejoin the existing Route 1 in the vicinity of Cuesta College. To date, concerns related to environmental impacts and growth-inducement have hampered exploration of these alternatives.

Segment 8 (P.M. 17.80/27.88) – Segment 8 extends from the north end of San Luis Obispo to the south end of Morro Bay. This segment is constructed as a four-lane expressway. The entire segment accommodates North Coast commuters and students traveling south to San Luis Obispo job sites and Cal Poly as well as interregional tourist traffic bound for North Coast destinations. Sub-segment 8A ends at Education Drive, the northern entrance to Cuesta College. Several public entities along this sub-segment are themselves employment destinations: California Department of Forestry, California Conservation Corps, County Sheriff, California Men's Colony, Camp San Luis Obispo National Guard Base, Cuesta College, El Chorro Regional Park, Dairy Creek Golf Course, and the San Luis Obispo County School District offices. High-speed through traffic coupled with high turning volumes into these facilities contributes to concerns for traffic safety and operations. A median barrier between northbound and southbound travel lanes has reduced the potential for cross-median collisions. The barrier has received favorable comments for its context sensitive design and appearance.

Most of the land along sub-segment 8B continuing to South Bay Boulevard is in agricultural use with scattered homesteads and farm-related structures. The median barrier will be extended through this sub-segment.

Segment 8 also marks the south limit of the San Luis Obispo North Coast (SLONC) All American Road that continues north to the San Luis Obispo/Monterey County line (where it joins the Big Sur Coast Highway All American Road). Segment 8 corresponds with "The Morros" section of the SLONC byway. The SLONC Corridor Enhancement Plan (CEP) addresses the broad purposes of protecting and enhancing the corridor, coordinating a coherent and appealing marketing plan, and identifying potential locations for interpretive improvements. The CEP proposes a number of specific improvements for the Morros section: gateway improvements, a Cal Poly-Cuesta College bikeway connector, an interpretation facility, utilities undergrounding, and billboard removal. Caltrans would be a partner in implementing all improvements within the Route 1 right-of-way.

Traffic on sub-segment 8A is projected to increase from 23,800 in 2002 to 30,900 in 2025. Operations here are controlled by breaks in traffic flow for the four signalized intersections. Volumes on sub-segment 8B are lower: 20,000 ADT in 2002, with 24,500 projected in the horizon year. This segment has no traffic signals and few unsignalized intersections. Operations are expected to remain at LOS A/B to the year 2025.

Segment 9 (P.M. 27.88/45.99) – Segment 9 spans the 18-mile section of highway from the south end of Morro Bay north to the junction with SR 46. Segment 9 includes sections of four-lane freeway, four-lane expressway, and two-lane expressway. The segment accommodates local and regional trips between North Coast communities as well as interregional tourist trips to Central Coast destinations.

Like Segment 8, Segment 9 is part of the SLONC All American Road. For this stretch, the CEP proposes highway ramp landscaping, bridge improvements, utilities undergrounding, billboard removal, park and ride lots in Morro Bay and Cayucos, and an interpretation site/vista overlook. The CEP also includes a number of bicycle and pedestrian improvements including continuous Class II lanes along the highway and Class I and multi-use paths west of the highway between Morro Bay and Cayucos.

Sub-segment 9A extends to the north end of Morro Bay. In 2002 this sub-segment accommodated 18,900 ADT at LOS A. Traffic is projected to grow to 23,000 ADT in 2025 with service remaining at LOS A. The grade-separated interchange with SR 41 operates poorly when traffic backs up at the intersection of SR 41 and Morro Bay's Main Street. Main Street serves as a frontage road parallel and just east of Route 1. While the roundabout programmed for the intersection of SR 41 and Main Street would clear both intersections more efficiently, the project is opposed by some community stakeholders and is being reconsidered.

Sub-segment 9B is the 4.7-mile stretch of four-lane freeway and expressway from the north end of Morro Bay to P.M. 36.80, north of Cayucos. At this point, the freeway ends and the roadway narrows to two lanes. The 2002 ADT of 11,900 on sub-segment 9B will rise to 13,400 by the year 2025. The sub-segment will continue to operate at LOS A.

Sub-segment 9C completes the segment with a nine-mile stretch of two-lane expressway through open space and rangeland. Traffic volumes are considerably lower than on the previous sub-segment: 7,300 ADT in 2002 and projected to rise to 7,900 by 2025. This two-lane stretch with limited passing opportunities currently operates at LOS D but is expected to fall to LOS D/E by 2025. The settlement of Harmony is located east side of the highway just north of the crest of a small hill. Harmony is accessed via an at-grade intersection with Harmony Valley Road. (A private road intersects Route 1 opposite Harmony Valley Road) Highway operations will be improved with construction of a southbound left turn lane at the intersection. The Harmony Climbing Lane project study found that passing lanes in this area would be technically feasible, but may not be cost-effective. Technically, passing lanes would be an operational improvement rather than additional capacity. However, the Coastal Commission may oppose such a project if it is seen as widening.

<u>Segment 10 (P.M. 45.99/71.34)</u> Segment 10 extends from SR 46 to San Carpoforo Creek, three miles south of the San Luis Obispo/Monterey County line. While commuter traffic is reflected in peak hour volumes, tourist-related traffic predominates in the segment.

Segment 10A is a two-lane expressway which ends at the signalized Main Street exit to the coastal community of Cambria. Residents travel Route 1 for jobs and services in San Luis Obispo and North County. Cambria has more than 6,000 residents. It is the last settlement with services such as banking, supermarket, professional offices, hardware and drug stores before the City of Carmel-by-the-Sea, some 100 miles north in Monterey County. Cambria village is a popular tourist destination with shopping, dining, and lodging facilities.

Sub-segment 10B continues north as a two-lane expressway through and beyond Cambria, providing access to San Simeon and the Hearst San Simeon State Historical Monument (Hearst Castle). A previous alignment of Route 1 followed Main Street through Cambria. The bypass was constructed in the early 1960s. Traffic signals are located at the intersections with Burton Drive and Windsor Boulevard in Cambria. San Simeon, a small settlement approximately three

miles south of Hearst Castle, provides housing and limited services for employees of the Monument as well as lodging and restaurants for tourists. Roads parallel to Route 1 provide access to properties on the west and east sides of the settlement while limiting access to the highway.

Sub-Segment 10C continues as a conventional highway from the Hearst Castle entrance at San Simeon to San Carpoforo Creek. Lanes and shoulders of less than standard width are common throughout this sub-segment.

The area west of sub-segments 10B and 10C is encumbered by a scenic easement acquired from the Hearst Corporation in 2005. This acquisition also included the rights for Caltrans to realign portions of the highway affected by coastal erosion. Concurrent conservation agreements limit development on some 82,000 acres of Hearst Ranch property, including most lands to the east ridgeline (viewshed) from north of San Simeon to the San Luis Obispo/Monterey County line.

Segment 10 includes the north portion of the Harmony Valley/South San Simeon Coast section and the entire Big Sur Gateway/North San Simeon Coast section identified in the SLONC Corridor Enhancement Plan (CEP). Here the CEP proposes passing lanes, two interpretive sites/overlooks, highway operational improvements, pedestrian access improvements, utilities undergrounding, and billboard removal. The CEP also includes a number of bicycle and pedestrian improvements, including Class II facilities along Route 1 as far north as the Hearst Castle.

Segment 10A carried 9,000 ADT in 2002 while operating at LOS D. The service level is expected to remain at LOS D in 2025 when ADT reaches 11,500.

In 2002, ADT on sub-segment 10B was 6,100. Traffic is projected to reach 8,500 ADT by the year 2025. As with sub-segment 10A, LOS is expected to remain at LOS D on sub-segment 10B to the planning horizon.

On sub-segment 10C, ADT was 3,200, in 2003 - just over half the traffic carried on sub-segment 10B. The drop in volume reflects the high number of daily return trips to Hearst Castle and San Simeon from locations to the south. Volume will increase to 5,200 by the year 2025 while LOS declines from C to D.

<u>Segment 11 (P.M. 71.34/74.32)</u> Segment 11 begins at San Carpoforo Creek and ends at the San Luis Obispo/Monterey County line. San Carpoforo Creek marks the beginning of the unique topography that characterizes the Big Sur coast. North of the Creek, the highway begins a steep rise, winding along mountainsides above the Pacific coastline. The 75-mile long corridor that is addressed in the Coast Highway Management Plan (CHMP) extends north from San Carpoforo Creek in San Luis Obispo County to the Carmel River in Monterey County.

Lanes and shoulders are less than current standard width throughout this sub-segment. The sheer rock walls and steep slopes along Segment 11 and the Monterey County segments that lie within the CHMP area, make lane widening and accommodating the California Coastal Trail (CCT) more difficult than in other locations. It is likely that portions of the CCT will coincide with the Route 1 right-of-way in Segment 11.

In the year 2002, the ADT on Segment 11 was 2,600. Traffic volume is projected to increase to 4,200 by the year 2025. This segment operates at LOS C, but is projected to operate at LOS D by the year 2025.

Linkages – US 101, SR 41, and SR 46 connect with Route 1 (south to north) in San Luis Obispo County.

Alternatives to Reduce Demand or Improve Operations

In San Luis Obispo County, tourism accounts for a large share of traffic on Route 1; the geographic areas and demographic groups that provide the majority of visitors to the County's coastal areas are expanding rapidly. An Intermodal Systems Emphasis scenario guides the San Luis Obispo County Regional Transportation Plan towards a balance among highways, streets and roads; transit and rail; and non-motorized transportation. Patterns of highway use and development along Route 1 limit the likelihood that alternatives will reduce demand significantly. Nevertheless, it will be important to identify alternatives most likely to contribute to demand reduction and management. Various alternatives are discussed below.

Passenger Rail – Amtrak provides passenger rail service for interregional travel along the central coast between San Luis Obispo and the large metropolitan areas to the north and south (with a stop in Grover Beach). While passenger rail offers a viable alternative to travel on US Route 101 which carries much higher volumes of interregional traffic through the County, this mode has little potential to reduce demand on Route 1. Residential densities and travel demand do not warrant consideration of short-haul passenger rail service between San Luis Obispo and Grover Beach, Guadalupe, or Lompoc, the District 5 communities with rail stations near Route 1. The Union Pacific tracks follow US 101 north of San Luis Obispo.

Freight Rail – In San Luis Obispo County, Route 1 is not a major goods movement corridor. Therefore, freight rail is not an alternative to traveling Route 1.

Urban Transit – All the communities along Route 1 in San Luis Obispo County are served by fixed route urban transit systems. The South County Area Transit (SCAT) system serves Arroyo Grande, Grover Beach, Pismo Beach, and Oceano, while SLO Transit serves the City of San Luis Obispo. Both these services offer fixed route transit service on weekdays, with headways of one hour or less. Trolley service through downtown San Luis Obispo and Cambria is provided by SLO Transit and the Cambria Trolley (the "Otter"), respectively. A beach area shuttle could relieve seasonal traffic demand on Route 1 in Pismo Beach and the Five Cities area.

Transit is an especially important component of weekday circulation within the relatively compact City of San Luis Obispo. Free service for Cal Poly students, faculty and staff is intended to reduce both traffic on local streets such as Santa Rosa Street (Route 1) and the need for parking areas on campus.

A number of communities provide Dial-a-Ride and other demand service to special populations.

Regional (Inter-city) Transit – A significant amount of travel takes place among communities along Route 1 in San Luis Obispo County especially trips into San Luis Obispo. In South County, the SCAT system functions as a hybrid of urban and inter-city transit within and

between the closely spaced communities. This service provides transfers to the Central Coast Area Transit (inter-city service) at the Grover Beach Multi-Modal Center. With this feature, the SCAT system accommodates South County commuters to the San Luis Obispo area.

The Central Coast Area Transit (CCAT) system offers scheduled, fixed route, early morning-to-early evening inter-city service centered on San Luis Obispo. CCAT brings riders into the City, Cal Poly, and Cuesta College not only from South County communities and Santa Maria, but also from cities along US 101 north of Cuesta Grade and from the coastal communities on Route 1 as far north as San Simeon. The service between San Luis Obispo and Cuesta College is one of the most productive in the County; frequently all seats are filled.

CCAT is an important service element for commuters and college students who might otherwise travel on Route 1 by automobile. The CCAT service has been designed to facilitate inter-modal travel, with stops at park and ride facilities, multi-modal centers shared with urban transit stops, and bike racks affixed to each bus. The Regional Transit Authority (RTA) which operates the SCAT and CCAT adjusts service frequency and vehicle size as needed to maintain efficiency. The inter-city service, when supported by land use planning and investments in inter-modal facilities, has the potential to accommodate an increasing share of trips on Route 1 in the future.

Commercial bus carriers, notably Greyhound Bus Lines, also serve the City of San Luis Obispo County and destinations north and south. Greyhound recently revealed plans to discontinue stops at smaller communities in the county. The company's major role is accommodating interregional rather than inter-city travel.

Non-motorized Transportation – The 1998 County Bikeways Plan and the 2005 Regional Transportation Plan depict a system of bikeways providing access throughout major population centers as well as linkages among such centers and regional recreational destinations. These bikeways offer a viable alternative to intra-city and some inter-city automobile travel, especially in the more densely settled communities such as San Luis Obispo and the tourist-oriented South County area. Bicycle trips have minimal impacts on County commuter traffic except in the City of San Luis Obispo, where nearly five per cent of commuter trips are by bicycle.

The bikeway system provides inter-modal access to park-and-ride facilities for inter-city transit or rail users. In support of this, SLOCOG is developing a comprehensive inter-linked bicycle system consisting of Class I and Class II bikeways within and between all communities. The system will be supported with facilities such as bicycle lockers and security racks at all park and ride lots, major bus stops and major distribution centers, and policies allowing bikes on buses. All regional fixed-route transit vehicles have bike racks.

Route 1 is shown as a suggested route on the County's Bike Map. The Pacific Coast Bike Route follows much of the Route. The recent designation of San Luis Obispo County's Route 1 from San Luis Obispo north as an All American Road could attract even more recreational cyclists to this already popular stretch of the highway. Much of the Route has Class II bike lanes.

Transportation Demand Management - Transportation demand management includes a range of techniques to address traffic congestion by decreasing single occupant vehicle traffic during peak hours. These methods include ridesharing promotion, ride matching, park and ride lots,

flexible work hours, alternative work location, targeted pricing of parking or parking management (by area, vehicle occupancy, time of day or duration of stay).

Vanpools can be an effective travel option for the journey to work for major employers. Several vanpools that serve South County commuters have the effect of reducing trips on both US 101 and Route 1. Although demand and regional transportation policy support vanpools, funding has become a difficult issue.

Intelligent Transportation Systems (ITS) – In San Luis Obispo County Route 1 carries significant levels of urban and regional commuter traffic, and especially interregional tourist traffic. Intelligent Transportation Systems projects promise to aid travelers and improve roadway operations for all these users.

ITS projects have been implemented in the County and additional projects have a high priority. When the Central Coast ITS Strategic Plan is fully implemented, the following elements will be available on Route 1:

- Smart call boxes from City of San Luis Obispo to San Luis Obispo/Monterey County line
- CCTV camera and CMS installation in Segment 9
- Traffic surveillance stations (loop detectors) through Segments 7, 8, and 9
- Changeable message signs (CMS) and/or highway advisory radio (HAR) on US 101 in San Luis Obispo and Paso Robles to warn of traffic incidents, slides, and road closures along Route 1
- Transit Management including vehicle tracking, schedule management fare collection, video surveillance and signal priority for transit

Land Use Planning - With the exceptions of the urban cores of the cities of Pismo Beach, San Luis Obispo, and Morro Bay, much of the existing development along Route 1 in San Luis Obispo County has occurred at low densities with separation of land uses for a largely automobile-dependent population. The Nipomo Mesa area southwest of the intersection of Route 1 and Willow Road provides an example of low-density development in the unincorporated area. Large-lot scattered rural development is difficult to serve with urban transit and it is not conducive to walking or cycling to retail, office, job site, or school destinations. By contrast, unincorporated Cayucos and Cambria in the North Coast area were established communities earlier in the 20th century. Later development has extended the original patterns of these communities, albeit at lower densities.

Most communities in San Luis Obispo County have addressed the interrelationships among various land uses and the transportation system to achieve more desirable outcomes. The County and the cities along Route 1 have complementary policies aimed at preserving agricultural land, minimizing environmental impacts, and ensuring that new urban-type development takes place where urban services can be provided. The City of San Luis Obispo General Plan includes goals specifically calling for the reduction in automobile use through land use strategies and traffic demand management measures. The City of Pismo Beach General Plan encourages clustered development and pedestrian scale commercial areas. This could be particularly effective in the downtown area where Route 1 experiences traffic congestion. A primary goal of the San Luis Obispo Council of Governments is to support livable community concepts and efforts. A range of policies favoring less dependence on the automobile supports this goal.

Areas lying within the California Coastal Zone are subject to additional policies that call for defensible urban-rural boundaries, non-motorized transportation alternatives, increased coastal access, and protection of the visual qualities of communities' character and rural setting. Morro Bay and Cambria are the largest urban areas within the county's Coastal Zone, which reaches farthest inland around Morro Bay and north of Cayucos to the San Luis Obispo/Monterey County line.

Transportation Concept and Strategies

Historically, District 5 has targeted a peak hour LOS C or better on the state highways through rural and urban communities and scenic corridors such as Route 1 in San Luis Obispo County. Given today's challenging traffic conditions, existing development and environmental and financial constraints, LOS D or better will be a more realistic target for most segments.

Segment 5 - The transportation concept for Segment 5 is peak LOS D or better. A number of actions can be taken to improve the operation of this rural highway where adjacent land use is changing rapidly:

- Improve vertical and horizontal alignments.
- Provide standard width travel lanes and shoulders and turnouts for slow-moving vehicles to accommodate agricultural vehicles and bicycles in addition to passenger vehicles.
- Provide channelization for turns.
- Minimize and consolidate driveways.
- Extend Willow Road to US 101 to accommodate traffic from development projects east and north of Route 1.
- Provide Class II bicycle facilities throughout.
- Support transit-oriented development.
- Conduct long-range planning for better circulation between Route 1 and US 101.
- Continue to support TDMs and intermodal facilities to reduce demand.

Development has been proposed for several parcels in the unincorporated area near Willow Road. In order to avoid impacting Route 1 (and US 101) with project traffic that could be accommodated on extended or realigned local roads, a long-range plan for circulation in this area should be undertaken by local agencies and Caltrans and funded by project sponsors.

Segment 6 - The transportation concept for Segment 6 is peak LOS C/D or better. The facility should be widened to four lanes where possible.

Class II bicycle facilities throughout Segment 6 would provide a valuable amenity for tourists and local residents alike. Bicycling has potential as a substitute for driving on beach-oriented Segment 6. Roadside motor vehicle parking would be an issue in providing dedicated bicycle facilities along the pavement.

Additional actions that will improve highway operations and conditions for non-motorized users include:

- Provide standard width travel lanes and shoulders and turnouts for slow-moving vehicles to accommodate use by agricultural vehicles and bicycles in addition to passenger vehicles.

- Provide channelization for turns.
- Develop Class I multi-use trail in Oceano area for use by bicyclists, walkers, and equestrians.
- Minimize and consolidate driveways.
- Address area flooding/drainage issues.
- Consider locally sponsored CSS projects
- Improve local circulation and parking in Pismo Beach to reduce congestion on Route 1.
- Provide Class II bicycle facilities through segment.
- Improve pedestrian access throughout the segment.
- Plan for pedestrian-friendly/transit-friendly modifications including sidewalks, medians, traffic calming, access to rail station and bus stops, and park and ride lots.
- Enhance shuttle service for motels, restaurants, shopping, and beach area destinations.
- Support planning for circulation in developing area along Segment 5 to minimize future traffic impacts to Segment 6.
- Continue to support TDMs and intermodal facilities to reduce demand.

Segment 7 - The transportation concept for Segment 7 is peak LOS C/D or better. Widening the facility to six lanes should be evaluated and improving the interchange with US 101 pursued. Improved pedestrian access such as grade-separated crossings could contribute to improved roadway operations. Other alignments, either a new Route 1 facility or a continuous and reliable route from south San Luis Obispo to Cuesta College over the local road system, have been considered in the past and should be revisited.

Recommended strategies for this segment include:

- Consider CMS or HAR for NB US 101 to advise of road conditions on Route 1.
- Improve local circulation (e.g., bus pullouts).
- Improve conditions for bicyclists and pedestrians at intersection with Foothill Boulevard.
- Synchronize signals (e.g., optimize and synchronize with ITS to maintain traffic flow).
- Consider locally sponsored CSS projects (e.g., landscaped medians).
- Increase transit services to meet demand.
- Improve pedestrian access.
- Evaluate grade separation at Foothill Boulevard intersection.
- Evaluate alternatives to achieve acceptable traffic flow on Route 1 between US 101 and Cuesta College: widen Santa Rosa Street to six lanes; adopt/construct alternate alignment for regional and interregional traffic on Segments 7 and 8A; improve circulation for local and regional traffic on city and county roads).
- Continue to support TDMs and intermodal facilities to reduce demand.

Segment 8 - The transportation concept for Segment 8 is LOS C or better with at least a four-lane expressway throughout.

Recommendations for this segment include:

- Consolidate driveways where possible and minimize access points.
- Convert conventional highway sections to expressway where possible.
- Convert expressway to freeway where possible.
- Evaluate potential for a grade-separated interchange at Education Drive.

- Continue to search for opportunities to improve traffic flow on Route 1 between US 101 and Cuesta College (e.g., alternative alignment for regional and interregional traffic on Segments 7 and 8A and/or improved circulation for local and regional traffic on the system of city and county roads).
- Widen non-standard width bridges.
- Continue to support TDMs and intermodal facilities to reduce demand.

Segment 9 - The transportation concept for Segment 9 is peak LOS C/D or better. Operations will be improved as access is consolidated extending the freeway sections of sub-segments 9A and 9B. Acquisition of coastal land along sub-segment 9C for public access and enjoyment will require additional planning for safe highway access with minimal impacts to highway operations.

A number of actions can be taken to improve the operation of this segment:

- Consolidate access to convert expressway sections to freeway as feasible through sub-segments 9A and 9B.
- Construct new interchange facilities to accommodate traffic at intersections SR 41 and Main Street.
- Continue to evaluate need for passing lanes in sub-segment 9C.
- Install CMS to advise of delays ahead.
- Support provision of Class I bicycle/pedestrian facilities from Morro Bay to Cayucos.
- Provide pullouts, channelization, and/or passing lanes to improve traffic flow on sub-segment 9C.
- Support provision of safe non-motorized coastal access from east side of highway at south end of Cayucos.
- Consider actions in SLONC CEP.
- Provide for safe access to coastal activities with signage, well marked highway exits, and a system of frontage roads and connecting recreational trails where possible.
- Widen non-standard width bridges.
- Continue to support TDMs and intermodal facilities to reduce demand.

Segment 10 - The transportation concept for Segment 10 is peak LOS D or better. New attractions along sub-segment 10B may require additional parking and new access points. Advance planning for safe highway access will also minimize impacts to highway operations.

A number of actions can be taken to maintain acceptable highway operations:

- Consolidate driveways where possible and minimize access points.
- Improve opportunities for safe pedestrian access between west and east sides of the highway in San Simeon and other points of interest.
- Improve facility for use by bicyclists.
- Widen non-standard shoulders.
- Provide for safe access to coastal activities with signage, well marked highway exits, and a system of frontage roads and connecting recreational trails where possible.
- Improve vertical and horizontal alignments on sub-segment 10C.
- Install CMS to advise of delays ahead.

- Provide pullouts, channelization, and/or passing lanes to improve traffic flow.
- Consider actions in SLONC CEP.
- Support development of the California Coastal Trail.
- Continue to support TDMs and intermodal facilities to reduce demand.

Segment 11 - The transportation concept for Segment 11 is peak LOS D or better. Although topographic, geological, environmental, and other constraints exist along the Big Sur coast, the following improvements should be made where feasible:

- Widen travel lanes and shoulders to 12 and four feet, respectively. *(Four-foot shoulders are less than standard and would require a design exception.)*
- Consolidate driveways where possible and minimize access points.
- Turn-outs and pull-outs should be located to facilitate operations and travelers' use and enjoyment of the corridor.
- Support development of the California Coastal Trail (CCT) with a focused process for public participation, planning, programming, design, construction, and maintenance; develop criteria for integrating the trail into capital improvements; accommodate the trail in the highway right-of-way as circumstances require.
- Continue to support TDMs and intermodal facilities to reduce demand.

Additional actions identified in the Coast Highway Management Plan for Segment 11 are incorporated by reference. These actions address topics including maintenance, slope stabilization, access, and aesthetics. Caltrans will also cooperate with SLOCOG in matters related to implementation of the SLONC CEP.

Appendix B-2 includes maps, sub-segment data sheets, and summaries of the issues, concepts, and recommended improvements described above for Route 1 in San Luis Obispo County.

MONTEREY COUNTY

Area and Population: Description and Trends

Monterey County is the only county in District 5 with major development centers along two major north-south State highway corridors. (See maps in Appendix B-3.) In Monterey County, as in Santa Barbara and San Luis Obispo Counties, the county seat and largest city, Salinas, is located on US 101. Unlike Santa Barbara and San Luis Obispo Counties, the historic center and County namesake, the City of Monterey lies to the west on Route 1.

Local features in Monterey County have created patterns of economic activity, land use, and circulation that are recognized in county planning areas. Historically, population and economic activity have been concentrated in two areas. The Monterey Peninsula along Route 1 includes seven of the county's twelve cities. Tourism, recreation, and the arts largely support the cities of Monterey, Pacific Grove, and Carmel-by-the-Sea in the latter area. The City of Del Rey Oaks is located on SR 218, less than a mile east of Route 1. Further growth in these cities is constrained by jurisdictional boundaries, water supply, and other environmental factors. To the north, the cities of Seaside, Marina, and Sand City have undergone significant growth and development in response to the closure of the Fort Ord military facility and establishment of a CSU Monterey Bay campus on the site. Route 1 is the primary highway serving the Monterey Peninsula. Coastal agriculture is concentrated between the Salinas and Pajaro Rivers. The unincorporated community of Castroville is located in this area.

Lying inland on US 101, Salinas is the hub of agricultural activity for the rich Salinas Valley. South of Salinas, the cities of King City, Greenfield, Soledad, and Gonzales are all located along US 101 in the central Salinas Valley. Historically, the economies of these cities were based in agriculture. In recent years, however, the shortage of affordable housing in Santa Clara County has resulted in significant residential development here and in the unincorporated community of Prunedale to the north. With the new residential growth and expansion of prison facilities in Soledad, communities along US 101 are being challenged in the areas of water quality, air quality, urban services, and conversion of ag land, as well as transportation.

No cities are located in the remaining areas and their current populations are small. All have potential for significant future growth, with the exception of the Coast area on Route 1 south of the Monterey Peninsula. Rugged topography, limited access, large public holdings, and coastal development policies limit growth along the Coast area south of the Carmel River. A corridor management plan, the Big Sur Coast Highway Management Plan, focuses on maintaining and preserving important qualities of the Route 1 corridor in the Coast area.

The Association of Monterey Bay Area Governments (AMBAG) projects that Monterey County will grow from a population of 433,600 in the year 2005 to 564,900 in 2025, an increase of 30 percent. The cities along US 101 will see the highest rates of growth; collectively they will grow some 48 percent over the 20-year period. The county's unincorporated area will grow a moderate 18 percent. On the coast, a major population shift has been underway the last two decades and will continue into the future. The combined population of the four coastal cities to the south (Carmel-by-the-Sea, Pacific Grove, Monterey, and Del Rey Oaks) is expected to decline slightly (4 percent by 2025), while the cities to the north (Seaside, Sand City, and Marina) together will grow by 21 percent. The conversion of Peninsula housing units from primary residences to second homes has accelerated in recent years, most notably in Carmel-by-the-Sea. Both Seaside and Marina will be larger than the City of Monterey within the next 5

years. New projects such as University Villages for more than 1,200 new residences will accommodate growth on the former Ft. Ord base, in this case in Marina. This growth pattern will have significant impacts on the central Monterey Bay sections of Route 1.

A high level of job commuting occurs between housing and employment centers of the Monterey Peninsula and Salinas areas. Examples include service workers employed in tourist-related jobs on the Monterey Peninsula (and South Coast as well), but residing in Salinas where housing costs have historically been lower, and workers traveling from homes on the Peninsula to jobs in Salinas. The county also houses increasing numbers of workers who commute to job sites in Santa Clara County. While most of these commuters' residences are in Salinas or other communities along US 101, the Monterey Peninsula housing market has also been affected by this demand.

Growth in Monterey County itself, the San Joaquin Valley, and Bay Area and the growing population of leisure-seeking retirees will result in increased tourist-related traffic in Monterey County over the next 20 years.

Goods movement is a vital industry in Monterey County where commercial trucking is recognized as the most efficient way to move perishable agricultural commodities from field to processor and on towards out-of-area markets. Route 1 provides important circulation between growing fields and processing centers in Marina, Castroville, and Pajaro in Monterey County, and Watsonville in Santa Cruz County. AMBAG'S 1995 Regional Freight Study identified three critical problems shared by Monterey County's agricultural community: (1) poor logistics, communications, and shipping practices; (2) lack of alternative service options; and (3) inadequate capacity on key segments of the truck transportation system. The 2005 Monterey County Regional Transportation Plan identifies the stretch of Route 1 between SR 183 and Salinas Road (the non-freeway portion of Segment 15), as one of those key stretches that are impacted by the combination of a high percentage of truck traffic and poor levels of service.

Operating Conditions and Segment Summaries

Route 1 in Monterey County consists of four segments. Two of these, 12 and 13, comprise the Big Sur Coast Highway All American Road. This portion of the highway and the northernmost segment in San Luis Obispo County were the focus of the Coast Highway Management Plan (CHMP).

Segments 14 and 15 trace the arc of the Monterey Bay from the Carmel River Bridge to the Monterey/Santa Cruz County line. Maps and details on each of the Monterey County segments can be found in Appendix B-3.

Segment 12 (P.M. 0.00/67.90) and Segment 13 (P.M. 67.90/72.30) – Segments 12 and 13 follow the Big Sur coastline as a narrow two-lane highway winding and climbing along ledges cut into rock walls and bridges spanning canyons. In some areas, the highway passes through coastal terraces where small settlements with lodging facilities have been established. Travelers bound for recreational destinations or simply out to enjoy the coastal scenery account for the majority of traffic on Segments 12 and 13. The highway is the lifeline for permanent residents and businesses along the corridor. No state highway or significant local roads intersect this 72-mile long stretch of Route 1.

As with Segment 11 in San Luis Obispo County, these Big Sur coast segments are subject to weather-related road damage and closure for landslides and rock falls. The tight curves and steep grades that challenge drivers also challenge Caltrans as it strives to maintain the highway in good repair. Conditions that result in traffic delays on the narrow highway include slow-moving vehicles, disabled vehicles, congestion, fallen rocks or other obstructions on the roadway, and maintenance work.

In many locations travel lanes and paved shoulders are narrower than the currrent standard. The sheer rock walls and steep slopes along Segment 11 and the Monterey County segments that lie within the CHMP area, make lane widening and accommodating the California Coastal Trail (CCT) more difficult than in other locations. It is likely that portions of the CCT will coincide with the Route 1 right-of-way in Segments 12 and 13.

Traffic volumes increase from south to north through sub-segments 12A, B, and C and Segment 13. This reflects the greater numbers of round trips into the corridor from the Monterey Peninsula (as compared with trips originating in San Luis Obispo County), in addition to daily trips generated by permanent residences that are concentrated in the north portion of the corridor, along Segment 13. The lower volumes in the southern sub-segments do not translate into higher levels of service in these areas. While there are no passing lanes in either Segment 12 or Segment 13, the extreme grades and curves in sub-segment 12A most severely limit sight distance and passing opportunities. Sub-segment 12B additionally includes the community of Big Sur with a concentration of residences and retail, hospitality, and community services. Local traffic, visitors' vehicles entering or leaving the traffic stream, and pedestrian traffic all affect the flow of traffic on Route 1 through the area.

In 2002, ADT was 2,900 on sub-segment 12A, which ends at the Castro Canyon Bridge and 4,700 on sub-segment 12B, which continues to the entrance to Andrew Molera State Park at P.M. 51.20. For the year 2025, ADT is projected to rise to 3,400 in 12A and 6,300 in 12B. Both sub-segments operated at LOS C/E in 2002. Service on 12A would fall to LOS C/F, while 12B would fall to LOS D/E at the projected volumes. Steep grades and tight curves result in poor levels of service with relatively low traffic volumes.

Sub-segment 12C extends from Andrew Molera State Park to the Malpaso Creek Bridge at P.M. 67.90. The 5,800 ADT in the year 2002 is projected to rise to 7,500 by 2025, with LOS falling from C to D.

Segment 13 continues from the Malpaso Creek Bridge to the Carmel River Bridge, the end of the designated All American Road. Here the effects of short trips to and from the Monterey Peninsula are most evident. The 13,200 ADT in the year 2002 was four and one-half times the value for sub-segment 12A to the south. Traffic is projected to rise to 16,400 in 2025 with LOS falling from D/F to E/F over the period.

<u>Segment 14 (P.M. 72.30/90.98)</u> - This segment begins at the Carmel River and extends to SR 156. The Carmel River Bridge marks a break between the more leisurely traffic pace of Segment 13 and the high-volume urban-type traffic flows beginning north of the River. Eighteen-mile-long Segment 14 is the spine of a complex local network of area roadways. The highway connects the Monterey Peninsula cities of Carmel, Pacific Grove, Monterey, Del Rey Oaks, Sand City, Seaside, and Marina. Along its course, Segment 14 intersects with five state

highways, more than any other route segment in District 5. Several major local roads also connect with the segment.

The majority of Peninsula-bound tourists from Southern California, the Central Valley, and the Bay Area take SR 68 or SR 156 from US 101 to Segment 14. Regional traffic bound for the Community Hospital of the Monterey Peninsula, coastal golf courses, Monterey Peninsula College, California State University at Monterey Bay, and major shopping centers at Carmel, Seaside, and Sand City take access via Segment 14. Regional commuter traffic is also heaviest on this segment. Peninsula residents travel to jobs in Salinas and north into Santa Cruz and Santa Clara Counties. Tourist industry employees travel to the Peninsula from communities to the north and from Salinas and other communities along US 101.

Segment 14 has been divided into three sub-segments for analysis. Sub-segment 14A is a 2.8-mile long stretch of two-lane and four-lane conventional highway from the Carmel River to the junction with SR 68 West. The sub-segment is lined with trees and heavy vegetation. Traffic is controlled by signals at four busy intersections: Rio and Carmel Valley Roads, Ocean Avenue, and Carpenter Street. Carmel residents take access to shopping centers east of the highway via Route 1. In addition, development along Carmel Valley Road (G16 on the County road system) including the unincorporated community of Carmel Valley and several golf courses, generate significant traffic on Route 1. In 2002 sub-segment 14A carried 46,000 ADT; volume could reach 63,000 by the year 2025. The facility currently operates at LOS F and would remain at that level in 2025.

Planning for a freeway bypass of sub-segment 14A through Hatton Canyon was halted in 1999 and the reserved right-of-way subsequently transferred to the California Department of Parks and Recreation. With this decision, attention was focused on improving the existing highway with operational improvements including turn lanes and acceleration lanes. A northbound climbing lane has been constructed between Carmel Valley Road and Morse Drive. An extension of the lane from Rio Road to Carmel Valley Road is included in the 2005 Monterey County Regional Transportation Plan (RTP). The SR 1/SR 68 West interchange at the north end of the sub-segment currently operates poorly. Additional development in the unincorporated area to the west of Route 1 will exacerbate congestion and delay conditions and impede access to the Community Hospital of the Monterey Peninsula from the interchange. A project to modify the interchange is included in the TAMC's 2005 RTP.

Sub-segment 14B, continues from SR 68 West to SR 68 East as a freeway with four to six lanes. This sub-segment carries local traffic generated in Monterey and Pacific Grove, commuter traffic, tourist traffic, and other interregional traffic from US 101 and SR 156. Traffic volume is higher here than in sub-segment 14A: 57,500 in 2002, projected to reach 72,500 by 2025. The poor level of service will remain at F in the horizon year. Sub-segment 14C continues north from where SR 68 East joins Route 1. Traffic volume is higher still on sub-segment 14C, a four- to six-lane freeway extending from SR 68 East to the interchange with SR 156. This sub-segment passes fast-growing coastal centers: Seaside, Sand City, Marina, and the former Fort Ord military base. The base is now partly redeveloped with California State University Monterey Bay, facilities of the University of California at Santa Cruz, and other uses. Daily traffic, which averaged 66,000 at LOS D in the year 2002, is projected to increase to 91,500 by 2025. The level of service would fall from E/F to F.

Traffic volumes and patterns on sub-segments 14B and 14C have changed significantly over the past 20 years. In response to growing congestion and operational deficiencies during this period, portions of these sub-segments have been the focus of special studies. Three such studies, AMBAG's 1990 State Route 1 Corridor Study through Monterey and Seaside, Sand City's 1998 Traffic Operation Study – Route 1 Corridor, and the 2004 Nexus Study for a Regional Development Impact Fee prepared for the Transportation Agency of Monterey County (TAMC), all identified improvements to address needs. TAMC's 2005 RTP includes projects to widen the highway between Fremont Street and Del Monte Avenue, construct improvements at the Fremont Street, Del Monte Avenue and Canyon Del Rey Boulevard interchanges, and construct a Monterey Road interchange between Fremont Street and Light Fighter Drive. In addition, the City of Marina proposes in conjunction with TAMC and Caltrans to study modifications to the interchange at 12th Street to accommodate future demand.

Goods movement is an important consideration along the Monterey Bay. Route 1 from Segment 14 through Segment 17 in Santa Cruz County is a designated High Emphasis Route on the Interregional Road System. Congestion, outdated freeway ramps, and traveler information are particular issues for truckers using this corridor. Based upon the studies identified above and other analysis demonstrating need, TAMC has recommended locations for selective widening, operational improvements, and interchange construction and modification throughout Segment 14.

Segment 15 (P.M. 90.98/R102.03) – SR 156 originates at P.M. R90.98 on Route 1. More than half the northbound traffic leaves the route to travel east on SR 156 towards US 101. Segment 15 of Route 1 continues north as a two-lane expressway and conventional highway, passing Moss Landing and the mouth of Elkhorn Slough. The final 0.6 mile of Segment 15 is a four-lane freeway extending to the Monterey County/Santa Cruz county line. A junction with SR 183 is reached approximately one mile north of the SR 156 junction. Traffic from SR 183 replenishes the traffic flow on Route 1 with traffic from Castroville and Salinas.

This segment carries a combination of local, agricultural, tourist/recreational, and regional commuter traffic in both directions. As indicated above, the non-freeway portion of Segment 15 is recognized as a key stretch in the truck transportation system that is impacted by the combination of high truck usage and poor levels of service. Commuter traffic is growing as well. An increasing number of residents of the Watsonville area in south Santa Cruz County travel the route to Monterey Peninsula job sites or classes at the CSU at Monterey Bay campus. Likewise residents of the Peninsula travel Route 1 to employment sites in Santa Cruz and Santa Clara Counties.

The two-lane section of Route 1 includes a number of at-grade intersections. Increasing numbers of vehicles waiting for opportunities to enter or exit Route 1 contribute to significantly degraded facility operations. Speed and unsafe passing and turning have contributed to collision rates above the state average. Measures have been implemented to improve safety: this stretch is a designated Safety Corridor with increased enforcement, daylight headlight zone, signing, striping, and raised profile thermoplastic in the centerline. Potential changes to the intersection of Route 1 with SR 183 are being studied as part of the redevelopment effort for the community of Castroville.

Linkages - State Routes 68 West, 68 East, 218, 183, and 156 West all connect with Route 1 (south to north) in Monterey County.

Alternatives to Reduce Demand or Improve Operations

While major improvements to the highway facility will be required to accommodate increased travel demand, alternatives to travel by private automobile must also play a big part in managing Route 1 in Monterey County. These include alternative modes of travel, transportation demand management, measures to control the flow of traffic, and new land use patterns. Operational improvements including Intelligent Transportation Systems elements can improve operations and optimize the use of highway capacity.

Passenger Rail – Passenger rail in Monterey County operates on Union Pacific tracks that parallel US 101 from the San Luis Obispo/Monterey County line to Salinas. North of Salinas the tracks follow the SR 183 alignment to Pajaro Junction in Monterey County. The line then veers east returning to the US 101 corridor near the San Benito/Santa Clara County line south of Gilroy. Amtrak's Coast Starlight passenger service provides Salinas with daily inter-city service (both northbound and southbound). The Starlight Service is accessible to residents of the Monterey Peninsula area (Route 1 corridor) via Monterey-Salinas Transit (MST) which provides scheduled and on-call service to the Salinas Amtrak station. This or additional intercity passenger rail service out of Salinas such as the Coast Daylight would have minimal impact on travel demand on Route 1. Should the Union Pacific tracks be upgraded for higher speed rail service and with rail connections from the Peninsula to a mainline station in Pajaro or Gilroy, this intercity service could be an attractive alternative to travel on both Route 1 and US 101.

Commuters and interregional travelers from the Peninsula area have limited access to rail services at present. Amtrak provides bus service from the Monterey Peninsula and inland areas to San Jose where connections to Oakland, Davis, and Sacramento are available via the Capitols lines. Commuters from Monterey County's Peninsula can also take a bus to Gilroy for connections to Caltrain service to Santa Clara, San Mateo, and San Francisco Counties. TAMC plans to extend the Caltrain rail service as far as Salinas. While the most direct benefits of this extended Caltrain service would be as an alternative to travel on the US 101 corridor, planned stations in Castroville and Watsonville could ease traffic on Route 1, especially if users can approach these stations via the regional bus system.

TAMC is also pursuing ambitious plans to restore the intercity rail service between Monterey and San Francisco that was discontinued in 1971. This will entail purchase and refurbishment of rail facilities between Seaside and Castroville. The service is intended as an alternative for business and tourist travel between the Peninsula and the Bay Area. The extended line could additionally serve as a section of a rail line tracing the Monterey Bay crescent from the Peninsula to Santa Cruz with stops at a new Seaside/Marina station, the former Fort Ord Base, a new Castroville station, and other points of interest. Such service would have great potential to entice drivers from reliance on Route 1 for regional trips.

Freight Rail - Union Pacific Railroad provides freight service through Monterey County over the main line connecting Los Angeles and the Bay Area. Pajaro is a center for food processing in Monterey County and the community has expressed interest in developing the Pajaro Station as a rail center for freight in addition to passenger rail. Within the County a small amount of local freight -- principally food products and construction materials -- is still moved between Pajaro and Watsonville Junction. Packers that once moved fresh and frozen vegetables out of the Salinas Valley by rail now use trucks almost exclusively. They do not foresee returning to rail. Therefore, freight rail is unlikely to accommodate increasing demand for travel on Route 1.

Urban and Inter-city Transit - Monterey-Salinas Transit (MST) provides the urban transit service within and among the Cities of Monterey, Pacific Grove, and Carmel and other urban communities on the Greater Monterey Peninsula. MST also provides the inter-city service for travel from the Peninsula east to Salinas and north to Watsonville in Santa Cruz County. In Watsonville, transit riders can transfer to Santa Cruz County's Metropolitan Transit District for access to destinations in north Santa Cruz County.

MST service has been coordinated with rail service as well. MST will play an important role in the return of inter-city train service between the Monterey Peninsula and the Bay Area. Prior to the extension of rail service to Monterey, MST will carry passengers to a new rail station in Castroville.

MST also provides service on a seasonal basis between the Monterey Peninsula locations and Big Sur Coast destinations: Pt. Lobos State Park, Point Sur Light Station, Andrew Molera State Park, Big Sur River Inn, Pfeiffer Big Sur State Park and Nepenthe. While ridership on this line has never represented a significant portion of trips to the Big Sur Coast, the service allows travelers such as students, the elderly, foreign travelers, and others without access to automobiles to experience the All American Road. With two mid-day departures from Monterey and operation limited to the months of June, July and August, the service is not targeted for tourist industry employees. Upon request, southbound buses will stop near Bixby Creek Bridge for viewing/photographing the landmark.

As traffic has increased along Route 1, so has MST ridership. This service accommodates not only the transit dependent, but also local and regional commuters for whom MST's coverage and schedules offer an attractive alternative to solo driving. Of choice and necessity, transit will play an important role in accommodating future demand and complementing new passenger rail services.

Greyhound Bus Lines offer scheduled inter-city service along the US 101 corridor, but not on Route 1.

Non-motorized Transportation – The General Bikeways Plan for Monterey County includes goals for enhancing the bicycle circulation system for both commuters and recreational riders. The Plan identifies commuter routes for bicyclists in the Greater Monterey Peninsula area. The Big Sur Coast and the Monterey Peninsula are well known for recreational riding opportunities enjoyed by residents and tourists alike.

Bicycling to job sites in the Monterey Peninsula area or to educational centers on former Fort Ord land will be an attractive alternative for some. A greater, but still small reduction in peak hour demand along Route 1 may be realized with cycling as a component of inter-modal trips with transit or train travel. Avid and occasional recreational cyclists, locals as well as tourists, enjoy cycling on the scenic, relatively flat trails in the Monterey Bay area. To the extent that cycling and walking are feasible for short trips and a continuous trail system is accessible without an intervening automobile trip, highway travel can be reduced, but probably not significantly.

Several recreational trails exist or are in the planning stage in the vicinity of Monterey Bay. The Monterey Peninsula Regional Parks District is the lead agency for a transportation enhancement project proposing to construct a bicycle/pedestrian trail through Hatton Canyon.

This facility would roughly parallel to the east of sub-segment 14A of Route 1. The Monterey Bay Recreational trail is a Class I facility that extends from Pacific Grove to north of Marina. Three other recreational trails of regional or greater significance are only partially complete in Monterey County pending negotiation and adoption of precise alignments; acquisition of easements; and construction and signing of the facilities. While the majority of the Pacific Coast Bike Route follows Route 1, Caltrans has worked with local governments to locate suitable alternatives for some stretches. The Pacific Coast Bike Route follows local roads in three sections of Segment 15, including the section from Moss Landing to the Monterey/Santa Cruz County line. Where feasible, highway projects should incorporate features to enhance bicycle mobility and address future needs for bicycle and pedestrian access.

The Monterey Bay Sanctuary Scenic Trail, a portion of the CCT, is envisioned as a multi-use recreational and interpretive pathway linking existing trail segments into a continuous coastal trail around Monterey Bay. The existing segments run from Pt. Pinos in Pacific Grove to Marina and from Aptos to Natural Bridges State Beach in Santa Cruz County, leaving a gap along part of sub-segment 14C and Segment 15 in Monterey County as well as Segment 16 and sub-segment 17A in Santa Cruz County. AMBAG is the lead agency in the completion of this trail.

Transportation Demand Management – In 1998, TAMC accepted the final report on its Trip Reduction Program, an effort that included outreach to employers and employees throughout the County. This outreach included information about alternative travel modes and TDM as well as extensive data gathering regarding receptivity to various trip reduction alternatives. While employees were most responsive to economic incentives such as priced parking, free or subsidized passes for express transit, and employer-sponsored vanpools, these were least attractive to employers. Teleworking is not practical for workers in the tourist, retail sales, and agricultural industries that are large segments of the Peninsula economy. Some of these workers, however, do travel during off-peak hours. Flexible hours and telecommuting are more likely to be offered at the out-of-area high-tech job sites to which a growing number of Monterey County residents commute. TDM has almost no potential to relieve non-commute-related congestion arising from seasonal tourism or other interregional traffic.

TAMC and MST have proposed park and ride facilities in Segment 14 (Carmel and the Fort Ord reuse area). These facilities will support the use of transit and rail as well as car pools and van pools. Caltrans will support locally-initiated TDM efforts by assisting with facilities such as park and ride facilities and HOV lanes. However, more immediate traffic improvements may be realized through operational improvements, including traffic control measures (TCMs).

Intelligent Transportation Systems (ITS) – ITS will play a critical role in managing operations on State Route 1 in Monterey County. ITS projects have been implemented in the County and additional projects have a high priority. When the Central Coast ITS Strategic Plan is fully implemented, the following elements will be available on Route 1 in Monterey County:

- Smart call boxes from San Luis Obispo/Monterey County line to Monterey/Santa Cruz County line
- Traffic surveillance stations (loop detectors) through Segments 14 (freeway portion) and 15
- CCTV camera installation and freeway control ramp metering between SR 68 West and Reservation Road

- Changeable message sign (CMS) and/or highway advisory radio (HAR) near junction with SR 68 West
- Road Weather Information System with environmental sensors and information dissemination in Big Sur area
- Transit Management including vehicle tracking, schedule management fare collection, video surveillance and signal priority for transit for MST system

Land Use Planning - In recent years, significant development has occurred along Monterey County's Route 1 corridor, especially in the coastal cities north of Monterey and the former Fort Ord site. The populations of these areas are projected to increase more than 80 percent between the year 2000 and 2020. TAMC's Regional Transportation Plan (RTP) recognizes that the expansion of undefined city edges in the form of large-scale automobile dependent subdivisions and shopping malls have worsened traffic in the county. The RTP identifies a number of planning principles that would result in a more transit and pedestrian friendly land use pattern to complement TAMC's efforts to improve transit, rail, and bicycling facilities. Local decision-makers should also support the design of new recreational and visitor-oriented development that encourages visitor use of alternative modes of transportation.

Transportation Concept and Strategies

The current and ever-worsening levels of congestion along Route 1 from Carmel to central Santa Cruz are fueled and sustained by regional and interregional economic growth and changing demographics. Satisfactory resolution of these issues will require planning beyond the scope of a single route TCR or subsequent corridor study. A comprehensive traffic analysis of the stressed network of state and local transportation facilities that carries traffic between US 101 and Route 1 and along the Route 1 corridor should be conducted as a preliminary step towards planning for regional transportation improvements.

In Monterey County, all of Route 1 north of the Carmel River will require widening and/or operational improvements and reliance on alternative modes of transportation to achieve LOS D in the year 2025. Even with completion of the freeway system and addition of travel lanes in northern Monterey County, future area growth will require bold supplemental measures to maintain acceptable mobility. Only with investment in the multi-modal system in concert with effective local land use planning is it likely that acceptable levels of service will be maintained for Segments 14 and 15 through the year 2025.

Segments 12 and 13 - In Segments 12 and 13, geology, topography, and a desire to maintain the rustic setting are major considerations. With the exception of the growing, but still relatively small number of residents who commute travel north daily from Segment 13, much of the traffic on these segments is recreational and somewhat discretionary. Traffic volumes could be self-regulated to some extent if the quality of the travel experience declines. The transportation concept for both segments is LOS D or better. The following improvements should be made where feasible:

- Widen travel lanes and shoulders to a uniform 12 and four feet, respectively. *(Four-foot shoulders are less than standard and would require a design exception.)*
- Consolidate driveways where possible and minimize access points.
- Locate turn-outs and pull-outs to facilitate operations and enhance travelers' experience of the corridor.

- Provide ITS elements such as CMS and HAR to alert motorists of weather and road conditions along the highway.
- Support development of the California Coastal Trail (CCT) with a focused process for public participation, planning, programming, design, construction, and maintenance; develop criteria for integrating the trail into capital improvements; accommodate the trail in the highway right-of-way as circumstances require.
- Encourage vanpools and transit extensions for Big Sur commuters.

Additional actions identified in the CHMP address maintenance, slope stabilization, aesthetics, and other environmental concerns.

Segment 14 – According to the 2005 Monterey County Regional Transportation Plan, most of Segment 14 currently operates at LOS E or F during peak hours. Level of service will decline in each sub-segment by the year 2025 as both volume-to-capacity ratios and vehicle hours of delay rise. In order to maintain or attain acceptable operations at LOS D for the significantly greater demand projected for the year 2025, a combination of widening, operational improvements, and enhanced alternatives to travel by single occupant vehicles will be required. ITS elements such as loop detection and ramp metering will be a major component of operational improvements.

Recommended strategies for this segment include:

- Convert conventional highway sections to expressway where possible.
- Convert expressway to freeway where possible.
- Improve channelization for turning at intersections.
- Add auxiliary lanes and improve freeway interchanges to improve operations.
- Implement ITS components to improve operations.
- Ensure that any interim improvements to the facility will accommodate the concept facility.
- Support local land use decisions that will accommodate the concept and ultimate facility.
- Develop continuous Class I multi-use trail system west of Route 1 to minimize conflicts and need for highway travel to reach trailheads.
- Enhance shuttle/transit service for motels, restaurants, shopping, and beach area destinations.
- Synchronize signals on sub-segment 14A to maintain traffic flow.
- Install CMS to advise of delays ahead.
- Provide for safe access to coastal activities with signage, well-marked highway exits, and a system of frontage roads and connecting recreational trails where possible.
- Reduce demand by implementing improvements to transit and passenger rail.
- Minimize conflicts with highway operations in siting and developing public access to coastal and recreational areas from Route 1.
- Strive for advance agreements and early design of access and circulation for areas of future coastal access.
- Encourage local governments to provide frontage roads and parallel routes when development occurs or other opportunities arise.
- Continue to explore opportunities to develop passenger rail between the Monterey Peninsula and Pajaro for commuter and intercity travel and, in a multi-agency, multi-jurisdictional context, opportunities to develop light rail, personal rapid transit system (PRT), ferry service, and other alternatives for environmentally sensitive travel among activity centers.

Segment 15 – The transportation concept for Segment 15 is peak hour LOS D, or better. In order to achieve acceptable operations for the significantly greater demand projected for the year 2025, a combination of widening to four lanes, operational improvements, and enhanced alternatives to travel by single occupant vehicles will be required. ITS elements will be a major component of operational improvements.

Recommended strategies for this segment in advance of widening include:

- Convert conventional highway sections to expressway where possible.
- Minimize and consolidate driveways.
- Provide standard width shoulders.
- Provide pullouts, channelization, and/or passing lanes as interim improvements to improve traffic flow.
- Implement ITS components to improve operations.
- Ensure that any interim improvements to the facility will accommodate the concept facility.
- Support local land use decisions that will accommodate the concept facility.
- Provide for safe access to coastal activities with signage, well marked highway exits, and a system of frontage roads and connecting recreational trails where possible.
- Plan for opportunities to enhance safe public access to coastal and recreational areas while minimizing conflicts with highway operations.
- Strive for advance agreements and early design of access and circulation for areas of future coastal access.
- Support continuous Class I multi-use trail system west of Route 1, where feasible, to minimize conflicts and need for highway travel to reach trailheads.
- Support enhanced shuttle/transit service for motels, restaurants, shopping, and beach area destinations.
- Support improvements to transit and passenger rail that will reduce demand for highway travel.
- Encourage local governments to provide frontage roads and parallel routes when development occurs or other opportunities arise.
- Support intermodal freight facilities at Pajaro Station.
- Conduct a comprehensive traffic analysis of the stressed network of state and local transportation facilities that carry traffic between US 101 and Route 1 and along Route 1 as a preliminary step towards planning for regional transportation improvements. (See *Additional considerations with respect to improving the Moss Landing corridor*, below.)

Additional considerations with respect to widening Segment 15

The two-lane Moss Landing corridor Segment 15 has been the focus of concern for a number of decades. While the Monterey County Local Coastal Program is the standard of review for future widening, the California Coastal Commission has classified the Moss Landing Corridor as a rural coastal facility. The California Coastal Act reflects legislative intent that as a rural coastal facility this corridor will remain a scenic two-lane road. The two-lane character is a classic part of the experience of travelling along the Big Sur Coast (Segments 11, 12, and 13). However, the seven miles of two-lane conventional highway in Segment 15 differs from the Big Sur segments in several respects:

1. *The Moss Landing two-lane segment carries heavy regional and interregional traffic between major urban centers: the Monterey Peninsula and the City of Santa Cruz.*
2. *The two-lane segment links four-lane freeway sections.*

3. *Traffic on the two-lane section is fed at nearby intersections with four state highways: SR 156 and SR 183 at the south end and SR 129 and SR 152 to the north.*
4. *Traffic from increasing development along several local roads enters the two-lane Route 1 segment at at-grade intersections.*
5. *The facility operates a peak LOS F and has a collision history above the state average for this type of facility.*
6. *The ever-increasing commuter traffic on the Moss Landing segment is steadily diminishing the facility's rural, scenic character.*

Additional considerations with respect to improving the corridor without widening

Pursuit of alternatives that would remove a major component of the non-recreational traffic from Segment 15 appear to be limited by cost, jurisdictional complexities, existing and planned development patterns, and a context of sensitive environmental resources and productive agricultural lands. However, given a high priority, such alternatives could be explored in a comprehensive traffic analysis and transportation improvement study. Alternatives for improving regional transportation could include measures that would reduce urban-type and interregional traffic on Segment 15. Such measures include a parallel highway facility to the east, realignment of east-west routes away from the two-lane portion of Route 1, a light rail or personal rapid transit system (PRT) around the bay, and/or planned investment in the Caltrain system.

Potential alignments for any viable alternative to the current alignment through Moss Landing are constrained by geography and the presence of environmental resources. The facility would:

1. *Lie east of the Elkhorn Slough to avoid environmental resources and minimize impacts.*
2. *Lie west of US 101 to minimize out of direction travel for Route 1 traffic between the Monterey Peninsula and Santa Cruz and to avoid interactions with the Prunedale section of that route.*

Appendix B-3 includes maps, sub-segment data sheets, and summaries of the issues, concepts, and recommended improvements described above for Route 1 in Monterey County.

SANTA CRUZ COUNTY

Area and Population: Description and Trends

Santa Cruz County is the northernmost county in District 5. (See maps in Appendix B-4.) The County is by far the smallest in land area in the District, and the second smallest in the State. With a population of 259,000 in the year 2000, Santa Cruz County ranks third in the District and 37th in the State.

The urban population of Santa Cruz County is concentrated in three areas, two of which are accessed from Route 1 and the third from SR 17. The City of Watsonville located on Route 1 near the south end of the County, is the fastest-growing city. State Routes, 1, 152, and 129 converge in Watsonville, which lies in the heart of a fertile agricultural area. To the north along Route 1, the coastal area includes the communities of Rio Del Mar, Aptos, Soquel, and Live Oak and the Cities of Capitola and Santa Cruz. Santa Cruz is the county seat and home of the University of California, Santa Cruz (UCSC). The corridor from Watsonville to SR 17 includes the most heavily traveled stretch of four-lane highway in all of District 5. Congestion on Route 1 south of SR 17 has been a major topic for civic discussion. State Routes 17 and 9 both originate at Route 1 in Santa Cruz. SR 17 follows creek drainages and natural passes through the Santa Cruz Mountains to the community of Pasatiempo, the City of Scotts Valley, and on to Santa Clara County, site of the Silicon Valley phenomenon that has fueled much of the county's growth in recent decades.

The communities of Paradise Park, Mt. Herman, Glen Harbor and Ben Lomond are located along Route 9, which follows the San Lorenzo River northwest from Route 1. Route 1 itself continues north to the Santa Cruz/San Mateo County line where it leaves District 5, passing the community of Davenport on the way.

All locations along the Route 1 coastal corridor in Santa Cruz County enjoy a gentle Mediterranean climate. However, the shelter afforded by the Monterey Bay and the network of access routes to inland areas has favored the Bay area for both habitation and intense farming. The Spanish established a mission along the south-facing arc of the Bay in 1791 and the settlements that later became the Cities of Santa Cruz and Capitola were founded soon after. The City of Watsonville is a historic agricultural center located just inland, near the mid-point of the coastal arc of the Bay. The city's favorable location is attracting major development projects. By contrast, the coastal lands north of Santa Cruz are more exposed to the elements and more isolated. The small community of Davenport is the primary settlement along Route 1 between Santa Cruz and the Santa Cruz/San Mateo County line. The coastal terraces along the northern portion of Santa Cruz Route 1 support agricultural crops. However, extensive areas remain in chaparral.

Agriculture, tourism, education, and government are major sectors of the Santa Cruz County economy. A number of world-class marine research facilities are located in the county – a fortunate result of the bayside location and proximity to top-rank institutions of higher learning. The County has demonstrated a long history of support for conservation and environmental protection as evidenced by an early adoption of urban limit lines, public acquisition of land for greenbelts, and high levels of transit and bicycle use. Some members of the community have expressed opposition to widening Route 1, as well, citing environmental and community values.

Santa Cruz County and its transportation system have been greatly affected by the economy of Santa Clara County, where creation of technology-based jobs has long outstripped housing production. The Santa Cruz County Regional Transportation Commission (SCCRTC) estimates that more than 20,000 county residents commute to Silicon Valley job sites on a daily basis. Most of these commuters use Route 1 and SR 17. Recent area growth, in particular growth in the commuter population has increased roadway congestion to unacceptable levels. Greater support now exists for widening Route 1 from Aptos to SR 17 in Santa Cruz.

According to census figures adjusted by the State's Department of Finance (DOF), the population of Santa Cruz County was 259,300 in mid-year 2000. The DOF projects a 10 percent increase in population to 286,000 in the year 2020. Over the past decade, while the county's population increased 11 percent overall, the cities of Watsonville and Scotts Valley both grew more than 30 percent, together accounting for more than 60 percent of the county's growth.

Operating Conditions and Segment Summaries

Route 1 in Santa Cruz County consists of four segments. Two of these have been divided into sub-segments. Traffic conditions of each of the segments are described below. Maps, segment summaries, and additional data for the seven sub-segments can be found in Appendix B-4.

Segment 16 (P.M. R0.00/R7.66) – Segment 16 begins at the south end of the Pajaro River Bridge and continues through the City of Watsonville to the interchange with Larkin Valley Road. This segment is a four- and five-lane freeway.

Two state highways originate from Segment 16. SR 129 leaves Route 1 less than a mile north of the Pajaro River (county line); SR 152 originates approximately two miles north of SR 129 in the City of Watsonville. Both of these routes carry traffic between Route 1 and US 101. Larkin Valley Road originates at Airport Boulevard in Watsonville and runs parallel and east of Route 1 before joining it at the end of the segment. Segment 16 accommodates commuters bound for job sites in Monterey, Santa Cruz, and Santa Clara Counties and beyond. This stretch is also used by tourists, area residents, and local and interregional goods movers.

In 2002 Segment 16 carried 46,000 ADT while operating at LOS C. Service level is expected to fall to LOS D by 2025 when an ADT of 56,000 is projected.

Segment 17 (P.M. R7.66/16.82) – Segment 17 extends from the Larkin Valley Road interchange to the SR1/17 interchange in the City of Santa Cruz. Traffic volumes rise steadily from south to north through this heavily traveled segment. The components of traffic are similar to Segment 16, with a higher proportion of trips generated in the City of Santa Cruz.

Sub-segment 17A is a four-lane freeway ending at State Park Drive. In 2002 this sub-segment carried 77,000 operating at LOS E. Traffic is projected to rise to 83,000 and service to fall to LOS F by the year 2025. Initial studies of congestion on Segment 17 were focused on sub-segments 17B and C (State Park Drive to SR 17). After a Project Study Report initiated in the year 2000 found that severe peak period congestion would result if lane widening terminated at State Park Drive, sub-segment 17A was incorporated into the project area for a widening project.

Sub-segment 17B extends from State Park Drive to Morrissey Boulevard. This four-lane freeway carried 103,300 ADT at LOS F in 2002. Theoretically traffic could rise to 121,000 in 2025 causing the facility to operate at a lower level of LOS F.

The highest traffic volume on Segment 17 occurs on sub-segment 17C where 2002 volume was 109,400. Volume could rise to 137,000 in 2025. Level of service was "F" in 2002 and would perform even more poorly in the year 2025. At present this sub-segment is a four-lane freeway. Segment 17 ends at a complex interchange with SR 17 and Segment 18 of Route 1. One element of the interchange is a looped ramp called the "fishhook", which carries northbound traffic from Segment 17 on to Segment 18 at a lower grade. Topographic and environmental concerns and the high cost of reconfiguring this interchange for safety, improved operations, and additional capacity have challenged Caltrans and the community for years.

Operational improvements including auxiliary lanes and ramp metering may be pursued as a means to improve traffic flow on Segment 17 in advance of widening. Auxiliary lanes have been constructed between the Bay/Porter and 41st Avenue interchanges. A project to construct auxiliary lanes between the Soquel and Morrissey interchanges awaits full funding.

Segment 18 (P.M. 16.82/20.61) – Segment 18 extends from the SR 1/SR 17 interchange to the north urban limit of the City of Santa Cruz near the UCSC Marine Lab. Beyond the fishhook interchange, sub-segment 18A continues as a four-lane freeway to the San Lorenzo River Bridge, where it becomes a conventional highway. A complex, frequently congested, at-grade intersection with SR 9 (north) and River Street (south) lies less than one-tenth mile from the end of the freeway; the Pacific Railway tracks cross the highway approximately one-tenth mile beyond the intersection. Sub-segment 18A ends at the intersection of Chestnut and Mission Streets, where Route 1 veers right along the Mission Street alignment. Sub-segment 18A carries heavy traffic bound for the UC Santa Cruz campus, regional traffic, and local traffic between downtown Santa Cruz and residential areas to the west.

Sub-segment 18A carried 55,000 ADT in 2002, with volume expected to rise to 60,000 by the year 2025. Level of service on sub-segment 18A is controlled by traffic flow through two major signalized intersections: SR 9 and Chestnut/Mission. A project study report (PSR) for a project to reconstruct the SR 1/SR 9 intersection indicated the intersection operated below LOS C in the late 1990s, with heavy congestion and back-ups on nearby streets already apparent. The PSR stated that operations would deteriorate to LOS F under the do nothing alternative. More recent analyses provided by the City Of Santa Cruz indicates the intersection currently operates at LOS D and confirms that LOS F will be reached with buildout of approved development in five to eight years.

Signalized Intersection	2004	2009-12
Mission/Chestnut	D	F

Sub-segment 18B continues as a four-lane conventional highway from the Chestnut/Mission Streets intersection. The highway follows Mission Street to Swift Street near the western edge of the City. At Swift Street, Mission Street leaves Route 1, which continues north as the Cabrillo

Highway, a two-lane expressway. Sub-segment 18B continues another mile to the Santa Cruz urban limit at P.M. 20.61.

Sub-segment 18B is the main street through west Santa Cruz. It is lined with urban uses including numerous retail operations with individual driveway access to the state highway. Residential areas lie north and south of Route 1. Seven signalized intersections control flow along the sub-segment. Three of the intersecting local roads, Highland/High Street, Bay Street, and Western Drive provide access to the UC campus. Traffic volume averaged 18,800 operating at LOS E in 2002. Level of service will fall to F by 2025 when average volumes of 26,000 are anticipated.

The City of Santa Cruz also provided analyses of current and anticipated operations of the signalized intersections on sub-segment 18B. Three of the seven will operate below LOS D within five to eight years.

Signalized Intersection	2004	2009-12
Mission/King	F	E
Mission/Walnut	B	C
Mission/Laurel	C	E
Mission/Bay	D	F
Mission/Almar/Younglove	B	C
Mission/Swift	B	C
Route 1/Western	B	C

The City proposes to study the intersections of Mission Street (Route 1) with Chestnut Street in sub-segment 18A and Bay Street in sub-segment 18B to evaluate potential improvements and their costs. The City's Circulation Element referenced LOS standards of "F" for the Mission/Chestnut intersection and "D" for Mission/Bay, calling for deficiency plans when operations reach LOS E or below. Such deficiency plans would prioritize alternative transportation improvements and transportation system management measures, relying on road widening/expansion as a last resort.

Segment 19 (P.M. 20.61/37.45) – This 17-mile long segment extends from the north limit of the City of Santa Cruz to the Santa Cruz/San Mateo County line, which is also the District's boundary with District 4. Segment 19 is a two-lane facility with both expressway and conventional stretches. Mile-long passing lanes have been provided in both directions in the vicinity of P.M. 23 to 24. The Santa Cruz Branch rail line which runs parallel to Route 1 north from Pajaro terminates at a cement plant just inland from the community of Davenport, located at approximately P.M. 28 in Segment 19. While scattered agricultural fields and beach access areas are found along this segment, uncultivated open space predominates.

In 2002 average traffic volume on Segment 19 was 8,000 and the facility operated at LOS D. By the year 2025 ADT of 12,000 is anticipated, with LOS falling to E.

Linkages - State Routes 129, 152, 17 and 9 all connect with Route 1 (south to north) in Santa Cruz County.

Alternatives to Reduce Demand or Improve Operations

Passenger Rail - Passenger rail is not currently available along the Route 1 corridor in Santa Cruz County. However, the Santa Cruz Branch line between the Watsonville junction in Pajaro and Davenport still accommodates freight service. Although specific plans to develop passenger rail service have not been developed, the Santa Cruz County Regional Transportation Plan includes policies to preserve this and other railroad rights-of way for future rail or transit use.

Prior to reestablishment of passenger rail service to Santa Cruz on the Union Pacific tracks, additional passenger services will be available at Pajaro Station, just inside Monterey County. First, will be the proposed Coast Daylight service; second, Caltrain service linking Salinas with Santa Clara County, and third, recreational service linking the Monterey Peninsula with San Francisco. Each of these services could benefit residents of Santa Cruz County. However, while Monterey County residents will be able to travel to Pajaro Station by train, Santa Cruz County residents would travel out-of-direction by highway and surface streets for inter-modal transfers at Pajaro. Anticipated reductions in highway trips would be greater on highways in Monterey County than for Route 1 in Santa Cruz County.

Proposals to develop a tourist train or trolley service on the existing tracks between Watsonville and Santa Cruz have not been fully evaluated.

Freight Rail – The Union Pacific Railroad hauls freight three times a week between Pajaro and a sand and gravel operation/cement plant in Davenport. This service is a valuable alternative to moving this material by truck on the highway. On occasion freight is also moved by rail on the Santa Cruz/Felton Branch rail line.

Pajaro does not currently have container intermodal facilities. The feasibility of potential investments in goods movement at Pajaro will be studied in the future.

Urban and Inter-city Transit – The Santa Cruz County Metropolitan Transit (Metro) provides bus transit services throughout the County (north as far as Waddell Creek on Route 1) and "over the hill" on the Highway 17 Express Bus service into Santa Clara County.

The Highway 17 Express Bus is a critical element in accommodating and managing travel demand on Route 1 as well as SR 17. Many trips that originate along the Route 1 corridor end at destinations in the San Francisco Bay Area. The Highway 17 Express is an alternative for the trip leg into San Jose, allowing the entire trip to be accomplished using transit or transit/rail. The service is continually evaluated and enhanced with new services such as weekend service, services to the reverse commuter, route extension, and improved intermodal facilities. The recent combination of the Highway 17 Express Bus and the Amtrak Connector Bus function has resulted in overall efficiencies and added utility for the service.

At the transit center in Watsonville, connections are available for trips into Monterey County via Monterey-Salinas Transit. Metro also contracts with Community Bridge's Lift Line Program for para-transit services to persons with physical limitations and operates the Summer Beach Shuttle. The latter addresses parking and congestion issues in beach areas and nearby local streets.

Santa Cruz County residents have historically shown strong support for transit services. Santa Cruz falls in the top quartile in a ranking of the nation's counties for local transit rides per capita. The County collects a half-cent sales tax for the exclusive benefit of transit. Commuter transit is supported by park and ride lots, some of which provide parking for bicycles as well as motor vehicles. The widening of Route 1 in Santa Cruz presents an opportunity to consider incorporating multimodal freeway bus stops with access to park and ride lots and bicycle facilities.

Efficient transit service is essential for mobility along the Route 1 corridor. Even with additional capacity on Route 1 in Santa Cruz County, expansion of Metro's transit services must be assumed in planning for acceptable future levels of operation for the facility.

Non-motorized Transportation – Santa Cruz County has an extensive network of bike lanes and facilities for the benefit of commuting workers and students as well as recreational cyclists. In Santa Cruz County, bicycling is a robust alternative to motorized travel. The entire Route 1 corridor from the Monterey County/Santa Cruz County line and Watsonville to downtown Santa Cruz can be traversed by bicycle via a continuous route consisting of Freedom Boulevard, Soquel Drive, Soquel Avenue, and Water Street. Both Bay Street and High Street provide bicycle access from downtown to the University campus. At least one other longer and more circuitous alternate route can be followed through the Watsonville-Santa Cruz corridor. A network of bike paths and lanes provides opportunities for residents of Aptos, Capitola and the City of Santa Cruz to negotiate this entire area by bicycle.

Bicycle routes cross Route 1 with most road crossings/interchanges along the Watsonville-Santa Cruz corridor. All highway projects that alter or widen these crossings are designed to accommodate safe and efficient use by bicyclists. Additionally, the SCCRTC has pursued grants and subsidies to encourage installation of bicycle racks and lockers to facilitate inter-modal travel.

Transportation Demand Management – The local community has long recognized that demand management is a critical element in the overall management of the County's transportation system. Commute Solutions, under the direction of the Santa Cruz County Regional Transportation Commission, Santa Cruz Area Transportation Management Association, and Pajaro Valley Transportation Management Association, provides TDM programs and services in Santa Cruz County. The most common TDM strategies are carpooling and vanpooling, which match or "pool" persons who travel to a common employment site or area. These ridesharing alternatives are cheaper than single-occupant vehicle (SOV) driving and faster and more direct than transit, with departure and arrival times often tailored to the pool of participants. Commute Solutions ridesharing signs are posted along Route 1 in Santa Cruz County. Commute Solutions supports other alternatives to solo driving including transit, bicycling, walking, and telecommuting.

Park and ride lots along Route 1 and SR 17 facilitate transit use and participation in carpools and vanpools. The Monterey Bay Unified Air Pollution Control District funds an Emergency Ride Home program that serves as an incentive/insurance policy for participants in TDM alternatives.

In Santa Cruz County, TDM will be an important adjunct to facility improvements such as widening and traffic control measures. Caltrans supports regional TDM efforts by assisting with facilities such as park and ride lots and HOV lanes.

Intelligent Transportation Systems (ITS) – Santa Cruz County, formerly part of heavily urbanized District 4, has the longest experience with Intelligent Transportation Systems and more ITS elements than any other county in District 5. District 4 installed ITS elements on Route 1 and SR 17 in the 1990s to help manage the inter-county traffic flow. District 4 continues to manage certain elements including closed circuit television cameras, changeable and extinguishable message signs, and highway advisory radio from its Transportation Management Center (TMC). Continued management by District 4 is warranted by the high volume traffic flows between Santa Cruz and Santa Clara Counties and the "24/7" operations of the District 4 TMC. District 5's TMC currently operates 12 hours a day, weekdays only.

Additional ITS elements will be installed on Route 1 in Santa Cruz County and management will transition to District 5 as comparable service can be provided and reliable and seamless coordination between the two TMCs assured. When the Central Coast ITS Strategic Plan is fully implemented, the following elements will be available on the route:

- System of smart call boxes along route from Monterey/Santa Cruz County line to Santa Cruz/San Mateo County line
- Closed circuit television cameras at approximately one mile spacing from Freedom Boulevard ramps to the SR 1/SR 17 interchange
- Ramp metering with mainline loop detectors at ramps from Freedom Boulevard to the SR 1/SR 17 interchange
- Surveillance station loops mid-way between ramp meter mainline loop detectors from Freedom Boulevard to the SR 1/SR 17 interchange
- Permanent Changeable Message Signs on route and nearby local roads
- Permanent Highway Advisory Radio at the SR 1/SR 17 interchange
- Road Weather Information System with environmental sensors and information dissemination
- Transit Management including vehicle tracking, schedule management, fare collection, and video surveillance

Freeway Service Patrol – A collision or disabled vehicle on Route 1 can quickly bring traffic to a crawl or a halt. While ITS can detect and convey information quickly, timely arrival of tow trucks to assist the CHP in clearing collisions and debris is another key element in managing traffic on the highway. The SCCRTC-sponsored Freeway Service Patrol (FSP) provides free service to motorists on Route 1 between State Park Drive and SR 9 (Segments 17B, 17C, and part of 18A) during morning and evening commute hours. The FSP has been found to be an effective component in minimizing incident-related congestion and maintaining traffic flow on the highway.

Land Use Planning – In Santa Cruz County unlike the three counties to the south, Route 1 is the primary transportation facility and the only continuous north-south route. While mountains and rivers make for difficult access to many parts of this small county, settlements linked by Route 1 have flourished on the coastal shelf. The pattern of future development and infill that occurs between the mountain ridges and the ocean in Santa Cruz County will impact the operation of this lifeline route.

The Santa Cruz County General Plan and the Local Coastal Plan (LCP) policies reflect the value of co-planning for land use and transportation to avoid the need for automobile trips, especially along the highway. Among the Transportation System Goals are the following:

- Limit the increase in auto usage to minimize adverse impacts.
- Increase transit ridership, carpooling, vanpooling, walking and bicycling.
- Integrate planning for transportation, land use, and air quality goals.
- Manage parking supply to provide reasonably convenient parking for groups such as shoppers and visitors who are most sensitive to the parking supply levels, while encouraging alternatives to solo commuting and limiting impacts on neighborhoods.
- Coordinate transportation improvements in area plans with the General Plan, LCP, and regional transportation plans.

The City of Santa Cruz has traditionally recognized the linkages between transportation, land use and neighborhood quality. Santa Cruz has demonstrated high levels of support for transit and bicycling. By contrast, the City of Watsonville is experiencing rapid growth. Traditionally an agricultural center for some of the state's most valuable specialized crops, its strategic location has attracted significant new urban development in recent years. The convergence of three state highways in Watsonville have made it a logical place to site housing for Silicon Valley workers. Watsonville residents have recognized the need for coordinated land use and transportation planning. Both Santa Cruz and Watsonville are in the process of updating their General Plans.

Transportation Concept and Strategies

The current and ever-worsening levels of congestion along Route 1 from Carmel to central Santa Cruz are fueled and sustained by regional and interregional economic growth and changing demographics. Satisfactory resolution of these issues will require planning beyond the scope of a single route TCR or subsequent corridor study. A comprehensive traffic analysis of the stressed network of state and local transportation facilities that carries traffic between US 101 and Route 1 and along Route 1 should be conducted as a preliminary step towards planning for regional transportation improvements.

To achieve LOS D on Route 1 Segments 16, 17, and 18 in the year 2025, added capacity, operational improvements, and investment in the multi-modal system in concert with effective local land use planning will be required.

Segment 16 - The transportation concept for Segment 16 is LOS D. The facility should be widened to six freeway lanes north of SR 129 in order to accommodate growth in the Watsonville area. South of SR 129, the concept remains a four-lane freeway. This provides a transition to the Moss Landing area in Monterey County (where Route 1 is currently developed as a two-lane conventional highway).

Recommended strategies for this segment include:

- Install selected additional ITS elements to improve operations.
- Improve interchange with Harkins Slough Road
- Ensure that any interim improvements to the facility will accommodate the concept facility.
- Support local land use decisions that will accommodate the concept facility.

- Continue to pursue efforts to increase transit use to reduce demand along the Watsonville-Santa Cruz corridor.
- Continue to support TDMs and intermodal facilities to reduce demand.
- Continue to explore opportunities to develop passenger rail between Santa Cruz and Pajaro and, with Monterey County transportation planners, opportunities to develop light rail, PRT, ferry service, and other alternatives for environmentally sensitive travel among activity centers on the Monterey Bay.
- Continue to explore opportunities to site and develop park and ride lots along corridor.
- Investigate feasibility of multi-modal freeway bus stops in conjunction with freeway widening.

Segment 17 – The transportation concept for Segment 17 is six-lane freeway. As currently conceived, the future six-lane facility would include an HOV lane in each direction. Prior to construction of additional freeway lanes, operational improvements will improve the flow of traffic along the Segment.

Transit, car-pooling, bicycling, and other measures to reduce the need to operate single occupant vehicles will continue to support the strategy for accommodating heavy traffic volumes on Segment 17. Recommended strategies for this segment include:

- Improve operations with auxiliary lanes and merge lanes at the SR 1/SR 17 Interchange.
- Ensure that any interim improvements to the facility will accommodate the concept facility.
- Support local land use decisions that will accommodate the concept facility.
- Install additional ITS components to improve operations.
- Enhance shuttle/transit service for motels, restaurants, shopping, and beach area destinations.
- Encourage development and use of parallel routes on the local roads system.
- Reduce demand by implementing improvements to transit and passenger rail.
- Continue to explore opportunities to site and develop park and ride lots along corridor.
- Continue to support TDMs and intermodal facilities to reduce demand.
- Minimize conflicts with highway operations in siting and developing public access to coastal and recreational areas from Route 1.
- Strive for advance agreements and early design of access and circulation for areas of future coastal access.
- Continue to explore opportunities to develop passenger rail between Santa Cruz and Pajaro and, with Monterey County transportation planners, opportunities to develop light rail, PRT, ferry service, and other alternatives for environmentally sensitive travel among activity centers on the Monterey Bay.
- Investigate feasibility of multi-modal freeway bus stops in conjunction with freeway widening.
- Support incident management program to increase safety, mobility, and reliability on Route 1.

Segment 18 – The concept for Sub-segment 18A will remain 4-lane freeway and conventional highway. Operational improvements and improvements to benefit pedestrians should be implemented for the four-lane portion of sub-segment 18B, after which widening to six conventional lanes may warrant evaluation.

Recommended strategies for this segment include:

- Install additional ITS components to improve operations.
- Improve intersection with SR 9 in sub-segment 18A.
- Evaluate intersection operations.
- Improve pedestrian access.
- Employ Context Sensitive Solutions processes to seek balance between local values, safety, and highway performance.
- Minimize and consolidate driveways.
- Continue to explore opportunities to site and develop park and ride lots along corridor
- Ensure that any interim improvements to the facility will accommodate the concept facility.
- Support local land use decisions that will accommodate the concept facility.
- Enhance shuttle/transit service for motels, restaurants, shopping, and beach area destinations.
- Continue to support TDMs and intermodal facilities to reduce demand.
- Synchronize signals on sub-segment 18B to maintain traffic flow.
- Improve local circulation to reduce congestion on Route 1.
- Evaluate adding capacity to the four-lane portion of sub-segment 18B.
- Support incident management program to increase safety, mobility, and reliability on Route 1.

Segment 19 – North of Santa Cruz, Route 1 will remain a two-lane conventional highway. Standard lane and shoulder widths should be provided and operational improvements such as turnouts and channelization for turns should be incorporated as needed. New access points should be minimized.

Recommended strategies for this segment include:

- Provide standard width travel lanes and shoulders.
- Construct turnouts for slow-moving vehicles.
- Provide channelization for turns.
- Minimize and consolidate driveways.
- Evaluate need for additional passing lanes for continuity with District 4.

ROUTE CONTINUITY

Beyond Segment 19, Route 1 continues as the coast highway into San Mateo County in District 4. The TCR for Route 1 in District 4 provides for continuity with the District 5 facility. Segment A in San Mateo County extends from the Santa Cruz/San Mateo County line to SR 84 (P.M. 18.19) This segment will remain a two-lane conventional highway with passing lanes at six locations.

Appendix B-4 includes maps, sub-segment data sheets, and summaries of the issues, concepts, and recommended improvements described above for Route 1 in Santa Cruz County.

PART THREE: FUTURE CONSIDERATIONS

The appropriate concepts for each segment of Route 1 were identified in Part Two, along with recommended actions for achieving the 2025 concepts. Part Three addresses additional and future considerations including programming responsibilities, environmental factors, and looking beyond the year 2025, concerns related to the Ultimate Transportation Corridor.

PROGRAMMING CONCEPT FACILITIES

Caltrans will take the lead in undertaking many of the actions to improve the highway including context sensitive solutions, often in partnership with the RTPA. Under SB 45, the RTPAs program highway improvements in the urbanized areas while Caltrans is responsible for the non-urbanized areas. Caltrans is also charged to plan and provide for interregional travel and goods movement. Caltrans programs and participates in funding projects according to state and regional priorities, type of project (e.g., capacity increasing or safety and operations improvements), location (e.g., metropolitan or rural area), and traffic characteristics (e.g., local, regional, interregional).

Although not site specific, this TCR supports efforts to implement Transportation Demand Management (TDM), enhanced transit, and intermodal facilities and services. While regional and local agencies would have primary responsibility for actions such as these, Caltrans supports inclusion of related provisions in Regional Transportation Plans and other regional and local planning and programming documents to maximize the utility and enjoyment of Route 1.

Appendix C identifies major programmed and planned projects along Route 1 that would be funded through the State Transportation Improvement Program (STIP).

ENVIRONMENTAL FACTORS

The purpose of this section is to provide a broad overview of the major environmental issues to be considered in planning for appropriate transportation facilities along the Route 1 corridor in Department District 5.

Scenic and Aesthetic Resources – The Route 1 corridor presents vistas of great contrast and beauty. These include spectacular ocean views, stretches of unpopulated open areas, and vast lightly populated agricultural areas. Most of Route 1 in District 5 has been officially recognized for scenic beauty under the State Scenic Highway Program; nearly 130 miles of the route in San Luis Obispo and Monterey Counties has been designated as an All American Road under the federal Scenic Byways Program. Most of Route 1 also lies within the Coastal Zone where stringent design criteria and permit requirements apply.

Visual character was a key factor in achieving All American Road designations for two contiguous stretches of Route 1 in District 5. The Highway 1 San Luis Obispo North Coast Corridor Enhancement Plan includes an improvement plan identifying specific projects to enhance the visual character of the Route 1 corridor from the north end of San Luis Obispo to the county line. The Coast Highway Management Plan includes Guidelines for Corridor Aesthetics that will apply along the Big Sur Coast All American Road.

Cultural Resources - The coastal areas through which Route 1 travels are considered very sensitive for archaeological and historical resources. Potential project-related impacts to archaeological, cultural and historical resources must be evaluated in compliance with the California Environmental Quality Act (CEQA) and, if federal funds are involved, the National Environmental Policy Act (NEPA) for a project proposing changes to Route 1. Environmental compliance could require a complete assessment of cultural resources through a detailed cultural resources study, further investigation of known cultural sites, as well as redesign of the project or mitigation of impacts.

Biological Resources - Potential project-related impacts to biological resources must be evaluated in accordance with CEQA and NEPA if a new project is to be undertaken in the Route 1 corridor.

The Route 1 corridor in all four counties passes through developed urbanized areas, cultivated agricultural areas, and natural open space including riparian areas. In San Luis Obispo, Monterey and Santa Cruz Counties, the corridor passes developed and undeveloped coastal areas as well.

Numerous special status plant or animal species identified in the California Natural Diversity Data Base (CNDDB) may be found within 5,000 meters of the centerline of the Route 1 right-of-way in District 5. The CNDDB information does not represent all biological resource-related constraints within a given corridor. For example, resources within flood plains and drainages are protected by federal and state regulations. All drainages within the Coastal Zone are protected as sensitive coastal resources by the California Coastal Act due to the presence of wetlands and riparian habitat and associated species of concern.

A complete assessment of environmental constraints can only be determined through detailed environmental studies, and depending on its precise location, a new project on Route 1 in any of the four counties may require consultation and/or permits from the Army Corps of Engineers, Fish and Wildlife Service, National Marine Fisheries Service, Monterey Bay National Marine Sanctuary, Environmental Protection Agency, California Department of Fish and Game, California Regional Water Quality Control Board, California Coastal Commission and/or the County (or City) Planning Department.

Air Quality – Any new non-exempt project in the Route 1 corridor will be evaluated for air quality impacts according to regional attainment of air quality standards. The four Route 1 counties in District 5 lie in two different air basins. Santa Barbara and San Luis Obispo Counties are in the South Central Coast Air Basin (SCCAB). The Santa Barbara County Air Pollution Control District and the San Luis Obispo County Air Pollution Control District regulate air quality in these two counties. Monterey and Santa Cruz Counties lie in the North Central Coast Air Basin (NCCAB) where the Monterey Bay Unified Air Pollution Control District has jurisdiction over air quality.

Currently, under the California Clean Air Act (CCAA), the NCCAB is designated a Moderate Non-Attainment area for ozone. Also under the CCAA, the NCCAB has been designated non-attainment for inhalable particulates (also known as particulate matter smaller than 10 microns in diameter, or PM10). The NCCAB has been designated either unclassified or in attainment of all other state and federal ambient air quality standards for criteria pollutants

As of June 2005, under the federal CAA all of District 5 was reclassified to attainment of all federal air quality standards.

Geological Constraints – Slope stability is a major issue along several segments of Route 1, especially Segment 1 south of Lompoc and Segments 11-13 along the Big Sur Coast. These segments are in mountainous areas – the Santa Ynez Montains in Santa Barbara County and the Coastal Range of the Santa Lucia Mountains in San Luis Obispo and Monterey Counties – where rockslides are not uncommon.

Along Segment 1, the toes of numerous landslides are in the stream bank of El Jaro Creek, which courses adjacent to the roadway. Winter rains provide an additional element of risk to the roadway. When creek levels are high, the toes of landslides are eroded, freeing earth and rocks to translate down slope and to encroach on the roadway.

Factors influencing slope stability along Segments 11-13 are described in detail in the Coast Highway Management Plan: Guidelines for landslide Management and Storm Damage Response.

Water Quality – Route 1 in District 5 is located within the Central Coast Regional Water Quality Control Board's (RWQCB) jurisdiction. The design and construction of road projects must adhere to the requirements found in Caltrans' National Pollutant Discharge Elimination System (NPDES) permit (Order No. 99-06-DWQ, No. CAS000003), Storm Water Management Plan (SWMP), Project Planning and Design Guide, Construction Site Best Management Practices Manual, and Standard Specifications.

Noise – Any proposal that will change either the horizontal or vertical alignment or increase the number of through traffic lanes on portions of Route 1 will require analysis of potential noise impacts. If it is determined through the noise analysis that significant impacts may result, mitigation measures may be required. Typical noise mitigation measures include earthen berms and sound walls. Sensitive receptors such as residences, schools and hospitals must be present for long-term, highway-related noise impacts to occur.

Hazardous Materials – A hazardous material is any substance, including waste, which may result in adverse effects to health, safety, and the environment. It is Caltrans policy to manage a hazardous materials program to protect its activities, employees, the public, and the environment from the injurious effects of hazardous materials and waste. The planning phase of any proposed project on Route 1 will include an assessment of the potential to encounter hazardous materials. If found, it is Caltrans policy to avoid or fully mitigate the impacts of these materials prior to construction.

ULTIMATE TRANSPORTATION CORRIDOR

The ultimate transportation corridor (UTC) is viewed as the maximum development of a state highway corridor, including parallel facilities, beyond 2025, the 20-year planning horizon. The UTC is used to identify potential widenings, realignments, future facilities, and rights-of-way required to complete the development of each corridor. This information is critical for working with local and regional land use and transportation planning agencies to address right-of-way preservation and dedication techniques. The determination of the UTC does not consider funding as a constraint.

Neither the 1986 Route Concept Report (RCR) for Route 1 in Santa Barbara, San Luis Obispo, and Monterey Counties, nor the 1987 RCR for Route 1 in Santa Cruz County (then in District 4), identified a UTC for the route. Today, an ultimate concept can be proposed for many segments. However, as the analysis in Part Two indicates, for several segments additional studies should be undertaken prior to specifying the ultimate facility type and alignment.

Long-standing local and California coastal policies specify that Route 1 will remain a rural two-lane facility between Cayucos in San Luis Obispo County and Carmel in Monterey County (Segments 9C-13), in northern Monterey County (Segment 15), and north of the City of Santa Cruz in Santa Cruz County (Segment 19). In some of these segments, passing lanes and turnouts may be constructed to improve operations. In the following areas, additional studies should be undertaken to reach agreement regarding the appropriate facility type in the context of a larger network of roadways:

1. SB Segment 2 – City of Lompoc
2. SLO Segment 5 – Nipomo Mesa area
3. SLO Segments 7 and 8 (US 101 to South Bay Boulevard in Morro Bay)
4. MON Segments 14 and 15 (Carmel River to Monterey/Santa Cruz County line)
5. SCr Segments 16 and 17 (Monterey/Santa Cruz County line to SR1/SR 17 interchange)
6. SCr Sub-segment 18B (Mission Street in Santa Cruz)

Beyond the concept year, the rural coastal segments will remain two-lane facilities. Segments in the City of San Luis Obispo, along the Monterey Bay, and in the City of Santa Cruz will likely require urban-type facilities of at least six lanes. Right-of-way should be reserved to develop the remaining segments of Route 1 as a four-lane facility. It is likely that between the interchanges with SR 68 East and SR 156 (Sub-segment 14C), an eight-lane freeway will be required beyond the 2025 concept year.

CONCLUSION

In preparing this report, Caltrans has used traffic forecasts to determine the future Levels of Service on Route 1. Based on these forecasts and a qualitative analysis of alternatives, Caltrans identified concept levels of service or recommended additional studies for each highway segment. The TCR also recommends actions for attaining or maintaining those acceptable levels. In several areas, corridor or area studies should be performed to determine the appropriate level of development for the Route and adjacent routes as well as facilities for alternative modes that will complement use of the facility. Land use patterns and development adjacent to the state facility have a substantial impact on LOS. Most alternative transportation modes and land use changes are in the hands of the local agencies to implement and monitor. District 5 will continue to work with regional and local agencies in planning and programming transportation projects to meet demand for safe and efficient travel along the Route 1 corridor. Additionally, in the interest of preserving the safety and operational integrity of the State Highway, the District's Development Review/California Environmental Quality Act (CEQA) program will continue to work with local agencies to identify and evaluate transportation issues at an early stage of planning for new development.

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APPENDIX A: Definitions, Acronyms, and Abbreviations

Access Control	The condition where the right of owners or occupants of abutting land or other persons to access a highway is fully or partially controlled by public authority.
ADA	**Americans with Disabilities Act** – Landmark 1990 civil rights legislation barring discrimination against people with disabilities in all major areas of life. As it relates to provision of transportation services, the ADA requires transportation providers ensure nondiscriminatory, accessible service for disables individuals, and that public transportation providers operating fixed route bus service provide paratransit service comparable to the fixed routes.
ADT	**Average Daily Traffic** – The average number of vehicles passing a specific point during a 24-hour period. Similarly, Average Annual Daily Traffic is AADT, where the average is further normalized by averaging an entire year's traffic flows.
Air Basin	An area or territory containing similar meteorological and geographic conditions. In California, the Air Resources Board (ARB) has established nine air basins.
Arterial Highway	A general term denoting a highway primarily used for through traffic usually on a continuous route.
Auxiliary Lane	The portion of the roadway for traffic weaving, truck climbing, speed change, or other purposes supplementary to through traffic movement.
Average Travel Speed (ATS)	One of the performance measures used to estimate level-of-service (LOS) on a highway. The facility length divided by the average travel time of all vehicles traversing the facility, including all stopped delay times.
CEQA	**California Environmental Quality Act (1970)** - A law requiring governmental decision-makers be provided adequate information about the potentially significant environmental impacts of proposed projects. CEQA also mandates ways to avoid or significantly reduce damage to the environment.
Channelization	The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movement of both vehicles and pedestrians.
Clear Recovery Zone	An area clear of fixed objects adjacent to the roadway established to provide a recovery zone for vehicles that have left the traveled roadway. Minimum distances have been established. However, when an object (i.e., a tree) is desired to be retained, guardrails or some other similar structure are used to prevent head-on collisions with those fixed objects.
Climbing Lane	A lane added on an uphill grade for use by trucks, recreational vehicles and other heavy vehicles when their speeds are significantly reduced by the grade.
Concept	A strategy for future improvements that will reduce congestion, improve the mobility of people and goods and/or maintain the existing level of service on a specific route.
Conformity	Process to assess the compliance of any Federally funded or approved transportation plan, program, or project with air quality implementation plans. The conformity process is defined by the Clean Air Act.
Continuous Left-turn lane	A lane that simultaneously serves left turning vehicles traveling in opposite directions.

Conventional Highway	A highway without access control, which may or not be divided by a median. Grade separations at intersections or access controls may be used when justified at spot locations.
CMP	**Congestion Management Program** – A comprehensive program designed to reduce auto-related congestion through roadway improvements, travel demand management (TDM) and coordinated land-use planning among all local jurisdictions. This program is voluntary, but had been required of every county in the state prior to the implementation of the CMS.
CMS	**Congestion Management System** – A system required of all Transportation Management Areas (TMA). Often adopted as a part of the CMP, the CMS is primarily composed of the principal arterials in the region. **- ALSO -** **Changeable Message Signs –** Electronic signs that can change the message it displays and often used along highways to alert and redirect traffic when travel conditions demand or provide "Amber Alert" notifications.
CTC	**California Transportation Commission** – A body appointed by the governor responsible for the State Transportation Improvement Program (STIP), the development of the Regional Transportation Plan Guidelines, and statewide transportation policy.
Collector	Surface street providing access and traffic circulation within residential, commercial, and industrial areas to adjacent parcels of land.
Couplet	A pair of parallel one-way roadways running in opposite directions. This offers the potential for increasing capacity within tight city blocks where the existing roadway cannot be widened, and a parallel roadway exists that either can accommodate additional traffic or can be modified to do so.
Design Exception	Written record documenting the engineering decision(s) leading to an exception to a design standard. Exceptions are possible for both mandatory and advisory design standards.
DSMP	**District System Management Plan** – A document prepared by each Caltrans district. The DSMP identifies Caltrans priorities for highway system improvement and is used by both Caltrans and external agencies.
Design Speed	A speed selected to establish specific minimum geometric (horizontal, vertical, site distance) design elements for a particular segment of road.
Easement	A right to use or control the property of another for designated purposes.
EIR/EIS	**Environmental Impact Report/Environmental Impact Statement** – An analysis of the environmental impacts of proposed land development and transportation projects. An EIR is prepared in response to State requirements found in CEQA. An EIS is conducted for federally funded or approved projects per the National Environmental Policy Act (NEPA – 1969). The normal procedure is to circulate a "draft" document to the public and involved agencies for comments.
ERM	**Emergency Response Management** – A component of the ITS system, these systems enable the rapid deployment of emergency vehicles and personnel to the scene of a collision.
Expressway	An arterial highway with at least partial control of access, which may or may not be divided or have grade separations at intersections.
FHWA	**Federal Highway Administration** - An agency under the U.S. Department of Transportation (US DOT) responsible for all federal highway programs.

Focus Routes	These routes are a subset of the 34 High Emphasis (HE) IRRS routes. They represent the ten routes or corridors that should be the highest priority for completion to minimum facility standards in order to serve higher volume interregional trip movements.
Freeway	A divided arterial highway with full control of access and with grade separations at intersections. A freeway, as defined by statue, is also a highway in respect to which: (1) the owners of abutting lands have no right or easement of access to or from their abutting lands; or (2) such owners have only limited or restricted right or easement of access. This statutory definition also includes expressways.
F & E System	**Freeway and Expressway System –** The statewide system of highways declared by the Legislature to be essential to the future development of California. The F&E System has been constructed with a large investment of funds for the ability of control access, in order to ensure the safety and operational integrity of the highways.
Freeway Capacity	The maximum sustained 15-minute flow rate, expressed in passenger cars per hour per lane (pc/h/ln), that can be accommodated by a uniform freeway segment under prevailing traffic and roadway conditions in one direction of flow.
Frontage Road	A local street or road auxiliary to and located on the side of an arterial highway for service to abutting property and adjacent areas. These roads also allow for control of access onto the highway system.
Functional Classifications	A grouping of streets and highways sorted as to the character of service they are intended to provide.
GIS	**Geographic Information Systems** – Computerized data management system designed to capture, store, retrieve, analyze, and report on geographic and demographic information in a visual format, usually in the form of a map.
Goods Movement	The general term referring to the flow of commodities, modal good movement systems, and goods movement institutions.
Grade Separation	A crossing of two highways or a highway and a railroad at different levels with one bridging the other.
Interchange	A system of interconnecting roadways in conjunction with one or more grade separations providing for the interaction of traffic between two or more roadways on different levels.
HE Routes	**High Emphasis Routes** – The most critical routes of the Interregional Road System (IRRS), as well as the most critical for interregional travel and the state as a whole.
HCM	**Highway Capacity Manual** – A manual describing the relationships between roadway capacity and travel/flow characteristics, and containing procedures for calculating the level-of-service (LOS) of a roadway or intersection.
HOV lanes	**High Occupancy Vehicle lanes** – A travel lane on a roadway segment whose use is restricted to vehicles where a predetermined minimum number of occupants are in the vehicle, usually more than one person.
Initial Study	A preliminary study prepared by the lead agency to determine whether an environmental impact report (EIR) or negative declaration (ND) must be prepared pursuant to CEQA.

IRRS	**Interregional Road System** – A series of interregional state highway routes, outside the urbanized areas, which provides access to, and links between, the State's economic centers, major recreational centers, and urban and rural areas.
ISTEA	**Intermodal Surface Transportation and Efficiency Act** – Federal transportation legislation signed into law in 1991 that substantially changed the way transportation funding decisions are made. The Act emphasized diversity, balance of modes, and the preservation of the existing system. It was superseded by TEA 21 in 1998 and SAFETEA–LU in 2005.
Intermodal Transportation	The process of applying a system approach to transportation in which goods and people are transported in a continuous and efficient manner between origin and destination, using two or modes in the most efficient manner.
ITIP	**Interregional Transportation Improvement Program** – A program prepared biennially by Caltrans that includes interregional highway and intercity rail projects proposed for funding through the STIP. This program represents 25% of the total STIP budget, with the other 75% in the RTIP. Sixty percent of the ITIP funds are programmed and expended for improvements to state highways outside the boundaries of urbanized areas (populations greater than 50,000) and for intercity rail projects. RTPAs/MPOs may propose projects for consideration by Caltrans for inclusion in the ITIP.
ITS	**Intelligent Transportation System** – This is a general term to describe a range of advanced electronic and information technologies that can be used to improve the safety, operational efficiency, and productivity of the transportation system.
ITSP	**Interregional Transportation Strategic Plan** – A plan identifying six key objectives for implementing the Interregional Improvement Program (IIP) and strategies and actions to focus improvements and investments. This document also addresses development of the IRRS and intercity rail in California, and defines a strategy that extends beyond the current STIP.
Interstate Highway System	The system of highways that connects the principal metropolitan areas, cities, and industrial centers of the United States. The Interstate System also connects the US to internationally significant routes in Mexico and Canada.
LCP	**Local Coastal Plan** – A guide for the development of land within the coastal areas of California. The zoning ordinances of the jurisdictions within the region implement provision of the LCP.
LOS	**Level of Service -** Term used to describe the quality of operation of a highway facility. It is a qualitative measure of the effect of such factors as speed and travel time, traffic interruptions, freedom to maneuver, driving comfort, convenience, safety and operation cost. In this report, LOS is based on peak traffic hours. On urban street systems, the quality of flow is most frequently controlled by traffic conditions at signalized intersections. The flow characteristics are defined in six levels of service.
LOS A	Describes a condition of free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by driver desires, speed limits, and physical roadway conditions.
LOS B	This zone allows stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation.
LOS C	This zone still allows stable flow, but the higher volumes more closely control speeds and maneuverability. Most of the drivers are somewhat restricted in their freedom to select their own speed, change lanes, or pass.

LOS D	This level approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volumes and temporary restrictions to flow may cause substantial drops in operating speeds.
LOS E	This level cannot be described by speed alone, but represents operations at even lower operating speeds than in level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages for brief periods of time.
LOS F	Describes forced flow operation at low speeds, where volumes are below capacity. These conditions usually result from vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of the downstream congestion. In the extreme, both speed and volume can drop to zero.
Median	The portion of a divided highway separating the traveled ways for traffic in opposite directions.
MPO	**Metropolitan Planning Organization** – The organization designated by the governor as responsible for transportation planning and programming activities, as required under federal law, in an urbanized area. The MPO serves as the forum for cooperative decision making by a regional board made up of local elected officials and city and county staff. The MPO is responsible for development of the federal long-range transportation plan and multi-year funding programs, and the selection and approval of transportation projects using federal funds.
NAAQS	**National Ambient Air Quality Standards** – Standards set by the federal EPA for the maximum levels of air pollutants that can exist in the outdoor air without unacceptable effects on human health or the public welfare.
NEPA	**National Environmental Policy Act (1969)** – Federal legislation establishing the requirements and procedures for documenting the environmental impacts of federally funded projects, including transportation improvements.
NHS	**National Highway System** – Required under Section 1006 for ISTEA, the NHS is a 155,000-mile system comprised of major highways serving interstate and interregional travel, connecting major population centers, ports, airports, public transportation facilities, major travel destinations, international border crossings, and major military installations.
NTN	**National Truck Network** – This network is comprised of the National System of Interstate and Defense Highways. Sometimes referred to as just National Network (NN). This network is part of the larger Surface Transportation Assistance Act (STAA) network that also includes Terminal Access (TA) and Service Access (SA) routes.
Park and Ride Lots	Parking lots along highway corridors that allow for drivers to park their car/truck and ride with another individual or use a transit system, reducing the number of vehicles on the road. Some lots may also offer bicycle lockers.
Platoon	A group of vehicles traveling together as a group, either voluntarily or involuntarily because of signal control, geometrics, lack of passing opportunities or other factors.
Programming	The process of scheduling high-priority projects for development and implementation.

PID	**Project Initiation Document** – A document required for all projects before it can be considered for funding or programming into the STIP or the SHOPP. The PID may be any of a number of documents including a Project Study Report (PSR), Project Study Report/Project Development Support (PSR/PDS), Project Scope and Summary Report (PSSR), or a Noise Barrier Scope and Summary (NBSSR).
PTSF	**Percent time spent following** – A performance measure used to estimate level of service on a two-lane highway. It is the average percentage of the travel time that vehicles must travel in platoons behind slower vehicles due to the inability to pass.
Public Participation	The active and meaningful involvement of the public in the development of transportation plans and programs.
Ramp metering	A traffic management strategy that utilizes a system of traffic signals on freeway entrance and connector ramps to regulate the volume of traffic entering a freeway corridor. This is to maximize the efficiency of the freeway and thereby minimize the total delay in the transportation corridor.
Relinquishment	A transfer of the State's rights, title and interest in and to a highway, or portion thereof, to a city or county.
RTP	**Regional Transportation Plan** – the RTP is a long-range plan (20-year horizon) to improve a region's state highways; local streets, roads and bikeways; airport and marine facilities; transit, paratransit, and passenger rail services. As a guide for the development of these facilities, the RTP describes the priorities for making investments in a region's transportation system.
RTPA	**Regional Transportation Planning Agency** – The county level, or multi-county level, agency responsible under state law for the preparation of RTPs and allocation of funds. RTPAs can be local transportation commissions, Councils of Governments, MPOs, or statutorily created agencies.
Right-of-Way	Real estate acquired for transportation purposes, which includes the facility itself (highway, fixed guideway, etc.) as well as associated uses (maintenance structures, drainage systems, roadside landscaping, etc.).
Roadbed	Those portions of the roadway extending from curb line to curb line or shoulder line to shoulder line. Divided highways are considered to have two roadbeds.
Roadway Characteristics	The geometric characteristics of the roadway segment under study, including the number and width of lanes, right-shoulder lateral clearance, interchange/intersection spacing, vertical alignment, and lane configurations.
RWIS	**Road Weather Information System** – This ITS system collects pavement temperature, visibility, wind speed and direction, and precipitation data and presents the data in a usable format to transportation system operators, for the public.
Rural	An area with a population under 5000.
Rural Local	Roadways that provide access to adjacent lands and provide service to travel over relatively short distances as compared to collectors or other highway systems.
Rural Other Principal Arterial	All non-Interstate Principal Arterials which will serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel. These roadways will also serve all urban areas of 50,000 and over population and a large majority of those with population of 25,000 and over. They should also provide an integrated network without stub connections except where unusual geographic or traffic flow conditions dictate otherwise.

SAFE	**Service Authority for Freeway Emergencies** – State legislation (SB-1199), enacted in 1985, authorized the establishment of local SAFEs for the purposes of installing, maintaining, and operating a network of motorist-aid call boxes. The program is funded by a $1 per year fee on all registered motor vehicles within the county.
SAFETEA-LU	**The Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users** – Federal legislation enacted in 2005. SAFETEA-LU authorizes the Federal Surface Transportation Programs (FSTP) for highways, highway safety, and transit for the 5-year period from 2005-2009. This legislation superseded TEA-21, but maintains its basic structure and builds on its key initiatives.
Scenic Corridor	A band of land that is visible from and generally adjacent to, but outside of, the highway right-of-way having scenic, historical, or other aesthetics characteristics.
Scenic Highway	An officially designated portion of the State Highway System traversing areas of outstanding scenic beauty and/or historic character. Designations include: All American Road, National Scenic Byway, U.S. Forest Service Byway, Historic Highway and State Scenic Highway.
Scoping	An activity of the lead agency in the environmental process ensuring the inclusion of all significant issues and maximum participation for the development of the EIR/EIS.
Segment	A portion of the highway identified for analysis that is homogenous in nature.
SB-45 (1997)	**Senate Bill 45** of the 1997 California State Legislature – State legislation enacted in 1997 that substantially changed the process for allocating state and federal transportation funds through the STIP. The major changes include consolidation of several prior STIP funding programs into two broad programs, increased programming flexibility, authority, and accountability for regional agencies and full accounting of all project costs in the STIP. SB-45 initially shortened the STIP period from 7 to 4 years. However, a five-year program was established with the 2002 STIP under Assembly Bill (AB) 2928.
Shoulder	The portion of the roadway contiguous with the traveled way for accommodating stopped vehicles, for emergency use, and for lateral support of the roadbed base and surface courses.
SHOPP	**State Highway Operation and Protection Plan** – A program of projects adopted by Caltrans to preserve and protect the state highway system and provides for its safe operation. SHOPP projects include traffic safety, pavement and bridge rehabilitation, seismic retrofit, earthquake and storm damage repair and traffic operational improvements. These projects are maintained on a four-year list that is updated every two years.
SIP	**State Implementation Plan** – A document prepared by each State, with input from local Air Pollution Control Districts (APCDs) describing the existing air quality conditions and measures that will be taken to attain and maintain national ambient air quality standards (NAAQS). In California, the California Air Resources Board (CARB or ARB) prepares the SIP.
SR	**State Route** – State highways within the State, other than Interstate and US routes, which serve interstate and intrastate travel. These highways can be freeways, expressways or conventional highways depending on their access control.

STAA Network	**Surface Transportation Assistance Act Network** – This network was created by federal legislation in 1982 and is made up of the National Network (NN), Terminal Access (TA) and Service Access (SA) routes. This legislation requires states to allow large trucks on these specific routes.
STIP	**State Transportation Improvement Program** – A statewide program of transportation projects adopted biennially by the CTC that governs the expenditure of state revenues for transportation. The STIP consists of transportation projects proposed in the RTIPs and ITIP, and approved by the CTC.
STRAHNET	**Strategic Highway Network** - a federal designation for the system of highways providing access to major U.S. military installations.
TA Route	**Terminal Access Route** – Portions of State routes and local roads that can accommodate STAA trucks. TA routes allow STAA trucks to (1) travel between NTN routes, (2) reach a truck's operating facility, or (3) reach a facility where freight originates, terminates, or is handled in the transportation process.
TASAS	**Traffic Accident Surveillance and Analysis System** – A system providing a detailed list or summary of collisions occurring on highways, ramps, or intersections in the State Highway System. Collision histories can be accessed by location, highway characteristics, collision data codes or any combination of these by State safety engineers for evaluation and recommendations.
TCM	**Transportation Control Measure** – Any strategy to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions.
TDM	**Transportation Demand Management** – The implementation of measures that encourage people to change their mode of travel, travel during off-peak periods, or not make the trip alone at all, e.g., ridesharing, telecommuting, pricing incentives and parking management.
TE	**Transportation Enhancements** – A program under ISTEA, TEA-21, and SAFETEA-LU, which sets aside a portion of Surface Transportation Program (STP) funds for several categories of projects whose purpose is to enhance the transportation system. Enhancement funds can be used for bicycle and pedestrian facilities, landscaping and scenic highway programs, restoration of historic rail stations, and various other purposes.
TEA-21	**Transportation Equity Act for the 21st Century** – Federal legislation enacted in 1998. TEA-21 authorizes the Federal Surface Transportation Programs (FSTP) for highways, highway safety, and transit for the 6-year period from 1998-2003. This legislation superseded ISTEA, but maintained its basic structure and built on its key initiatives. TEA-21 has bee superceded by SAFETEA-LU.
TMC	**Traffic Management Center** – A building, or portion of a building, that serves as a focal point to monitor traffic and road conditions, as well as train and transit schedules, and airport and shipping advisories. From this point, information about collisions, road closures and emergency notifications is relayed to the public.
Transportation Stakeholders	In transportation, stakeholders include FHWA, CTC, RTPA/MPO(s), transportation departments and commissions, cities and counties, Native American Tribal Governments, economic development and business interests, resource agencies, interest groups, the public, the Legislature, and the Governor.

TSDP	**Transportation System Development System** – A TSDP identifies a reasonable, comprehensive and effective range of transportation improvements on State highways. It is Caltrans statement of priorities for improvements after negotiating and joint planning efforts with regional agencies.
TSM	**Transportation System Management** – TSM is (1) a process orientated approach to solving transportation problems considering both long and short-range implications, and (2) a services and operations process, in which low capital, environmentally-responsive, efficiency-maximizing improvements are implemented on existing facilities.
TTAC	**Technical Transportation Advisory Committee** - A regional advisory committee that serves as a communication link between a RTPA/MPO and all other transportation agencies within a county or specified area. TTACs review and make policy recommendations on fiscal matters, fund allocations, special studies, and planning documents for submittal to the appropriate board(s). The committee will usually consist of representatives from the cities, county, transit agencies, APCD, RTPA/MPO, and Caltrans.
Urbanized Area	One or more places and the adjacent densely settled surrounding area that together include at least 50,000 people. "Densely settled" means having a population density of 1000 persons per square mile (generally) based on census blocks. Some small portions of an area not reaching the density threshold are included for spatial continuity
Urban Collector	The collector street system provides land access service and traffic circulation within residential neighborhoods, commercial and industrial areas. It differs from the arterial system in that facilities on the collector system may penetrate residential neighborhoods, distributing trips from the arterials through the area to the ultimate destination. Conversely, the collector street also collects traffic from local streets in residential neighborhoods and channels it into the arterial system. In the central business district, and in other areas of like development and traffic density, the collector system may include the street grid, which forms a logical entity for traffic circulation.
Urban Local	Comprised of all facilities not on one of the higher systems. It serves primarily to provide direct access to abutting land and access to the higher order systems. It offers the lowest level of mobility and usually contains no bus routes. Service to through traffic movement usually is deliberately discouraged.
Urban Minor Arterial	Interconnects with and augments the urban principal arterial system and provides service to trips of moderate length at a somewhat lower level of travel mobility than principal arterials. This system also distributes travel to geographic areas smaller than those identified with the higher system. The minor arterial street system includes all arterials not classified as a principal and contains facilities that place more emphasis on land access than the higher system, and offers a lower level of traffic mobility. Such facilities may carry local bus routes and provide intra-community continuity, but ideally should not penetrate identifiable neighborhoods. This system should include urban connections to rural collector roads where such connections have not been classified as urban principal arterials.
Urban Other Principal Arterial	This system consists of all non-Interstate principal arterials.
Urban Principal Arterial – Other Fwys/Expwys	Connecting links of non-Interstate rural principal arterials. Connecting links of rural minor arterials.
US Route	A network of highways of statewide and national importance. These highways can be freeways, expressways, or conventional highways.

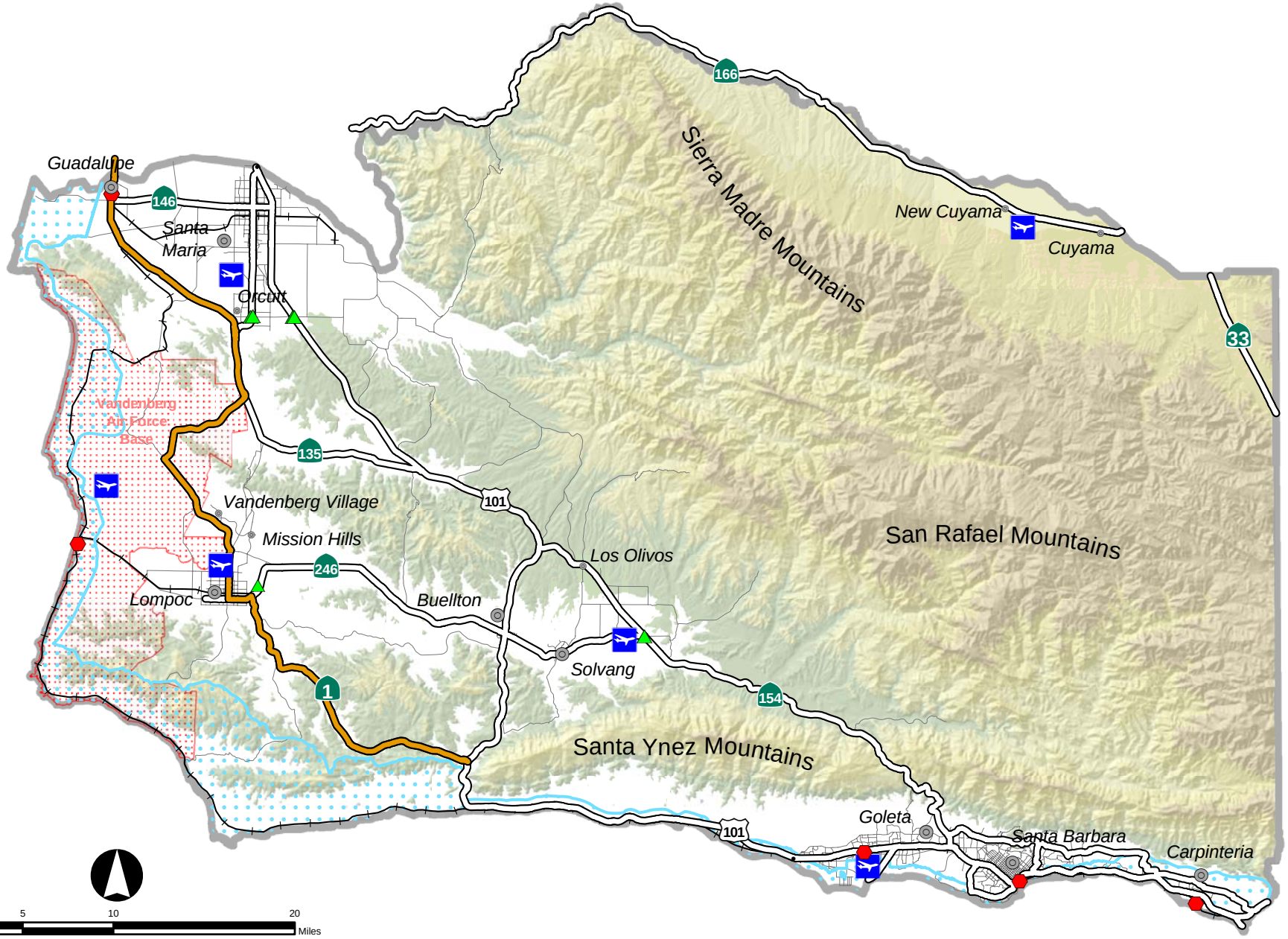
APPENDIX B: Maps and Segment Data

Caltrans
District 5 System Planning

State Route 1
Rail
Airports
Urban Areas
County Boundaries

State Route 1 in Caltrans District 5

APPENDIX B-1: Maps and Segment Data
Santa Barbara County



Caltrans
District 5
System
Planning

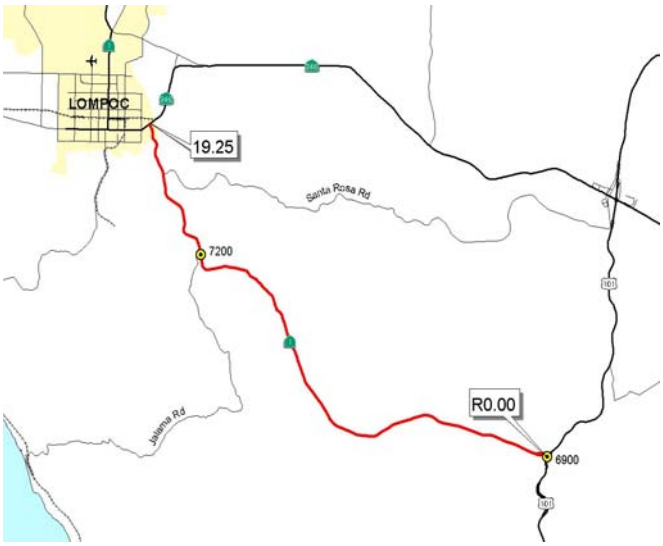
Legend

- Coastal Zone
- Military Base
- State Route 1
- Rail
- Airports
- Park & Ride Lots
- Rest Stop
- Rail Stops

Santa Barbara County Development Centers

ROUTE 1 – SANTA BARBARA COUNTY – SEGMENT 1

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
1	R0.00	19.25	U.S. Route 101 to SR 246
Segment Concept : LOS D/ 2-lane Conventional Highway with Operational Improvements			



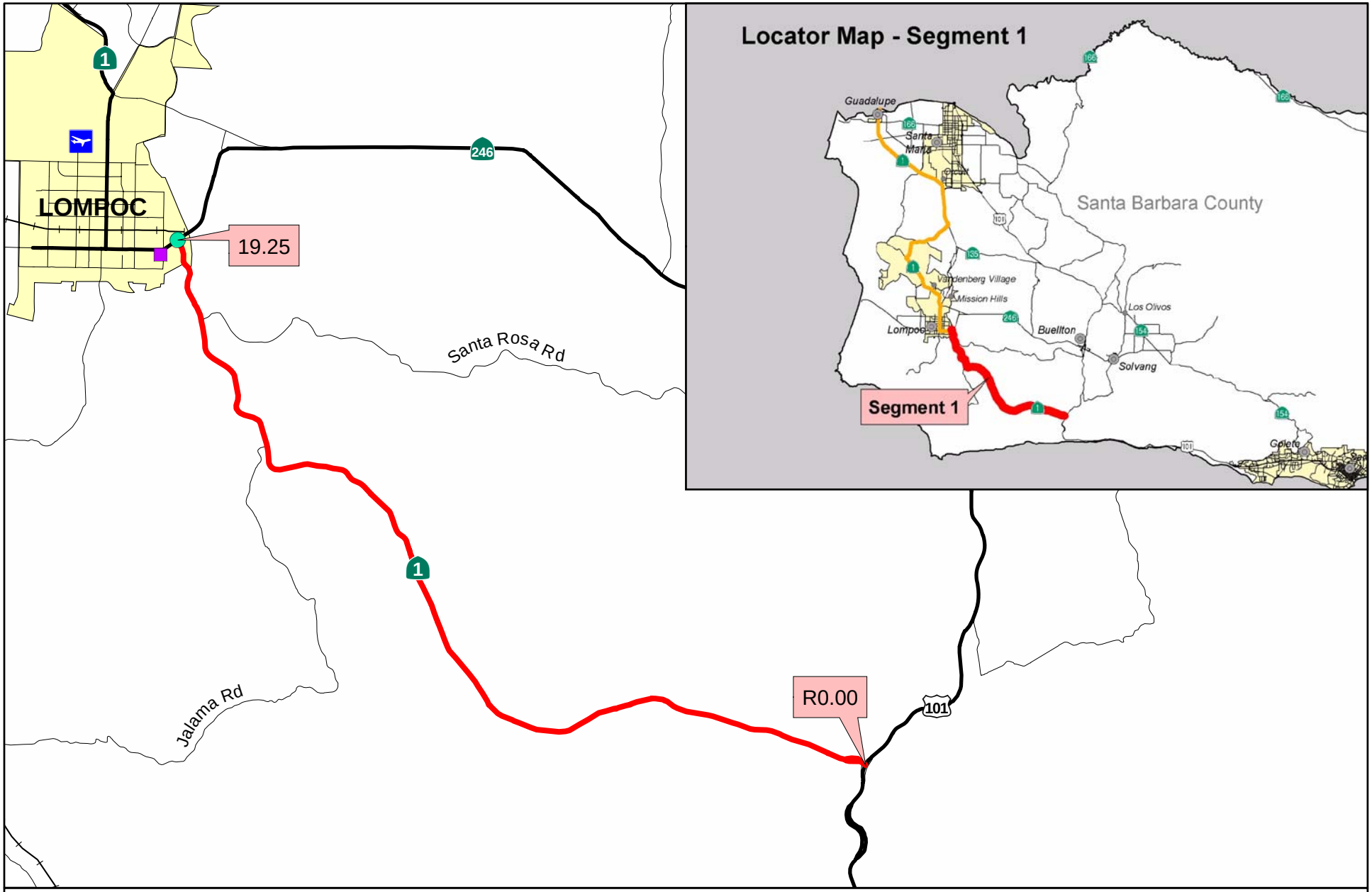
SEGMENT FEATURES		
Environmental Constraints:	▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Clean Air Express	▪ Class III Bike Lanes ▪ Pacific Coast Bike Route
Land Uses along Corridor :	▪ Agriculture ▪ Open space	
Major Traffic Generators:	▪ Lompoc ▪ Vandenberg Air Force Base ▪ Jalama Beach County Park	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 1 is presently operating at peak LOS D and is projected to remain at LOS D to the year 2025.

RECOMMENDED ACTIONS:

- Construct system-wide operational improvements: passing lanes, turn-outs and channelization for turning movements, as appropriate.
- Provide standard width shoulders for improved bicycling conditions.
- Stabilize cut slopes along roadway.
- Install CMS on US 101 and/or SR 246 to warn of lanes blockages on Segment 1.
- Encourage use of SR 246 as alternative route.
- Encourage car-pooling or vanpooling for journey to work on South Coast.



Caltrans
District 5
System
Planning

0 1 2 3 4 5 Miles

Urban Area
Segment 1
Rail
Airport
Park & Ride Lot
Signalized Intersection

State Route 1
Santa Barbara County
Segment 1
PM R0.00/19.25

Caltrans District 5 - Segment Data Sheet

Santa Barbara County	Route	1	Segment/(Sub-segment)	1

Segment/sub-segment Location

PM start	PM end	Length	Description
R0.00	19.25	19.25	US 101 to SR 246

Existing Roadbed Information

Number of Lanes	2 to 4	Lane Width	11 to 14 ft.
Terrain	Rolling	ROW Width	100 to 200 ft.
Signalized Intersections	1	Shoulder Width	4 to 8 ft
Bicycle Facilities	Class III	Median Width	0 to 60 ft.

Route Designations

Functional Classification:	Rural Principal Arterial & Urban Principal Arterial
Facility Type:	Expressway & Conventional Highway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	7,500	14,300	0.37	0.48	D	D
	ADT Ann. Growth (2002-2025)		2.85%	Directional Split		60%
	Peak Hour Volume (2002)		900	Peak Hour Truck		7%

	Location	Delay Time (seconds)		LOS	
Signalized Intersection Analysis		2002	2025	2002	2025
	State Route 246	LOS D in 1997			

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.58	0.85	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.014	0.030	
Fatality & Injury Collision Rate	0.28	0.41	

*Average collision rates statewide for this type facility

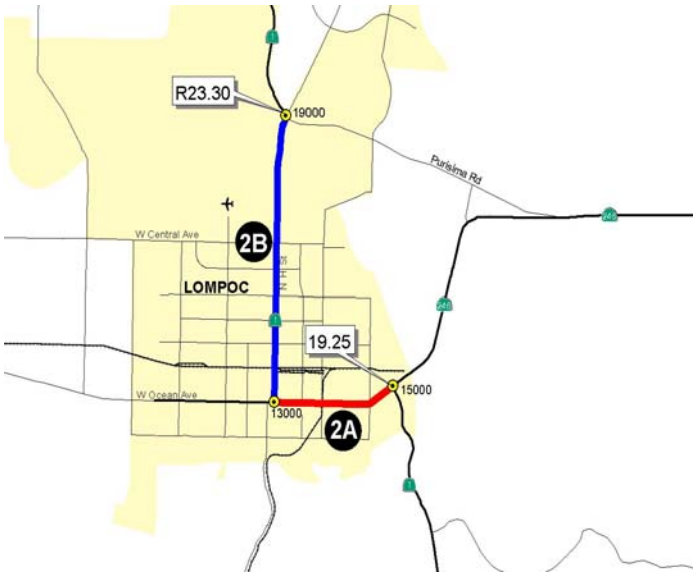
Proposed Concept

Proposed Transportation Concept	LOS D / 2-lane conventional highway and expressway

Comments: ***Provide passing lanes, turn-outs, and channelization as appropriate; standard width shoulders throughout; use of CMS (on US 101, Segment 2, and/or SR 246) to warn of lane blockages on Segment 1.***

ROUTE 1 – SANTA BARBARA COUNTY – SEGMENT 2

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
2A	19.25	20.57	SR 246 to H St (Lompoc)
2B	20.57	R23.30	H St (Lompoc) to Harris Grade and Purisima Roads
Segment Concept : LOS C/D: Four-lane Conventional Highway			



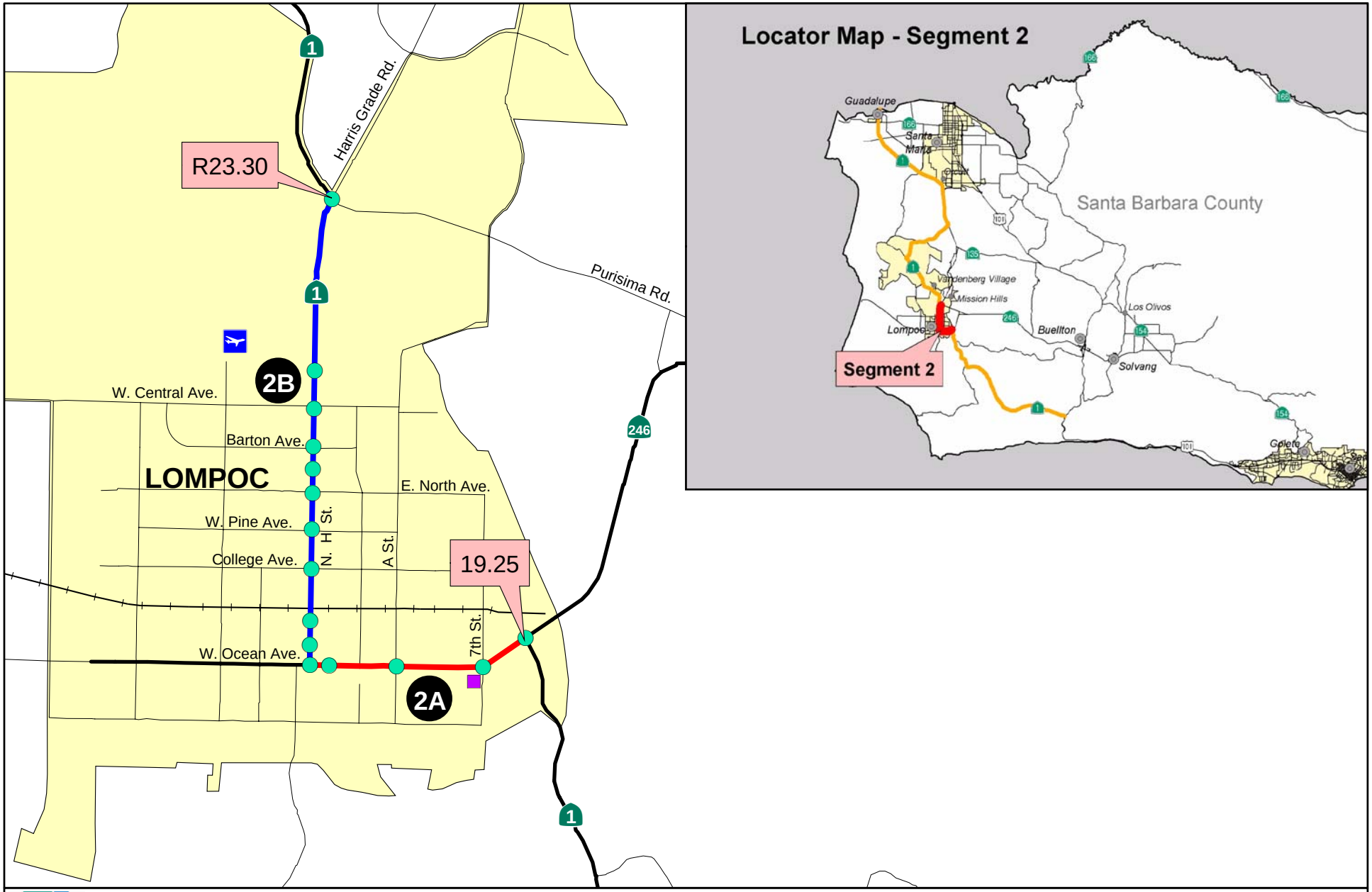
SEGMENT FEATURES		
Environmental Constraints:	▪ Historic resources ▪ Geologic and seismic	
Multimodal Facilities:	▪ City of Lompoc Transit (COLT), Clean Air Express, The Breeze ▪ Lompoc Airport	▪ Park and ride facilities ▪ Pacific Coast Bike Route
Land Uses along Corridor :	▪ Urban commercial, office, industrial	
Major Traffic Generators:	▪ Downtown Lompoc ▪ Mission Plaza shopping center ▪ Regional destinations to the north and south	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 2 is presently operating at peak LOS B/D, according to location. Sections of Segment 2B would operate at LOS C/F by the year 2015 according to a traffic study for a recently approved development at the intersection with Harris Grade and Purisima Roads. This intersection currently operates at LOS B, and would decline to LOS D according to that study.

RECOMMENDED ACTIONS:

- Evaluate effects of Central Avenue Extension on segment traffic.
- Consider improving local circulation with parallel arterial couplets or other patterns to relieve traffic on Ocean and H streets.
- Widen east bridge over Santa Ynez River for northbound operations for bicyclists.
- Improve circulation for bicycle travel through intersection with Harris Grade and Purisima Roads at north end of segment.
- Context Sensitive Solutions for State Highway as “Main Street” in Lompoc.



Caltrans District 5 System Planning

0 0.5 1 1.5 2 Miles

Sub-Segment 2A - PM 19.25/20.57

Sub-Segment 2B - PM 20.57/R23.30

Rail

Urban Area

Airport

Park & Ride Lot

Signalized Intersection

State Route 1
Santa Barbara County
Segment 2
PM 19.25/R23.30

Caltrans District 5 - Segment Data Sheet

Santa Barbara County	Route	1	Segment / (Sub-segment)	2A

Segment / sub-segment Location

PM start	PM end	Length	Description
19.25	20.57	1.32	State Route 246 to H Street Lompoc

Existing Roadbed Information

Number of lanes	4	Lane Width	11 to 12 ft.
Terrain	Flat	ROW Width	100 ft.
Signalized Intersections	4	Shoulder Width	6 to 16 ft.
Bicycle Facilities	Class III	Median Width	0 to 14 ft.

Route Designations

Functional Classification	Urban Principal Arterial
Facility Type:	Conventional Highway
Trucking Designations	Advisory: KPRA over 36 feet not advised
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	16,500	25,700			Not Applicable	
	ADT Ann. Growth (2002-2025)		1.95%	Directional Split		55%
	Peak Hour Volume (2002)		1,600	Peak Hour Truck		4%

	Location	Delay Time (seconds)		LOS	
Signalized Intersection Analysis		2002	2025	2002	2025
	7th, A, G	~ No Data ~			
	H	~ No Data; nearing capacity ~			

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	4.22	2.83	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.042	0.018	
Fatality & Injury Collision Rate	1.39	1.24	

*Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS C / 4-lane conventional highway

Comments: ***Evaluate effects of Central Avenue extension; consider designation of parallel arterials as directional couplets***

Caltrans District 5 - Segment Data Sheet

Santa Barbara County	Route	1	Segment/(Sub-segment)	2B

Segment/sub-segment Location

PM start	PM end	Length	Description
20.57	R23.30	2.73	North H Street Lompoc to Harris Grade and Purisima Roads

Existing Roadbed Information

Number of lanes	4	Lane Width	10 to 12 ft.
Terrain	Flat	ROW Width	100 ft.
Signalized Intersections	10	Shoulder Width	2 to 8 ft.
Bicycle Facilities	Class III	Median Width	0 to 14 ft.

Route Designations

Functional Classification	Urban Principal Arterial
Facility Type:	Conventional Highway
Trucking Designations	Advisory: KPRA over 36 feet not advised. No trucks over 3 tons.
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	18,100	26,100			B-D	C-F
	ADT Ann. Growth (2002-2025)		1.60%	Directional Split		55%
	Peak Hour Volume (2002)		1,500	Peak Hour Truck		4%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	Walnut, Chestnut, College, Pine, Barton, Lompoc Shopping Center	~ no data ~			
	North Ave.			B	C
	Central			D	F
	Mission Plaza Center	~ no data ~			
	Purisima/Harris Grade			B	D

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	6.10	2.02	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.000	0.018	
Fatality & Injury Collision Rate	1.59	0.89	

*Average collision rates statewide for this type facility

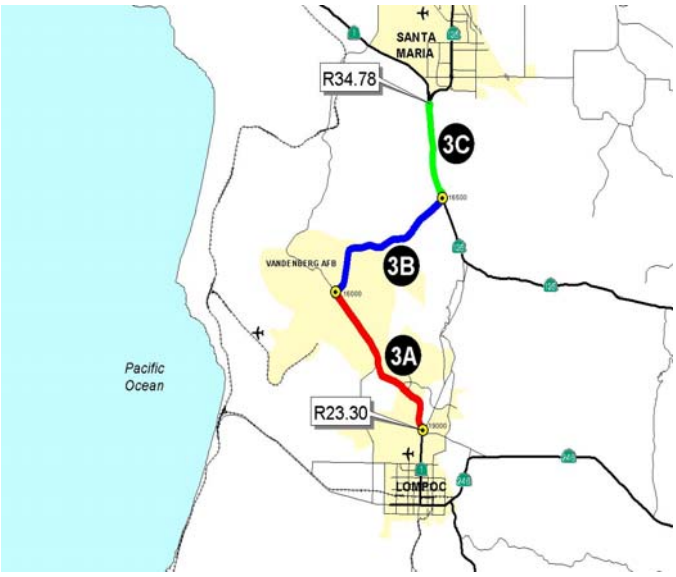
Proposed Concept

Proposed Transportation Concept	LOS C/D/ 4-lane conventional highway

Comments: ***Evaluate effects of Central Avenue extension; consider designation of directional couplets using parallel arterials; widen east bridge over Santa Ynez River and improve operations through intersection with Harris Grade and Purisima Roads for bicycle traffic.***

ROUTE 1 – SANTA BARBARA COUNTY – SEGMENT 3

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
3A	R23.30	M29.89	Harris Grade/Purisima Roads to Vandenberg Road
3B	M29.89	M36.19	Vandenberg Road to SR 135
3C	M36.19	R34.78	SR 135 to Orcutt Expressway
Segment Concept : LOS C: Four-lane Conventional Highway			



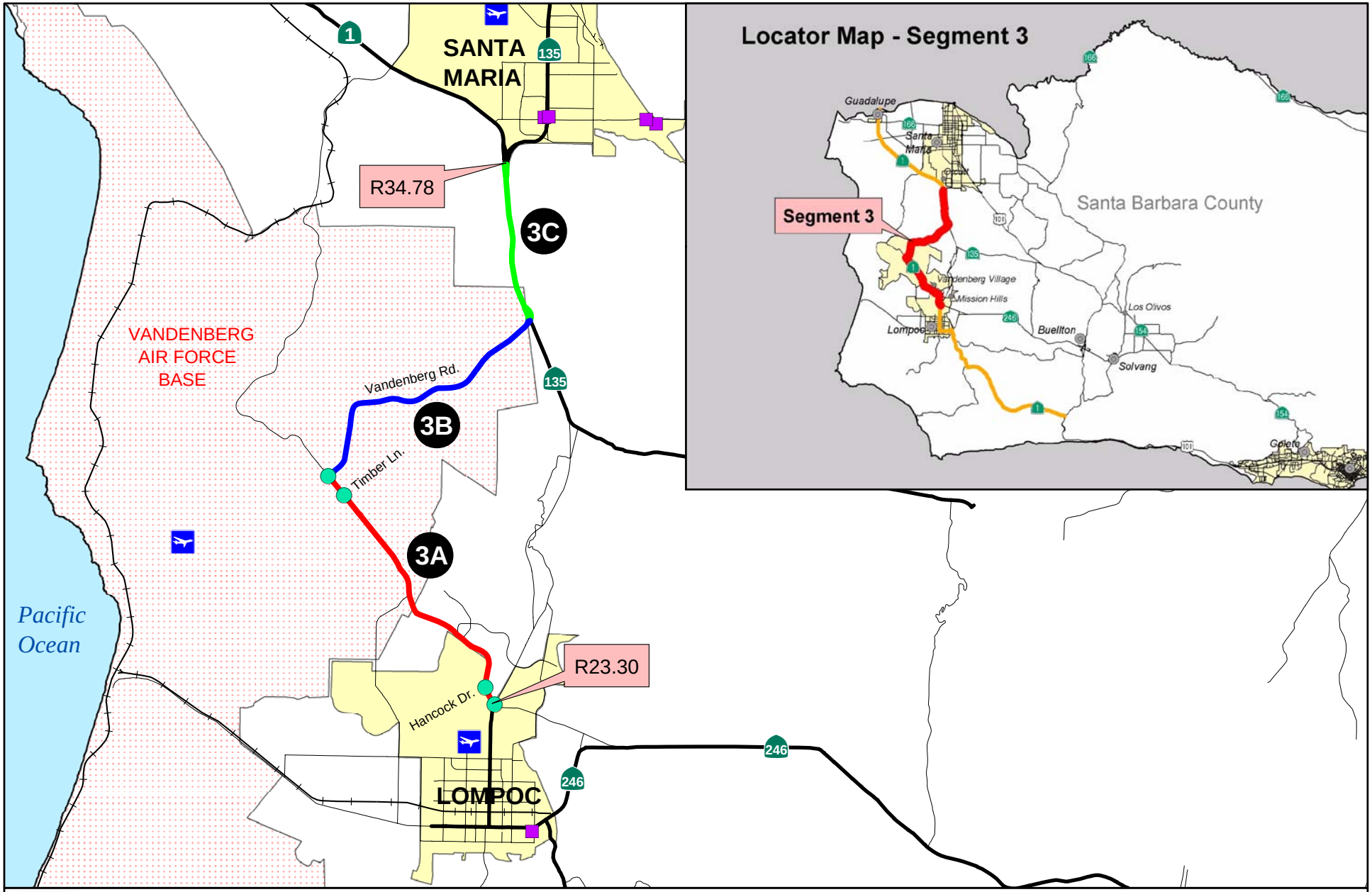
SEGMENT FEATURES		
Environmental Constraints:	▪ Scenic and historic resources ▪ Special status species/habitat	▪ Geologic and seismic ▪ Archaeological and cultural resources
Multimodal Facilities:	▪ City of Lompoc Transit (COLT), SMOOTH, Clean Air Express, The Breeze	▪ Pacific Coast Bike Route
Land Uses along Corridor :	▪ Educational Facility ▪ Limited residential in Sub-segment 3A ▪ Rural, open space, ▪ Public lands (Military base)	
Major Traffic Generators:	▪ La Purisima Mission State Historic Park ▪ Allan Hancock College ▪ Vandenberg Village ▪ Mission Hills ▪ Vandenberg Air Force Base	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 3 is presently operating at peak LOS A and is projected to remain at peak LOS A/B through year 2025.

RECOMMENDED ACTIONS:

- Enhance COLT, Breeze, and Clean Air Express Service as needed.
- Limit access to highway.



Caltrans
Caltrans District 5 System Planning

0 1 2 3 4 5 Miles

Sub-Segment 3A - PM R23.30/M29.89
Sub-Segment 3B - PM M29.89/M36.19
Sub-Segment 3C - PM M36.19/R34.78
Rail
Signalized Intersection
Military Base
Urban Area
Airport
Park & Ride Lot

State Route 1
Santa Barbara County
Segment 3
PM R23.30/R34.78

Caltrans District 5 - Segment Data Sheet

Santa Barbara County	Route	1	Segment / (Sub-segment)	3A

Segment/sub-segment Location

PM start	PM end	Length	Description
R23.30	M29.89	6.59	Harris Grade and Purisima Roads to Vandenberg AFB Main Entry

Existing Roadbed Information

Number of lanes	4	Lane Width	12 ft.
Terrain	Rolling	ROW Width	60 to 150 ft.
Signalized Intersections	3	Shoulder Width	4 to 8 ft.
Bicycle Facilities	Class III	Median Width	22 to 36 ft.

Route Designations

Functional Classification	Urban Principal Arterial
Facility Type:	Conventional Highway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	17,800	26,200			A	A/B
	ADT Ann. Growth (2002-2025)		1.69%	Directional Split		58%
	Peak Hour Volume (2002)		1,500	Peak Hour Truck		4%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	Hancock, Timber Lane	~ no data ~			
	Vandenberg Road	~ no data. known peak hour delays ~			

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.81	1.70	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.008	0.031	
Fatality & Injury Collision Rate	0.29	0.72	

*Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS C/ 4-lane conventional highway

Comments: ***Limit points of access to highway***

Caltrans District 5 - Segment Data Sheet

Santa Barbara County	Route	1	Segment/(Sub-segment)	3B

Segment/sub-segment Location

PM start	PM end	Length	Description
M29.89	M36.19	6.30	Vandenberg AFB Main Entry to SR 135

Existing Roadbed Information

Number of lanes	4	Lane Width	12 ft.
Terrain	Rolling	ROW Width	150 ft.
Signalized Intersections	None	Shoulder Width	8 ft.
Bicycle Facilities	Class III	Median Width	22 to 46 ft.

Route Designations

Functional Classification	Urban Principal Arterial & Rural Principal Arterial
Facility Type:	Conventional Highway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	13,900	17,700			A	A/B
	ADT Ann. Growth (2002-2025)		1.05%	Directional Split		55%
	Peak Hour Volume (2002)		1,500	Peak Hour Truck		3%

	Location	Delay Time (seconds)		LOS	
Signalized Intersection Analysis		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.93	1.67	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.000	0.022	
Fatality & Injury Collision Rate	0.42	0.65	

*Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS C/ 4-lane conventional highway
Comments: *Limit access to highway*	

Caltrans District 5 - Segment Data Sheet

Santa Barbara County	Route	1	Segment / (Sub-segment)	3C

Segment / sub-segment Location

PM start	PM end	Length	Description
M36.19	R34.78	3.34	SR 135 to Orcutt Expressway

Existing Roadbed Information

Number of lanes	4	Lane Width	12 ft.
Terrain	Rolling	ROW Width	150 ft.
Signalized Intersections	None	Shoulder Width	8 ft.
Bicycle Facilities	Class III	Median Width	46-99 ft.

Route Designations

Functional Classification	Rural Principal Arterial
Facility Type:	Expressway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	15,000	17,800			A	A
	ADT Ann. Growth (2002-2025)		74.00%	Directional Split		55%
	Peak Hour Volume (2002)		1,500	Peak Hour Truck		2%

	Location	Delay Time (seconds)		LOS	
Signalized Intersection Analysis		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.66	0.61	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.000	0.016	
Fatality & Injury Collision Rate	0.32	0.28	

*Average collision rates statewide for this type facility

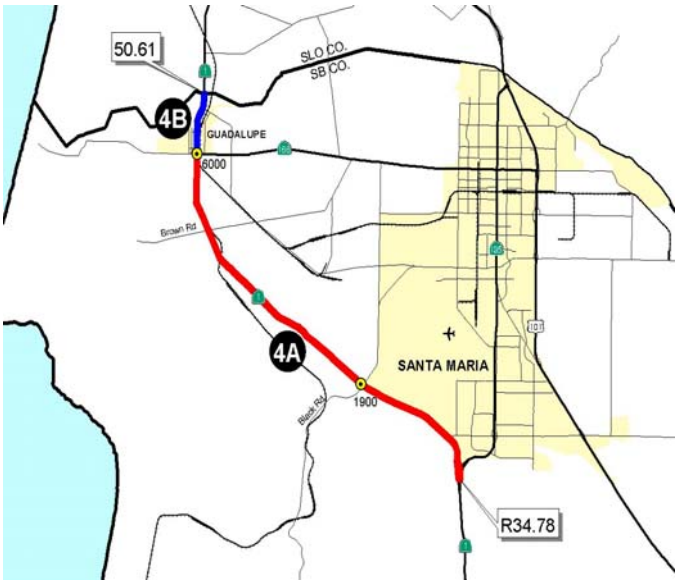
Proposed Concept

Proposed Transportation Concept	LOS C / 4-lane expressway

Comments: ***Minimize access to highway***

ROUTE 1 – SANTA BARBARA COUNTY – SEGMENT 4

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
4A	R 34.78	49.20	Orcutt Expressway to SR 166
4B	49.20	50.61	SR 166 to Santa Barbara/San Luis Obispo County Line
Segment Concept : LOS C: Two- and Four-Lane Conventional Highway			



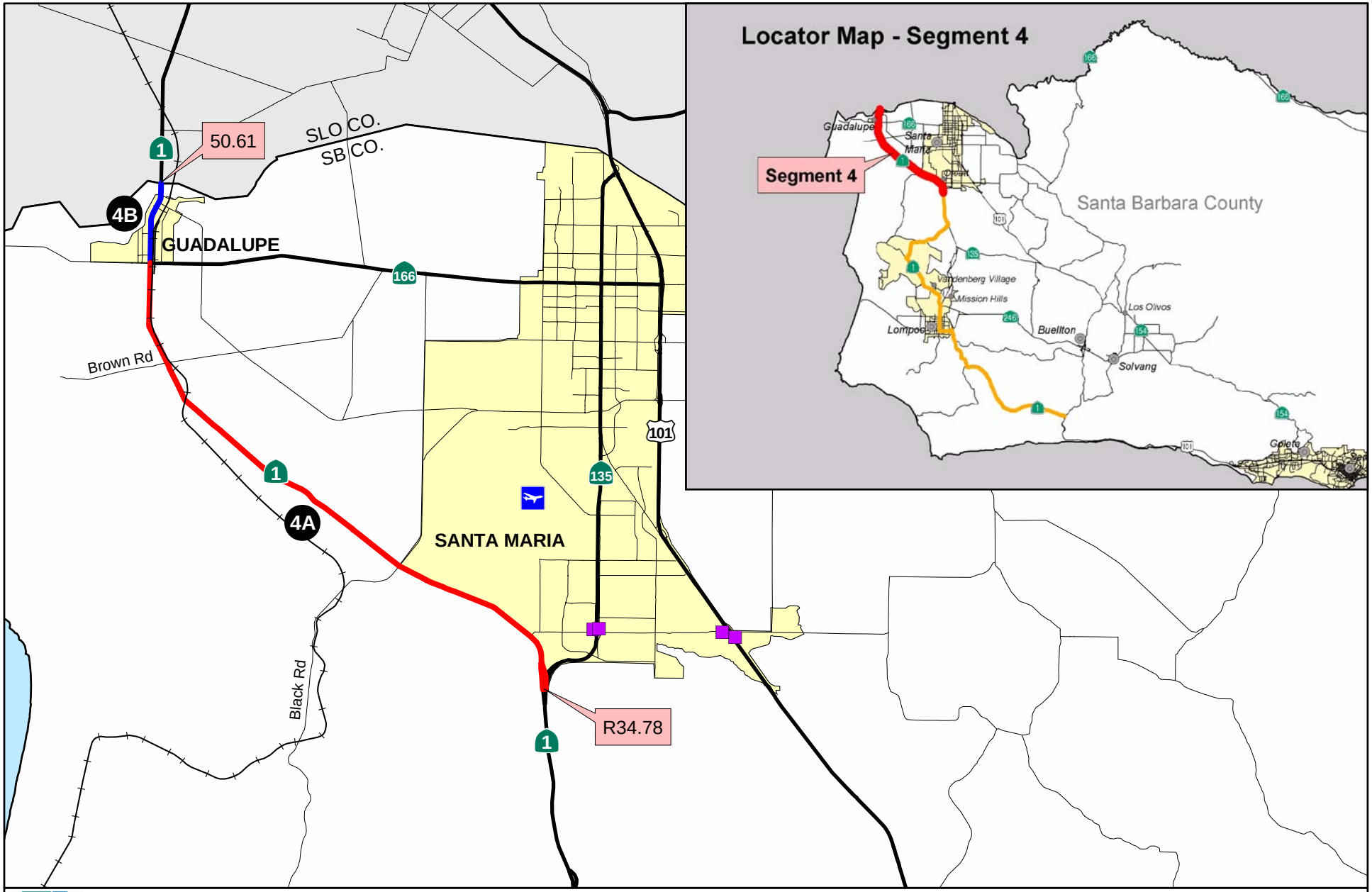
SEGMENT FEATURES		
Environmental Constraints:	▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ SMOOTH, Clean Air Express, Guadalupe Flyer/Shuttle	▪ Pacific Coast Bike Route ▪ Rail Station in Guadalupe
Land Uses along Corridor :	▪ Rural, open space, agriculture ▪ Urban (City of Guadalupe)	
Major Traffic Generators:	▪ Community of Orcutt ▪ Agricultural operations ▪ City of Guadalupe	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 4 is presently operating at peak LOS D and is projected to remain at peak LOS D through year 2025.

RECOMMENDED ACTIONS:

- Widen lanes and shoulders to meet standards.
- Add passing lanes or turnouts to improve operations.
- Provide channelization for turns.
- Improve local circulation in Guadalupe.
- Provide elevated railroad crossing on SR 166 or a parallel alignment in Guadalupe for reliable access between Route 1 and Santa Maria
- Widen Santa Maria River Bridge north of Guadalupe.



Caltrans
District 5
System
Planning

0 1 2 3 4 5 Miles

Sub-Segment 4A - PM R34.78/49.20

Sub-Segment 4B - PM 49.20/50.61

Rail

Urban Area

Airport

Park & Ride Lot

State Route 1
Santa Barbara County
Segment 4
PM R34.78/50.61

Caltrans District 5 - Segment Data Sheet

Santa Barbara County	Route	1	Segment / (Sub-segment)	4A

Segment / sub-segment Location

PM start	PM end	Length	Description
R34.78	49.20	14.42	Orcutt Expressway to SR 166

Existing Roadbed Information

Number of lanes	2 to 4	Lane Width	11 to 12 ft.
Terrain	Flat	ROW Width	60 to 100 ft.
Signalized Intersections	None	Shoulder Width	1 to 8 ft.
Bicycle Facilities	Class III	Median Width	0 to 99 ft.

Route Designations

Functional Classification	Urban Minor Arterial & Rural Minor Arterial
Facility Type:	Expressway and Conventional Highway
Trucking Designations	CA Legal 40' KPRA
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	3,200	3,800			C	C
	ADT Ann. Growth (2002-2025)		0.75%	Directional Split		55%
	Peak Hour Volume (2002)		400	Peak Hour Truck		5%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	1.19	1.11	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.094	0.041	
Fatality & Injury Collision Rate	0.56	0.53	

*Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS C / 4-lane conventional highway

Comments: ***Widen non-standard travel lanes and shoulders; provide passing lanes or turn-outs; provide acceleration and deceleration lanes at intersecting roads***

Caltrans District 5 - Segment Data Sheet

Santa Barbara County	Route	1	Segment/(Sub-segment)	4B

Segment/sub-segment Location

PM start	PM end	Length	Description
49.20	50.61	1.41	SR 166 to Santa Barbara/San Luis Obispo County Line

Existing Roadbed Information

Number of lanes	2 to 4	Lane Width	12 ft.
Terrain	Flat	ROW Width	100 ft.
Signalized Intersections	None	Shoulder Width	2 to 9 ft.
Bicycle Facilities	Class II/III	Median Width	0 ft.

Route Designations

Functional Classification	Rural Minor Arterial and Urban Principal Arterial
Facility Type:	Conventional Highway
Trucking Designations	CA Legal 40' KPRA
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	5,000	6,000			A	A
	ADT Ann. Growth (2002-2025)		0.80%	Directional Split		55%
	Peak Hour Volume (2002)		500	Peak Hour Truck		4%

	Location	Delay Time (seconds)		LOS	
Signalized Intersection Analysis		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	1.52	2.87	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.000	0.032	
Fatality & Injury Collision Rate	0.13	1.27	

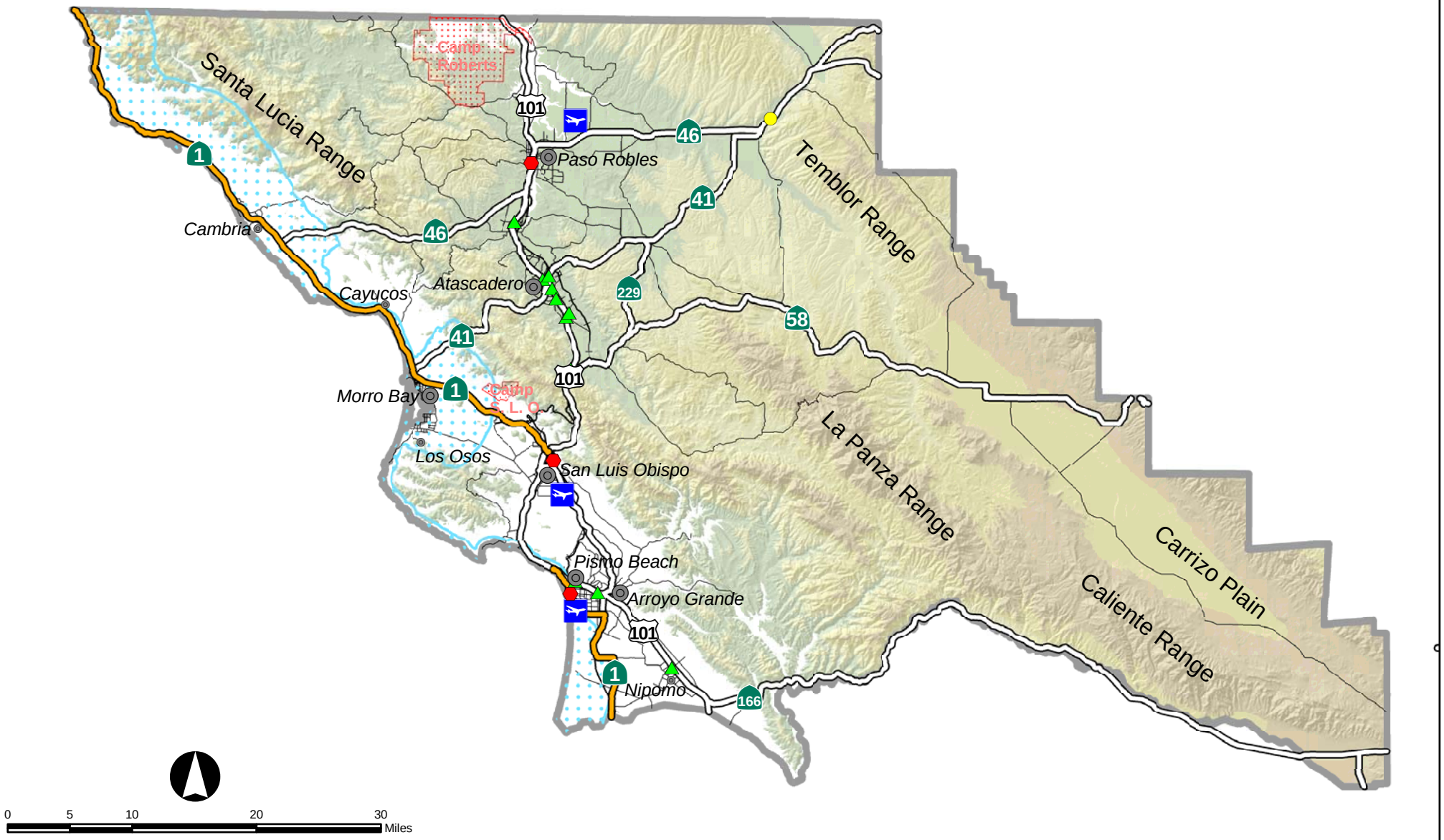
*Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS C /2 and 4-lane conventional highway

Comments: ***Improve local circulation; provide standard width shoulders; widen Santa Maria River bridge at Guadalupe.***

APPENDIX B-2: Maps and Segment Data
San Luis Obispo County



Caltrans
District 5
System
Planning

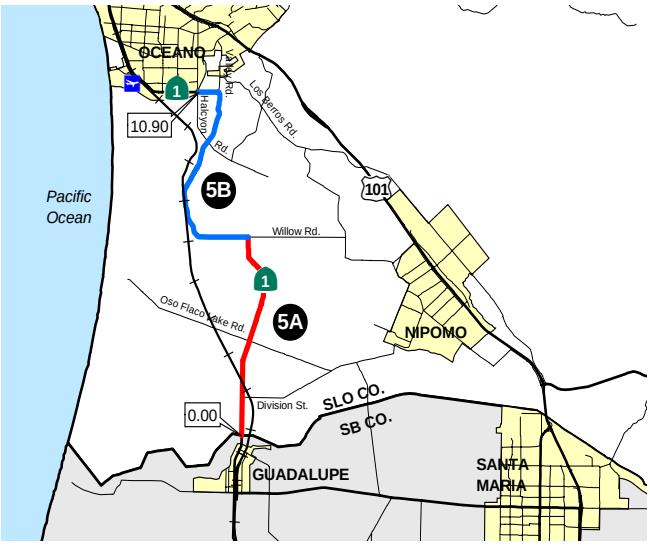
Legend

- Coastal Zone
- Military Base
- State Route 1
- Rail
- Airports
- Park & Ride Lots
- Rest Stop
- Rail Stops

San Luis Obispo County Development Centers

ROUTE 1 – SAN LUIS OBISPO COUNTY – SEGMENT 5

SEGMENT SPECIFICATIONS			
Segment	**Begin**	**End**	**Description**
5A	0.00	5.07	Santa Barbara/San Luis Obispo County Line to Willow Road
5B	5.07	10.90	Willow Road to Halcyon Road
Segment Concept : LOS C/D: Two-lane Conventional Highway			



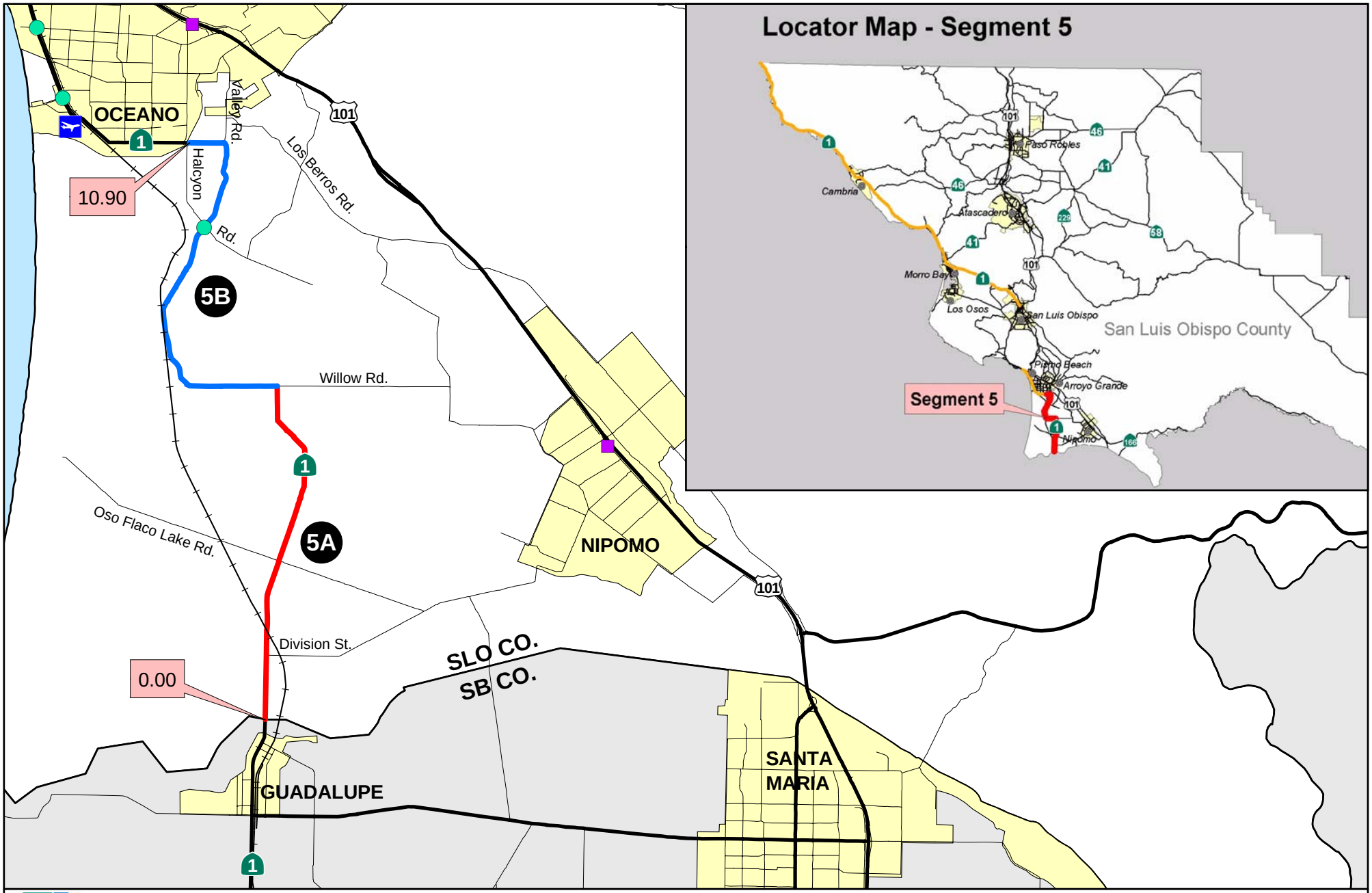
SEGMENT FEATURES		
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Central Coast Area Transit	▪ Amtrak Stations in Guadalupe and Grover Beach ▪ Pacific Coast Bike Route
Land Uses along Corridor :	▪ Agriculture ▪ Eucalyptus groves ▪ Scattered home sites	
Major Traffic Generators:	▪ Guadalupe Oil Field ▪ Agricultural operations ▪ Urban-type development ▪ Union Oil	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 5 is presently operating at peak LOS C, but is projected to reach peak LOS D by year 2025.

RECOMMENDED ACTIONS:

- Improve vertical and horizontal alignments.
- Provide standard width travel lanes and shoulders
- Consolidate driveways to limit access points.
- Provide channelization for turns
- Support extension of area county road(s) to US 101.
- Widen Santa Maria River Bridge north of Guadalupe.



Caltrans
Caltrans District 5 System Planning

0 1 2 3 4 5 Miles

Segment 5
Rail
Urban Area
Airport
Park & Ride Lot
Signalized Intersection

State Route 1
San Luis Obispo County
Segment 5
PM 0.00/10.90

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	1	Segment/(Sub-segment)	5A

Segment/sub-segment Location

PM start	PM end	Length	Description
0.00	5.07	5.07	Santa Barbara/San Luis Obispo County Line to Willow Road

Roadbed Information

Number of lanes	2	Lane Width	10 to 14 ft.
Terrain	Flat/Rolling	ROW Width	60 ft.
Signalized Intersections	None	Shoulder Width	0 to 9 ft.
Bicycle Facilities	Class III	Median Width	0 ft.

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Conventional Highway
Trucking Designations	Advisory KPRA under 30' & CA Legal 40' KPRA
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	5,500	9,000	0.20	0.33	C	C
	ADT Ann. Growth (2002-2025)		1.02%	Directional Split		60%
	Peak Hour Volume (2002)		500	Peak Hour Truck		11%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	1.29	1.37	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.068	0.030	
Fatality & Injury Collision Rate	0.48	0.66	

*Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS C/ 2-lane conventional highway

Comments: ***Improve vertical and horizontal alignments; provide standard width travel lanes and shoulders; provide channelization for turns; minimize points of access to highway.***

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	1	Segment / (Sub-segment)	5B

Segment/sub-segment Location

PM start	PM end	Length	Description
5.07	10.90	5.83	Willow Road to Halcyon Road

Roadbed Information

Number of lanes	2	Lane Width	10 to 14 ft.
Terrain	Flat/Rolling	ROW Width	60 ft.
Signalized Intersections	1	Shoulder Width	0 to 8 ft.
Bicycle Facilities	Class III	Median Width	0 to 12 ft.

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Conventional Highway
Trucking Designations	Advisory KPRA under 30' & CA Legal 40' KPRA
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	5,500	9,500	0.27	0.44	C	D
	ADT Ann. Growth (2002-2025)		1.02%	Directional Split		60%
	Peak Hour Volume (2002)		600	Peak Hour Truck		11%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	SR 1/Halcyon Road (East)			E (1999)*	

*South County Circulation Study, 2000

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	2.16	1.37	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.030	0.030	
Fatality & Injury Collision Rate	0.87	0.66	

*Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS C/D/ conventional highway

Comments: ***Improve vertical and horizontal alignments; consolidate driveways to limit access points; provide Class II bicycle facilities throughout; support transit-oriented development.***

ROUTE 1 – SAN LUIS OBISPO COUNTY – SEGMENT 6

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
6	10.90	16.77	Halcyon Rd to US Route 101 in Pismo Beach
Segment Concept : LOS C/D: Two- to four-lane Conventional Highway			

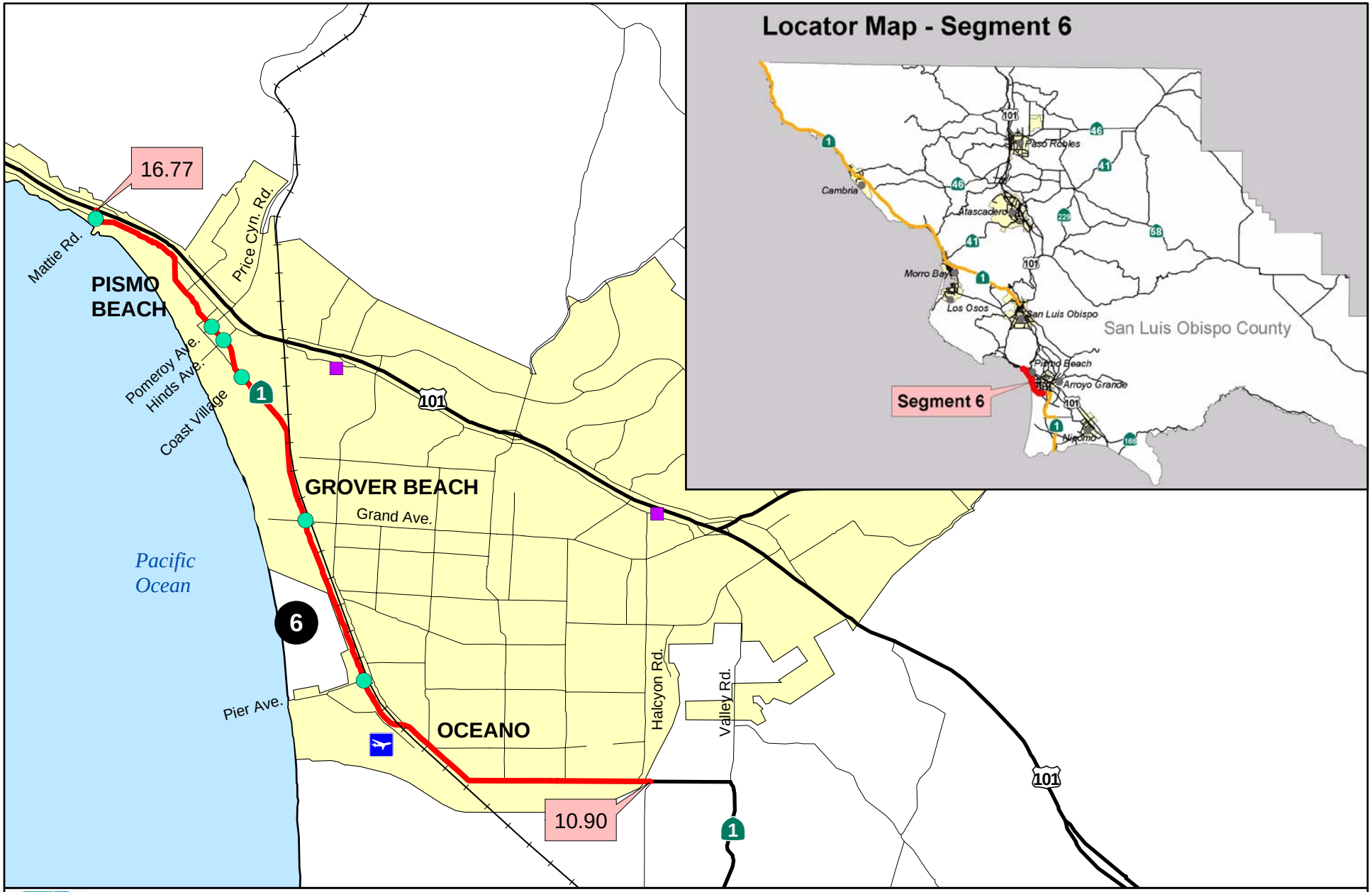
SEGMENT FEATURES		
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Central Coast Area Transit	▪ AMTRAK at Grover Beach ▪ Pacific Coast Bike Route
Land Uses along Corridor :	▪ Agricultural ▪ Urban transitional ▪ Recreational ▪ Urban Commercial	
Major Traffic Generators:	▪ Agricultural Operations ▪ Oceano Dunes State Vehicular Recreation Area ▪ Pismo Beach State Beach ▪ Urban Activities in Oceano, Grover Beach, and Pismo Beach	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 6 is presently operating at peak LOS E and is projected to reach LOS F by year 2025.

RECOMMENDED ACTIONS:

- Widen to four lanes where feasible.
- Improve local circulation and parking.
- Minimize and consolidate access points.
- Provide Class II bike lanes throughout.
- Improve pedestrian access.
- Provide standard width travel lanes and shoulders.



Caltrans
District 5
System
Planning

0 0.5 1 1.5 2 Miles

Segment 6
Rail
Urban Area
Airport
Park & Ride Lot
Signalized Intersection

State Route 1
San Luis Obispo County
Segment 6
PM 10.90/16.77

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	1	Segment/(Sub-segment)	6

Segment/sub-segment Location

PM start	PM end	Length	Description
10.90	16.77	5.87	Halcyon Road to South Junction with US Route 101(Pismo Beach)

Roadbed Information

Number of lanes	2	Lane Width	10 to 13 ft.
Terrain	Flat/Rolling	ROW Width	60 ft.
Signalized Intersections	6	Shoulder Width	4 to 15 ft.
Bicycle Facilities	Class II/III	Median Width	0 to 14 ft.

Route Designations

Functional Classification	Urban Principal Arterial & Urban Minor Arterial
Facility Type:	Conventional Highway
Trucking Designations	CA Legal 40' KPRA
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	12,200	24,300	0.52	>1.00	E	F
	ADT Ann. Growth (2002-2025)		3.04%	Directional Split		60%
	Peak Hour Volume (2002)		1,400	Peak Hour Truck		8%

	Location	Delay Time (seconds)		LOS	
Signalized Intersection Analysis		2002	2025	2002	2025
	Pier, Grand, Coast Village, Hinds, Pomeroy, Mattie	~ No data. No significant issues. ~			

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	2.01	2.99	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.000	0.013	
Fatality & Injury Collision Rate	0.87	1.20	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS C/D 2 to 4-lane conventional highway

Comments: ***Widen to four lanes where feasible; improve local circulation to reduce congestion on SR 1; provide Class II bicycle facilities along entire segment; improve pedestrian access; enhance shuttle service for motels, restaurants, shopping, and beach area destinations.***

ROUTE 1 – SAN LUIS OBISPO COUNTY – SEGMENT 7

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
7	16.77	17.80	U.S. Route 101 Ramps at Santa Rosa Street in San Luis Obispo to City Limits at Highland Drive
Segment Concept : LOS D: (See Recommended Actions, below)			

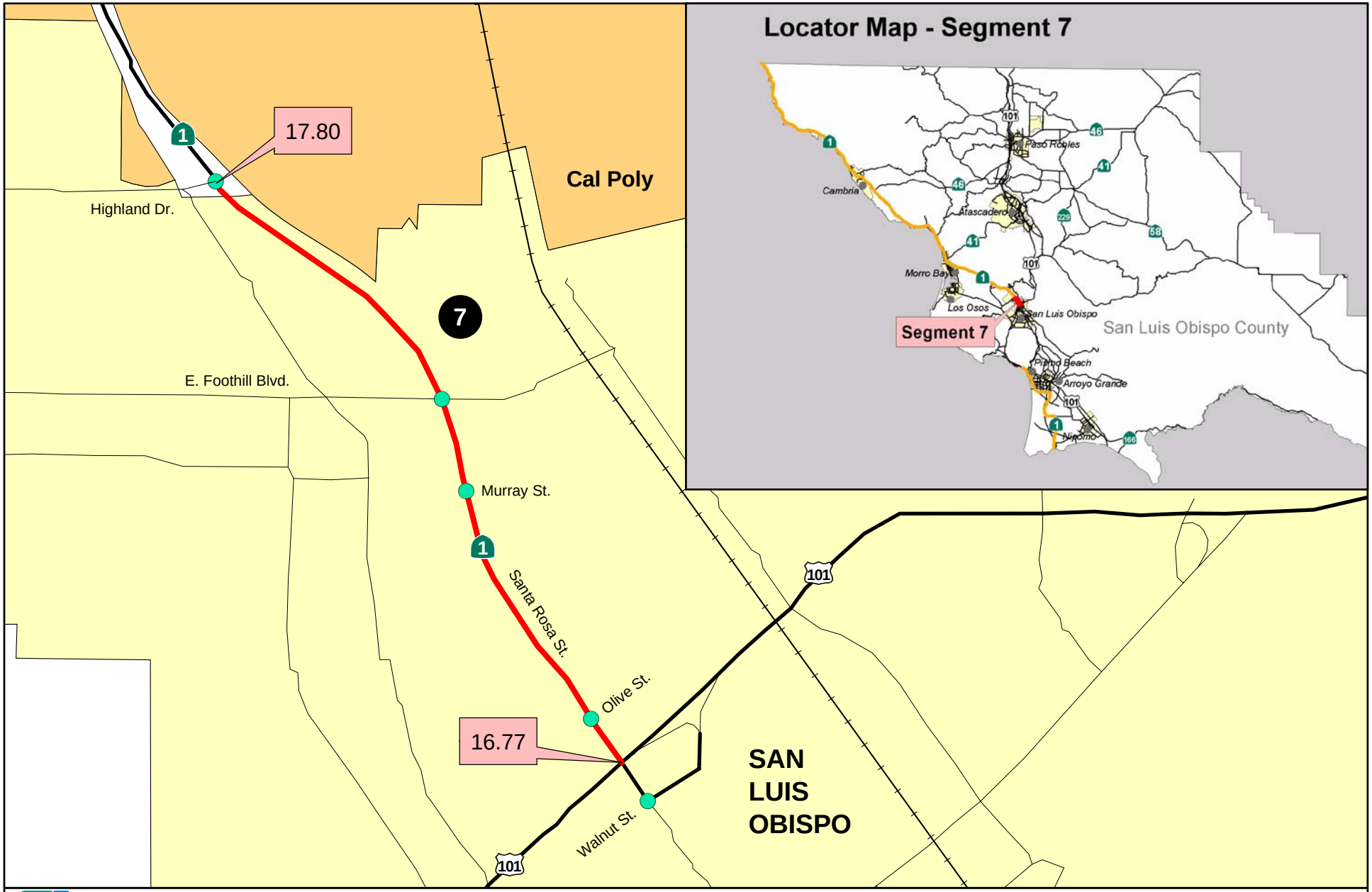
SEGMENT FEATURES		
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Central Coast Area Transit	▪ SLO Transit ▪ Pacific Coast Bike Route
Land Uses along Corridor :	▪ Urban Commercial and Office ▪ Hospital	
Major Traffic Generators:	▪ California State Polytechnic University ▪ Restaurants, Professional Offices, and other Urban Facilities ▪ Sierra Vista Hospital ▪ Route 101 Ramps	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 7 is presently operating at peak LOS E and is projected to operate at peak LOS F by the year 2025.

RECOMMENDED ACTIONS:

- Evaluate potential for widening to six lanes
- Evaluate potential for grade separation at Foothill Boulevard intersection
- Improve US 101 interchange
- Evaluate bypass/relinquishment of Segments 7 and 8A (alternate route from Route 101 to Cuesta College)
- Improve pedestrian access
- Reduce demand by encouraging and improving alternative modes of transportation.
- Improve local circulation.
- Synchronize traffic signals.
- Consider local CSS proposals.
- Consider CMS and HAR on US 101 re: SR 1 road conditions.
- Implement Intelligent Transportation System components from Central Coast Deployment Plan



Caltrans
District 5
System
Planning

0 0.1 0.2 0.3 Miles

Segment 7
Rail
Signalized Intersection
Urban Area
Cal Poly

State Route 1
San Luis Obispo County
Segment 7
PM 16.77/17.80

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	1	Segment/(Sub-segment)	7

Segment/sub-segment Location

PM start	PM end	Length	Description
16.77	17.80	1.03	Santa Rosa Street from US Route 101 North (San Luis Obispo) to Highland Drive

Roadbed Information

Number of lanes	4	Lane Width	11 to 17.5 ft.
Terrain	Flat/Rolling	ROW Width	100 ft.
Signalized Intersections	Five	Shoulder Width	7 to 8 ft.
Bicycle Facilities	Class II/III	Median Width	4 to 25 ft.

Route Designations

Functional Classification	Urban Minor Arterial & Urban Principal Arterial
Facility Type:	Conventional Highway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	41,000	46,500			Not applicable. Intersections control LOS.*	
	ADT Ann. Growth (2002-2025)		2.69%	Directional Split		60%
	Peak Hour Volume (2002)		3,100	Peak Hour Truck		3%

* SLOCOG's Vision 2025 indicates segment LOS "E" in 2004, with LOS "F" forecast for 2025.

	Location	Delay Time (seconds)		LOS	
Signalized Intersection Analysis		2002	2025	2002	2025
	Walnut, Olive, Murray, Highland	~ no data ~			
	Foothill	~ LOS E - known peak hour delay ~			

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	6.56	2.11	Rates are incidents per million vehicle miles for 3-year period from:
Fatality Collision Rate	0.000	0.015	
Fatality & Injury Collision Rate	2.25	0.94	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS D

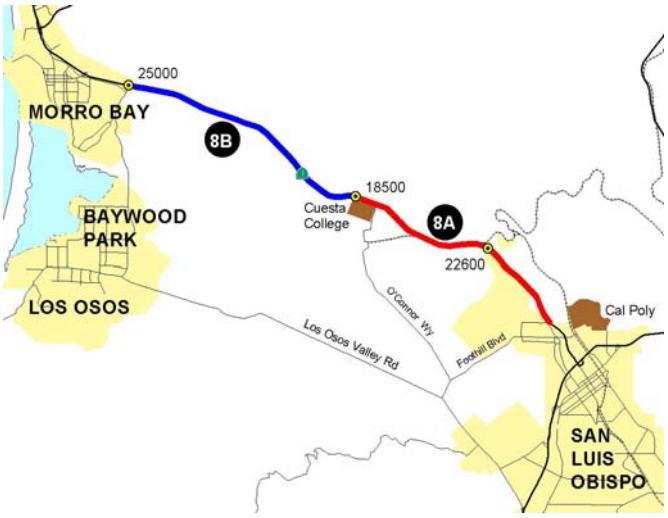
Comments: ***Evaluate potential for widening to 6 lanes with grade separation at Foothill Boulevard intersection; improve interchange with US 101; evaluate by-pass/relinquishment; improve pedestrian access; improve local circulation; synchronize signals; consider CMS or HAR for NB US 101 to advise of road conditions; consider locally-sponsored CSS projects.***

ROUTE 1 – SAN LUIS OBISPO COUNTY – SEGMENT 8

SEGMENT SPECIFICATIONS

Segment	Begin	End	Description
8A	17.8	22.65	San Luis Obispo City Limits to Cuesta College at Education Drive
8B	22.65	27.88	Cuesta College at Education Drive to South Bay Boulevard in Morro Bay

Segment Concept : LOS C: Four-lane Expressway and Four-lane Freeway



SEGMENT FEATURES

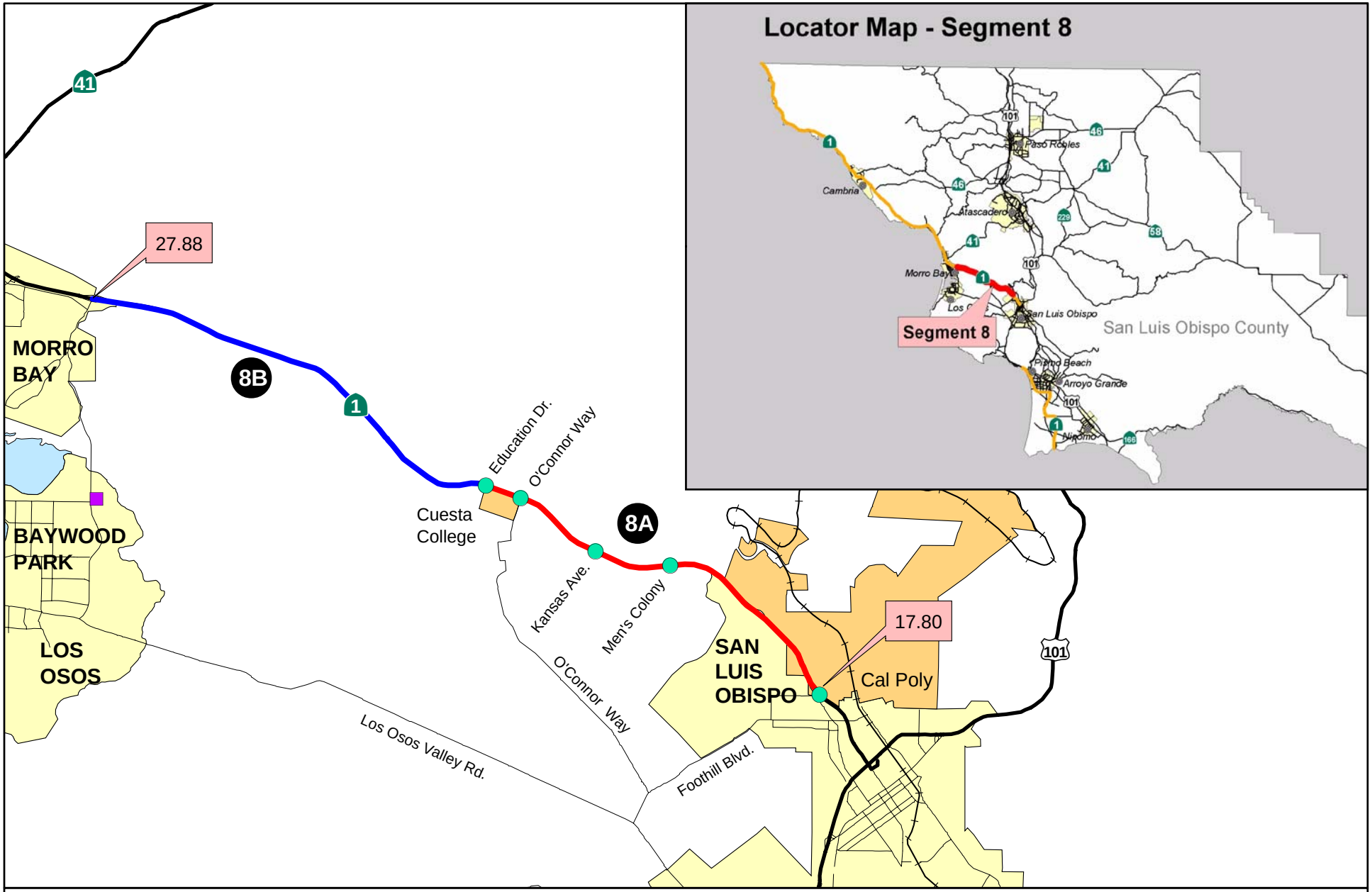
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Central Coast Area Transit	▪ Pacific Coast Bike Route
Land Uses along Corridor :	▪ Educational Facilities ▪ Public Facilities	▪ Military Base ▪ Recreation ▪ Agriculture
Major Traffic Generators:	▪ Cuesta College ▪ Camp San Luis ▪ Regional Park and Golf Course	▪ School District Offices ▪ City of Morro Bay

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 8 is presently operating at peak LOS A/B and is projected to decline slightly to LOS A/B to B by the year 2025.

RECOMMENDED ACTIONS:

- Minimize and consolidate access points.
- Convert conventional to expressway and expressway to freeway where feasible.
- Enhance intermodal facilities and services (Central Coast Area Transit).
- Reduce demand by encouraging and improving alternative modes of transportation.
- Cooperate in implementation of San Luis Obispo North Coast Byway Enhancement Plan where feasible.
- Evaluate relinquishment of Segments 7 and 8A and adoption of alternative route from Route 101 to Cuesta College.



Caltrans District 5 System Planning

0 1 2 3 Miles

Sub-Segment 8A - PM 17.80/22.65

Sub-Segment 8B - PM 22.65/27.88

Rail

Urban Area

Signalized Intersection

Park & Ride Lot

State Route 1
San Luis Obispo County
Segment 8
PM 17.80/27.88

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	1	Segment/(Sub-segment)	8A

Segment/sub-segment Location

PM start	PM end	Length	Description
17.80	22.65	4.85	Highland Drive to Education Drive (Cuesta College)

Roadbed Information

Number of lanes	4	Lane Width	11 to 16 ft.
Terrain	Flat/Rolling	ROW Width	150 ft.
Signalized Intersections	4	Shoulder Width	8 ft.
Bicycle Facilities	Class III	Median Width	6 to 25 ft.

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Conventional Highway & Expressway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	23,800	30,900			A/B	B
	ADT Ann. Growth (2002-2025)		1.14%	Directional Split		60%
	Peak Hour Volume (2002)		2,200	Peak Hour Truck		3%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	California Men's Colony	~ no data ~			
	Kansas Avenue	~ no data ~			
	O'Connor Way	~ no data ~			
	Education Drive	~ no data ~			

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.94	1.65	Rates are incidents per million vehicle miles for 3-year period from:
Fatality Collision Rate	0.032	0.017	
Fatality & Injury Collision Rate	0.34	0.61	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS C/ 4-lane expressway

Comments: ***Minimize and consolidate access points; convert conventional to expressway and expressway to freeway where feasible.***

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	1	Segment/(Sub-segment)	8B

Segment/sub-segment Location

PM start	PM end	Length	Description
22.65	27.88	5.23	Education Drive (Cuesta College) to South Bay Boulevard (Morro Bay)

Roadbed Information

Number of lanes	4	Lane Width	11 to 16 ft.
Terrain	Flat/Rolling	ROW Width	150 ft.
Signalized Intersections	None	Shoulder Width	7 to 8 ft.
Bicycle Facilities	Class III	Median Width	6 to 25 ft.

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Conventional Highway & Expressway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	18,000	22,900			A/B	A/B
	ADT Ann. Growth (2002-2025)		0.65%	Directional Split		60%
	Peak Hour Volume (2002)		1,700	Peak Hour Truck		3%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.50	0.62	Rates are incidents per million vehicle miles for 3-year period from:
Fatality Collision Rate	0.000	0.016	
Fatality & Injury Collision Rate	0.19	0.28	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS C/4-lane freeway

Comments: ***Upgrade to 4-lane freeway as needed***

ROUTE 1 – SAN LUIS OBISPO COUNTY – SEGMENT 9

SEGMENT SPECIFICATIONS

Segment	Begin	End	Description
9A	27.88	32.10	South Bay Boulevard to N/O Yerba Buena Street in Morro Bay
9B	32.10	R36.80	N/O Yerba Buena Street in Morro Bay to N/O Cayucos Creek Road
9C	R36.80	45.99	N/O Cayucos Creek Road to SR 46
Segment Concept : LOS C/D: Four-lane freeway/expressway and two-lane expressway			

SEGMENT FEATURES

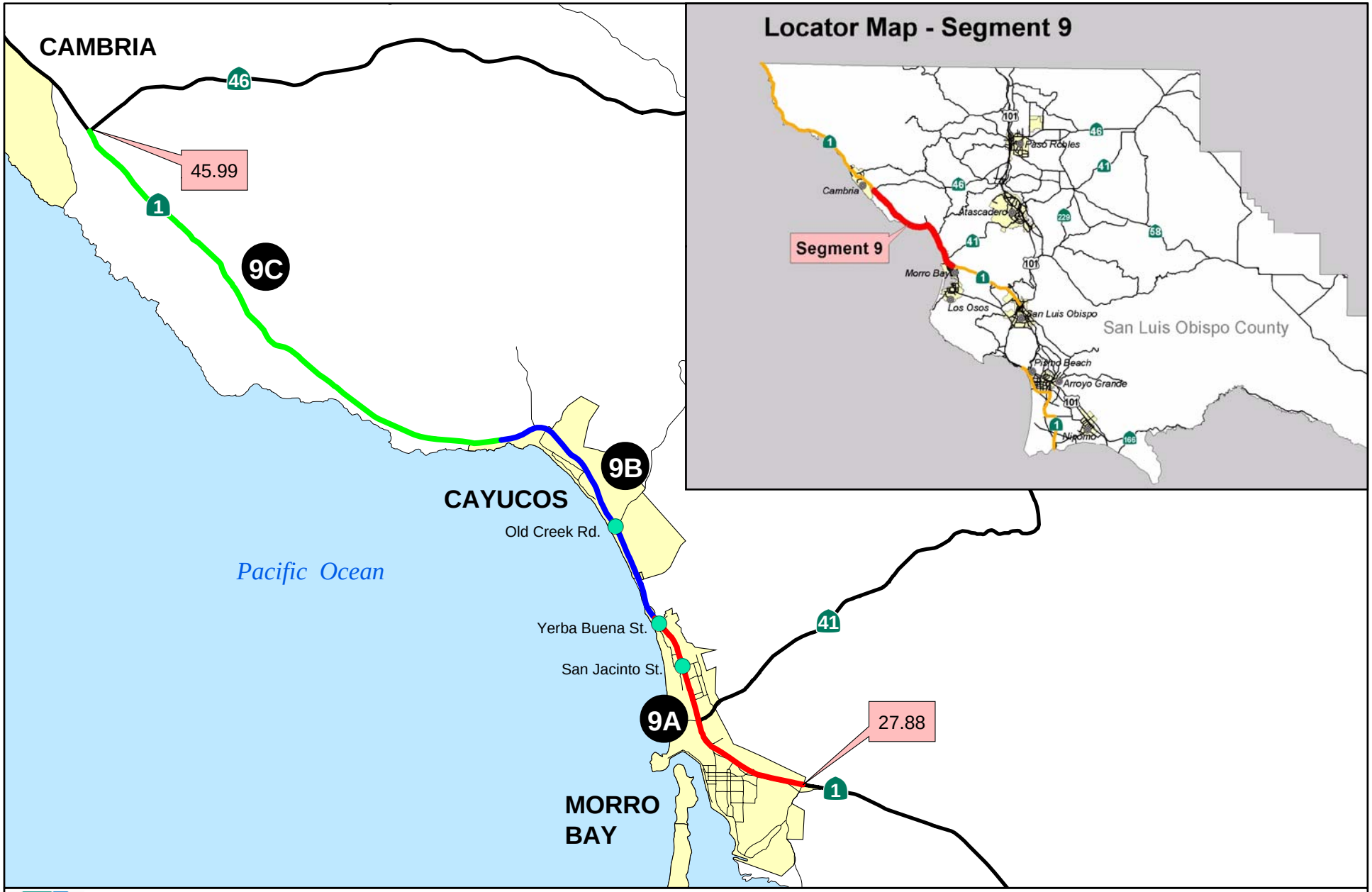
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat	▪ Geologic and Seismic ▪ Archaeological and cultural resources ▪ Aesthetics
Multimodal Facilities:	▪ Central Coast Area Transit	▪ Pacific Coast Bike Route
Land Uses along Corridor :	▪ Residential ▪ Commercial	▪ Agricultural ▪ Open Space
Major Traffic Generators:	▪ Morro Bay ▪ Beaches ▪ Cayucos	▪ Residential ▪ Recreational

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 9 is presently operating at peak LOS A/D and is projected to remain at peak LOS A/D through year 2025.

RECOMMENDED ACTIONS:

- Sub-segments 9A and 9B: consolidate access to convert 4-lane expressway sections to freeway.
- Improve interchange with SR 41 (and Main Street) in Morro Bay
- Sub-segment 9C: minimize new access and consolidate existing access where feasible.
- Sub-segment 9C: continue to evaluate need for passing lanes
- Reduce demand by encouraging and improving alternative modes of transportation.
- Cooperate in implementation of San Luis Obispo North Coast Byway Enhancement Plan where feasible.
- Provide CMS south of SR 46 to advise of SR 1 conditions between Cambria and Carmel.



Caltrans
District 5
System
Planning

0 1 2 3 4 Miles

Sub-Segment 9A - PM 27.88/32.10

Sub-Segment 9B - PM 32.10/36.80

Sub-Segment 9C - PM 36.80/45.99

Urban Area

Signalized Intersection

State Route 1
San Luis Obispo County
Segment 9
PM 27.88/45.99

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	1	Segment/(Sub-segment)	9A

Segment/sub-segment Location

PM start	PM end	Length	Description
27.88	32.10	4.22	South Bay Boulevard (Morro Bay) to Morro Bay North Urban Limits

Roadbed Information

Number of lanes	4	Lane Width	12 ft.
Terrain	Flat	ROW Width	150 ft.
Signalized Intersections	2	Shoulder Width	5 to 8 ft.
Bicycle Facilities	Class III	Median Width	22 ft.

Route Designations

Functional Classification	Urban Minor Arterial
Facility Type:	Freeway & Expressway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	18,900	23,000			A	A
	ADT Ann. Growth (2002-2025)		0.86%	Directional Split		60%
	Peak Hour Volume (2002)		1,800	Peak Hour Truck		2%

	Location	Delay Time (seconds)		LOS	
Signalized Intersection Analysis		2002	2025	2002	2025
	San Jacinto/Indigo, Yerba Buena	~ No Data ~			

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.68	0.92	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.023	0.011	
Fatality & Injury Collision Rate	0.27	0.37	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS C, 4-lane freeway/expressway

Comments: ***Consolidate access to convert expressway sections to freeway***

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	1	Segment/(Sub-segment)	9B

Segment/sub-segment Location

PM start	PM end	Length	Description
32.10	R36.80	4.70	Morro Bay North Urban Limits to Freeway End N/O Cayucos

Roadbed Information

Number of lanes	4	Lane Width	12 ft.
Terrain	Rolling	ROW Width	150 ft.
Signalized Intersections	1	Shoulder Width	5 to 8 ft.
Bicycle Facilities	Class III	Median Width	22 ft.

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Expressway & Freeway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	11,900	13,400			A	A
	ADT Ann. Growth (2002-2025)		0.52%	Directional Split		55%
	Peak Hour Volume (2002)		1,300	Peak Hour Truck		2%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	Old Creek/Studio	~ No Data ~			

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.56	0.65	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.035	0.020	
Fatality & Injury Collision Rate	0.28	0.30	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS C/ 4-lane freeway/expressway

Comments: ***Consolidate access to convert expressway sections to freeway.***

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	1	Segment/(Sub-segment)	9C

Segment/sub-segment Location

PM start	PM end	Length	Description
R36.80	45.99	9.19	Freeway End N/O Cayucos to SR 46

Roadbed Information

Number of lanes	2	Lane Width	12 ft.
Terrain	Flat/Rolling	ROW Width	100 ft.
Signalized Intersections	None	Shoulder Width	8 ft.
Bicycle Facilities	Class III	Median Width	0 ft.

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Expressway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	7,300	7,900			D	D/E
	ADT Ann. Growth (2002-2025)		0.35%	Directional Split		65%
	Peak Hour Volume (2002)		1,000	Peak Hour Truck		5%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.49	0.60	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.053	0.023	
Fatality & Injury Collision Rate	0.22	0.28	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS C/D/ 2-lane expressway

Comments: ***Continue to evaluate need for passing lanes; consolidate access points; improve vertical and horizontal alignments; install CMS to advise of delays ahead; consider actions in SLONC Enhancement Plan***

ROUTE 1 – SAN LUIS OBISPO COUNTY – SEGMENT 10

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
10A	45.99	48.24	SR 46 to Main Street Exit in Cambria
10B	48.24	58.24	Main Street Exit in Cambria to Entrance to Hearst Monument
10C	58.24	71.34	Entrance to Hearst Monument to San Carpoforo Creek
Segment Concept : LOS D: Two-lane Expressway and Two-lane Conventional Highway			

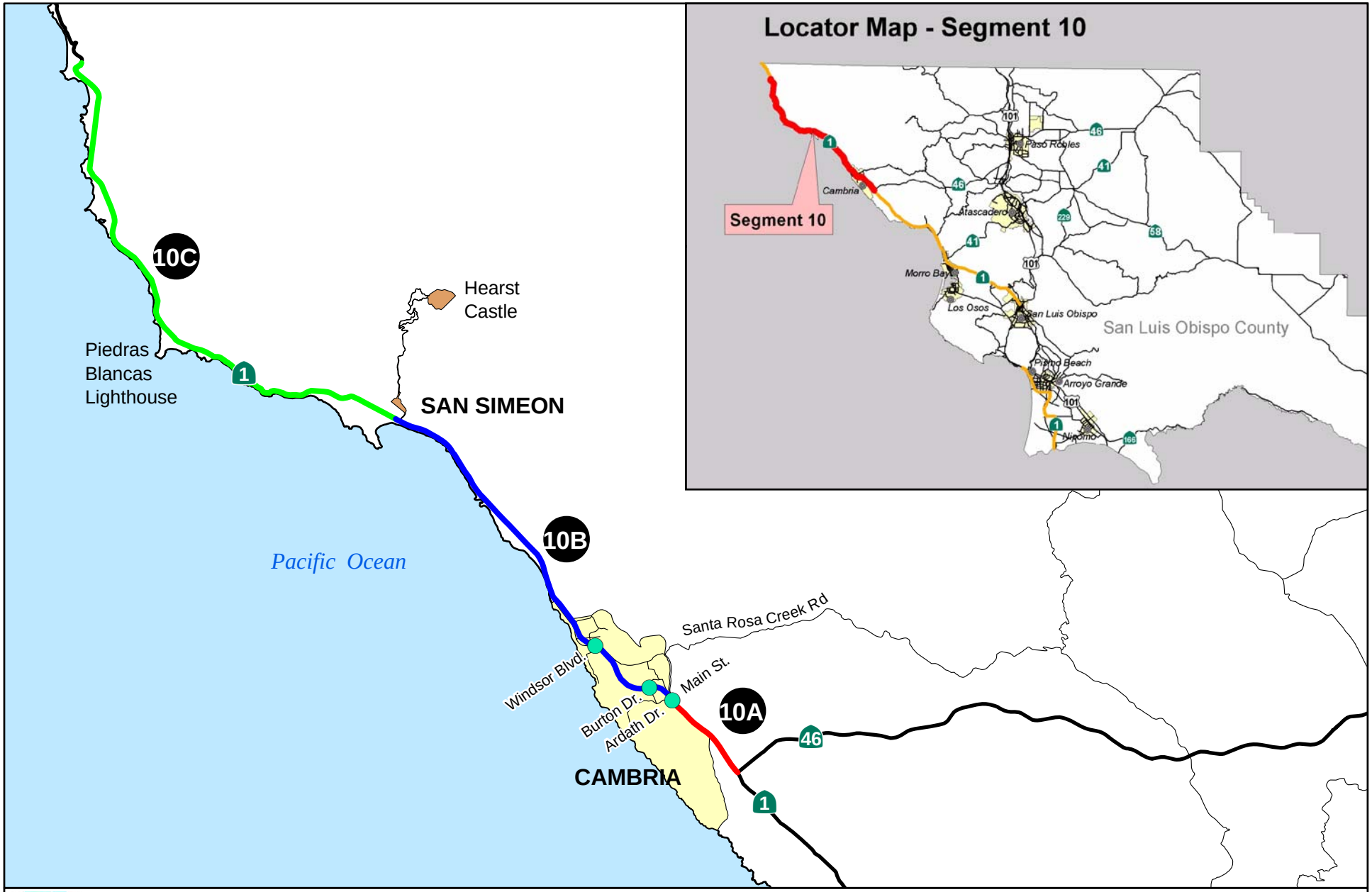
SEGMENT FEATURES		
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Central Coast Area Transit	▪ Pacific Coast Bike Route ▪ California Coastal Trail
Land Uses along Corridor :	▪ Agricultural ▪ Urban residential and commercial	▪ Open space ▪ Recreational
Major Traffic Generators:	▪ Cambria ▪ San Simeon State Park	▪ William R. Hearst Memorial State Beach ▪ Hearst San Simeon State Historic Monument

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 10 is presently operating at peak LOS C/D and is projected to operate at peak LOS D through year 2025.

RECOMMENDED ACTIONS:

- Construct system-wide operational improvements.
- Realign highway where threatened by coastal erosion.
- Reduce demand by encouraging and improving alternative modes of transportation.
- Cooperate in implementation of San Luis Obispo North Coast Byway Enhancement Plan where feasible.



Caltrans District 5 System Planning

0 1 2 3 4 5 Miles

Sub-Segment 10A - PM 45.99/48.24

Sub-Segment 10B - PM 48.24/58.24

Sub-Segment 10C - PM 58.24/71.34

Urban Area

Signalized Intersection

State Route 1
San Luis Obispo County
Segment 10
PM 45.99/71.34

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	1	Segment/(Sub-segment)	10A

Segment/sub-segment Location

PM start	PM end	Length	Description
45.99	48.26	2.25	SR 46 to Main Street in Cambria

Roadbed Information

Number of lanes	2	Lane Width	12 ft.
Terrain	Flat/Rolling	ROW Width	100 ft.
Signalized Intersections	1	Shoulder Width	8 ft.
Bicycle Facilities	Class III	Median Width	0 ft.

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Expressway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	9,000	11,500	0.52	0.59	D	D
	ADT Ann. Growth (2002-2025)		1.07%	Directional Split		65%
	Peak Hour Volume (2002)		1,400	Peak Hour Truck		5%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	Ardath/Main	~ No Data ~			

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.71	0.60	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.045	0.023	
Fatality & Injury Collision Rate	0.40	0.28	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS D / 2-lane expressway

Comments: Consider actions in SLONC Enhancement Plan

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	1	Segment / (Sub-segment)	10B

Segment / sub-segment Location

PM start	PM end	Length	Description
48.26	58.24	9.98	Main Street Exit Cambria to San Simeon

Roadbed Information

Number of lanes	2	Lane Width	12 ft.
Terrain	Rolling	ROW Width	100 ft.
Signalized Intersections	2	Shoulder Width	8 ft.
Bicycle Facilities	Class III	Median Width	0 ft.

Route Designations

Functional Classification	Urban Minor Arterial & Rural Minor Arterial
Facility Type:	Expressway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	6,100	8,500	0.35	0.43	D	D
	ADT Ann. Growth (2002-2025)		1.45%	Directional Split		55%
	Peak Hour Volume (2002)		900	Peak Hour Truck		1%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	Burton, Windsor	~ No Data ~			

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.61	0.70	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.014	0.031	
Fatality & Injury Collision Rate	0.23	0.33	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS D / 2-lane expressway

Comments: ***Realign where threatened by coastal erosion.***

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	1	Segment / (Sub-segment)	10C

Segment / sub-segment Location

PM start	PM end	Length	Description
58.24	71.34	13.10	San Simeon to San Carpoforo Creek

Roadbed Information

Number of lanes	2	Lane Width	9 to 12
Terrain	Rolling	ROW Width	60 to 100 ft.
Signalized Intersections	None	Shoulder Width	4 to 8 ft.
Bicycle Facilities	Class III	Median Width	0 ft

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Conventional Highway
Trucking Designations	Terminal Access Route & Advisory KPRA < 30'
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	3,200	5,200	0.22	0.35	C	D
	ADT Ann. Growth (2002-2025)		1.30%	Directional Split		60%
	Peak Hour Volume (2002)		500	Peak Hour Truck		7%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.51	1.42	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.048	0.031	
Fatality & Injury Collision Rate	0.26	0.68	

* Average collision rates statewide for this type facility

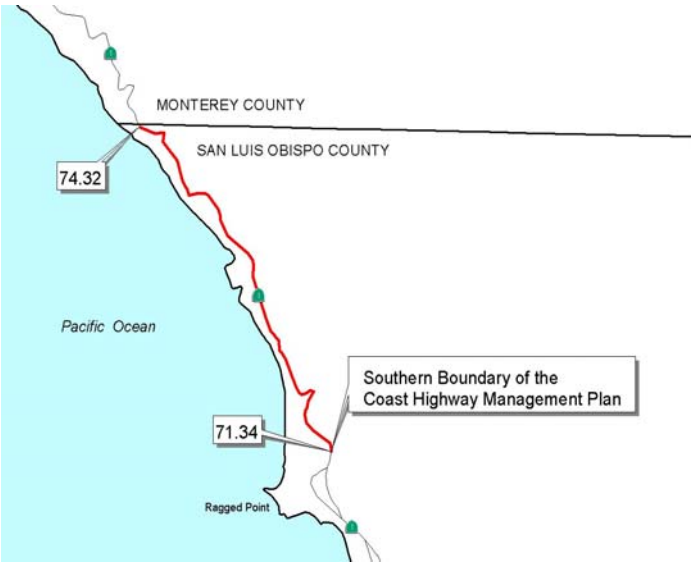
Proposed Concept

Proposed Transportation Concept	LOS D / 2-lane conventional highway

Comments: ***Minimize and consolidate access; provide standard width travel lanes and shoulders; improve vertical and horizontal alignment where feasible; realign where threatened by coastal erosion.***

ROUTE 1 – SAN LUIS OBISPO COUNTY – SEGMENT 11

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
11	71.34	74.32	San Carpoforo Creek to San Luis Obispo/ Monterey County line
Segment Concept : LOS D: Two-lane Conventional Highway			



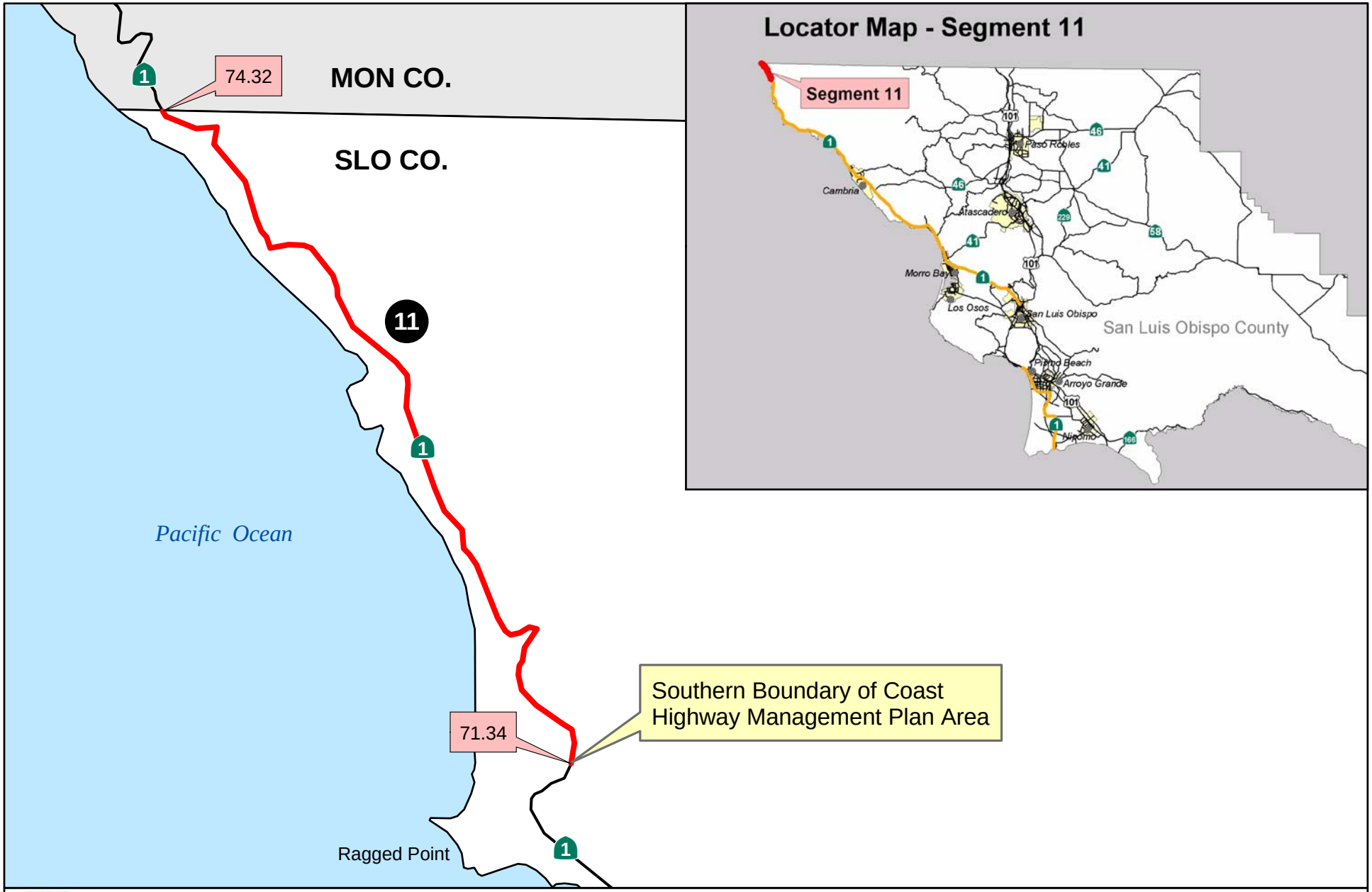
SEGMENT FEATURES		
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Pacific Coast Bike Route	▪ California Coastal Trail
Land Uses along Corridor :	▪ Open space ▪ Recreation	▪ Commercial
Major Traffic Generators:	▪ Big Sur Coast All American Road ▪ Ragged Point	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 11 is presently operating at peak LOS C and is projected to operate at peak LOS D by year 2025.

RECOMMENDED ACTIONS:

- Provide standard width travel lanes and 4-foot shoulders where possible.
- Minimize and consolidate access.
- Evaluate need and provide operational improvements including turn-outs and channelization for turning.
- Implement recommendations of the Coast Highway Management Plan where feasible.
- Cooperate in implementation of San Luis Obispo North Coast Byway Enhancement Plan where feasible.
- Accommodate California Coastal Trail in right-of-way as circumstances require.



Caltrans
District 5
System
Planning

0 0.25 0.5 0.75 1 Miles

Segment 11

State Route 1
San Luis Obispo County
Segment 11
PM 71.34/74.32

Caltrans District 5 - Segment Data Sheet

San Luis Obispo County	Route	1	Segment / (Sub-segment)	11

Segment / sub-segment Location

PM start	PM end	Length	Description
71.34	74.32	2.98	San Carpoforo Creek to San Luis Obispo / Monterey County Line

Roadbed Information

Number of lanes	2	Lane Width	10 ft.
Terrain	Mountainous	ROW Width	60 ft.
Signalized Intersections	None	Shoulder Width	1-2 ft.
Bicycle Facilities	Class III	Median Width	0 ft.

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Conventional Highway
Trucking Designations	Advisory KPRA <30
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	2,600	4,200	0.15	0.24	C	D
	ADT Ann. Growth (2002-2025)		2.09%	Directional Split		60%
	Peak Hour Volume (2002)		400	Peak Hour Truck		1%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide	3-year period evaluated
Total Collision Rate	1.65	1.80	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.118	0.038	
Fatality & Injury Collision Rate	1.18	0.91	

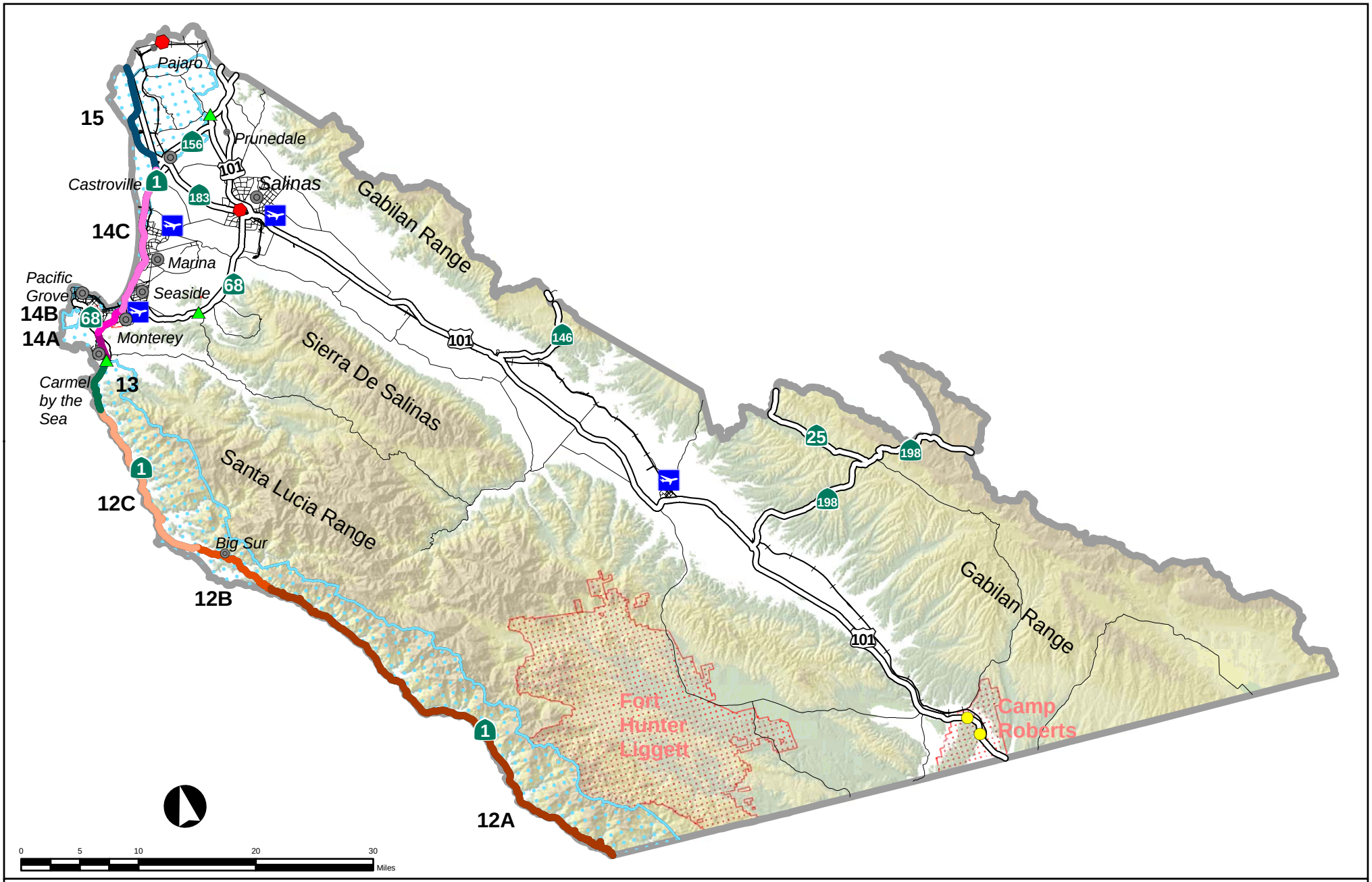
* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS D / 2-lane conventional highway

Comments: ***Standard width travel lanes and 4-foot shoulders where possible; minimize and consolidate access; implement CHMP actions***

APPENDIX B-3: Maps and Segment Data
Monterey County



Caltrans
District 5
System
Planning

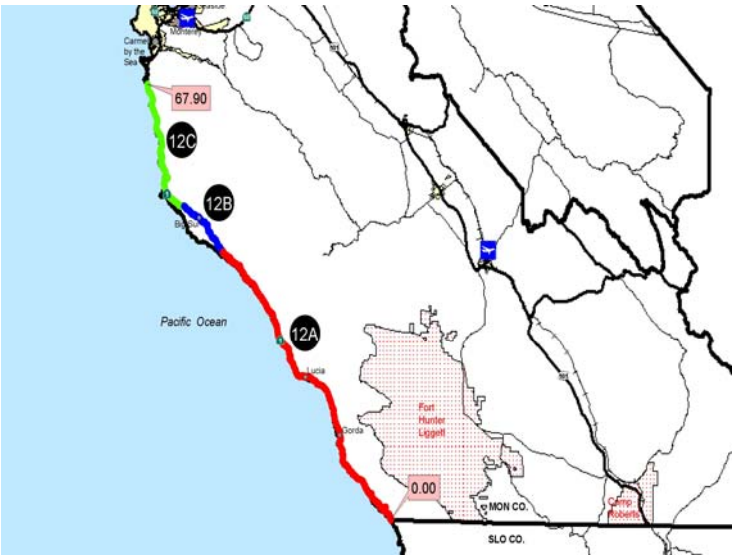
Legend

- Coastal Zone
- Military Base
- State Route 1
- Rail
- Airports
- Park & Ride Lots
- Rest Stops
- Rail Stop

Monterey County Development Centers

ROUTE 1 – MONTEREY COUNTY – SEGMENT 12

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
12A	0.00	43.10	San Luis Obispo/Monterey County Line to Castro Canyon Bridge
12B	43.10	51.20	Castro Canyon Bridge to Andrew Molera State Park
12C	51.20	67.90	Andrew Molera State Park to Malpaso Creek Bridge
Segment Concept : LOS D: Two-lane Conventional Highway			



SEGMENT FEATURES

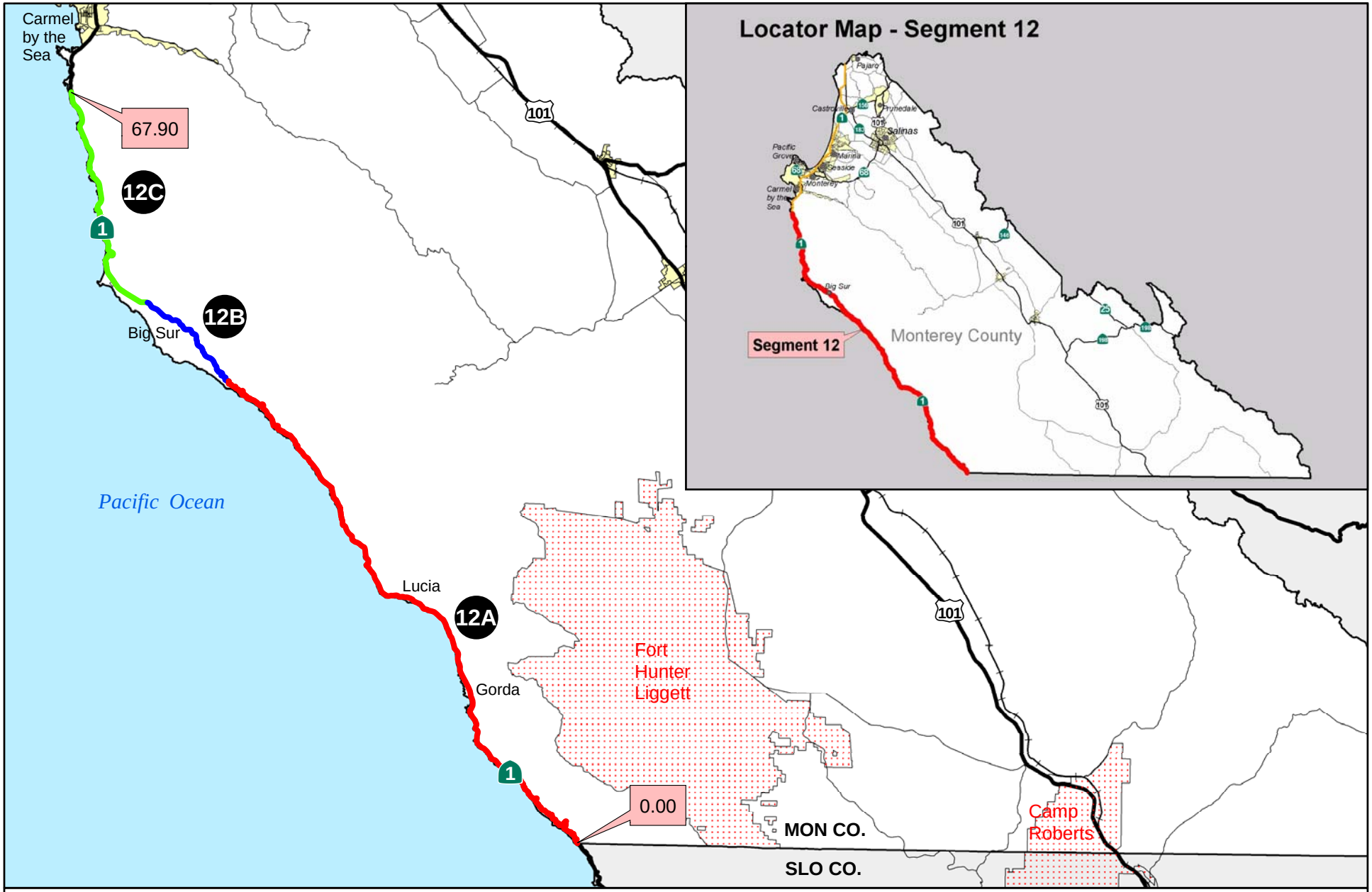
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Monterey-Salinas Transit (south to Big Sur)	▪ Pacific Coast Bike Route ▪ California Coastal Trail
Land Uses along Corridor :	▪ Rural, open space, recreation	
Major Traffic Generators:	▪ Julia Pfeiffer Burns State Park ▪ Big Sur ▪ Andrew Molera State Park ▪ Garrapata State Park	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 12 is presently operating at peak LOS C/E and is projected to LOS C/F by year 2025.

RECOMMENDED ACTIONS:

- Provide standard width travel lanes and 4-foot shoulders where possible.
- Minimize and consolidate access.
- Evaluate need and provide operational improvements including turn-outs and channelization for turning.
- Implement CHMP actions.
- Accommodate California Coastal Trail in right-of-way, as circumstances require.



Caltrans District 5 System Planning

0 5 10 15 20 Miles

Sub-Segment 12A - PM 0.00/43.10

Sub-Segment 12B - PM 43.10/51.20

Sub-Segment 12C - PM 51.20/67.90

Rail

Urban Area

Military Base

State Route 1
Monterey County
Segment 12
PM 0.00/67.90

Caltrans District 5 - Segment Data Sheet

Monterey County	Route	1	Segment/(Sub-segment)	12A

Segment/sub-segment Location

PM start	PM end	Length	Description
0.00	43.10	43.10	San Luis Obispo/Monterey County Line to Castro Canyon Bridge

Existing Roadbed Information

Number of lanes	2	Lane Width	10-14 ft.
Terrain	Rolling/ Mountainous	ROW Width	100 ft.
Signalized Intersections	None	Shoulder Width	0-10 ft.
Bicycle Facilities	Class III	Median Width	0 ft.

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Conventional Highway
Trucking Designations	Advisory KPRA <30
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	2,900	3,400	0.24	0.25	C/E	C/F
	ADT Ann. Growth (2002-2025)		0.66%	Directional Split		62%
	Peak Hour Volume (2002)		500	Peak Hour Truck		1%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.95	1.80	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.031	0.038	
Fatality & Injury Collision Rate	0.48	0.90	

* Average collision rate statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS D/ 2-lane conventional highway

Comments: ***Standard width travel lanes and 4-foot shoulders where possible; minimize and consolidate access; implement CHMP actions***

Caltrans District 5 - Segment Data Sheet

Monterey County	Route	1	Segment/(Sub-segment)	12B

Segment/sub-segment Location

PM start	PM end	Length	Description
43.10	51.20	8.10	Castro Canyon Bridge to Andrew Molera State Park Entrance Drive

Existing Roadbed Information

Number of lanes	Two	Lane Width	10-14 ft.
Terrain	Rolling	ROW Width	100 ft.
Signalized Intersections	None	Shoulder Width	2-6 ft.
Bicycke Facilities	Class III	Median Width	0 ft.

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Conventional Highway
Trucking Designations	Advisory KPRA <30
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	4,700	6,300	0.24	0.32	C/E	D/E
	ADT Ann. Growth (2002-2025)		1.25%	Directional Split		60%
	Peak Hour Volume (2002)		600	Peak Hour Truck		1%

	Location	Delay Time (seconds)		LOS	
Signalized Intersection Analysis		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	1.76	1.48	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.054	0.035	
Fatality & Injury Collision Rate	0.92	0.73	

* Average collision rate statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS D/ 2-lane conventional highway

Comments: ***Standard width travel lanes and 4-foot shoulders where possible; minimize and consolidate access; implement CHMP actions***

Caltrans District 5 - Segment Data Sheet

Monterey County	Route	1	Segment/(Sub-segment)	12C

Segment/sub-segment Location

PM start	PM end	Length	Description
51.20	67.90	16.70	Andrew Molera State Park Entrance Drive to Malpaso Creek Bridge

Existing Roadbed Information

Number of lanes	Two	Lane Width	10-12 ft.
Terrain	Rolling	ROW Width	100 ft.
Signalized Intersections	None	Shoulder Width	1-8 ft.
Bicycle Facilities	Class III	Median Width	0 ft.

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Conventional Highway
Trucking Designations	Advisory KPRA <30
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	5,800	7,500	0.29	0.35	C/	D/
	ADT Ann. Growth (2002-2025)		1.13%	Directional Split		60%
	Peak Hour Volume (2002)		750	Peak Hour Truck		7%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	1.03	1.37	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.022	0.037	
Fatality & Injury Collision Rate	0.46	0.67	

* Average collision rate statewide for this type facility

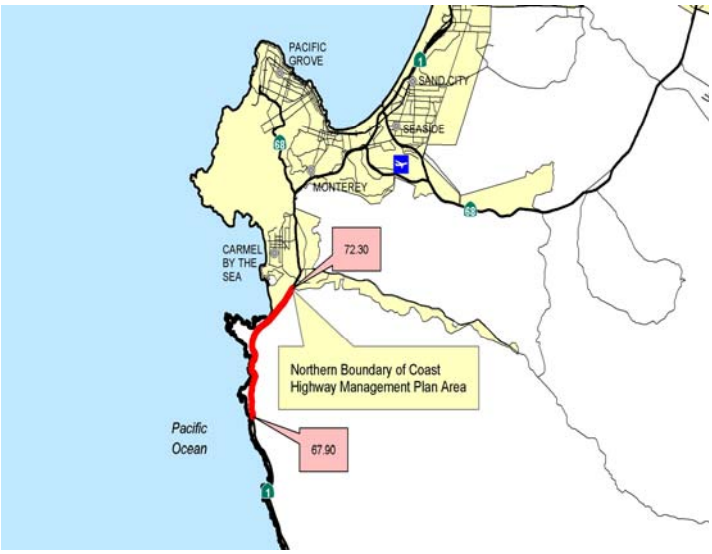
Proposed Concept

Proposed Transportation Concept	LOS D/ 2-lane conventional highway

Comments: ***Standard width travel lanes and 4-foot shoulders where possible; minimize and consolidate access; implement CHMP actions***

ROUTE 1 – MONTEREY COUNTY – SEGMENT 13

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
13	67.90	72.30	Malpaso Creek Bridge to Carmel River Bridge
Segment Concept : LOS D: Two-lane Conventional Highway			



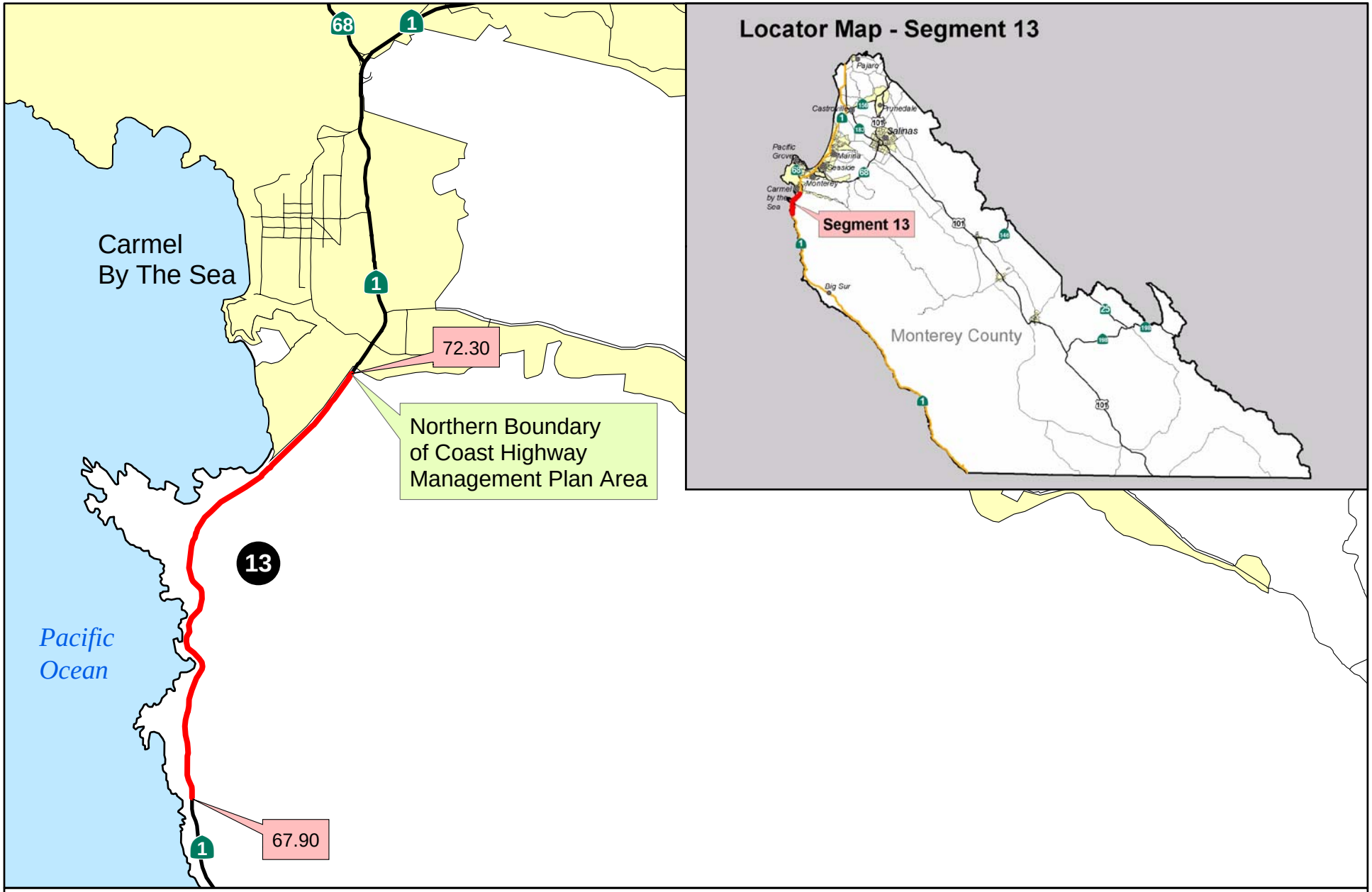
SEGMENT FEATURES		
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Monterey-Salinas Transit	▪ Pacific Coast Bike Route ▪ California Coastal Trail
Land Uses along Corridor :	▪ Rural, open space, recreation	
Major Traffic Generators:	▪ Garrapata State Park ▪ Point Lobos State Reserve ▪ Carmel River State Beach ▪ Monterey Peninsula	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 13 is presently operating at peak LOS D/F and is projected to decline to LOS E/F by the year 2025.

RECOMMENDED ACTIONS:

- Provide standard width travel lanes and 4-foot shoulders where possible.
- Minimize and consolidate access.
- Evaluate need and provide operational improvements including turn-outs and channelization for turning.
- Implement CHMP actions.
- Accommodate California Coastal Trail in right-of-way, as circumstances require.



Caltrans
District 5
System
Planning

0 1 2 3 Miles

Segment 13
Rail
Urban Area
Airport

State Route 1
Monterey County
Segment 13
PM 67.90/72.30

Caltrans District 5 - Segment Data Sheet

Monterey County	Route	1	Segment/(Sub-segment)	13

Segment/sub-segment Location

PM start	PM end	Length	Description
67.90	72.30	4.40	Malpaso Creek Bridge to Carmel River Bridge

Existing Roadbed Information

Number of lanes	Two	Lane Width	12-13 ft.
Terrain	Rollling	ROW Width	100 ft.
Signalized Intersections	None	Shoulder Width	4-8 ft.
Bicycle Facilities	Class III	Median Width	0-11 ft.

Route Designations

Functional Classification	Rural Minor Arterial
Facility Type:	Conventional Highway
Trucking Designations	Advisory KPRA <30
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	13,200	16,400	0.51	0.63	D/F	E/F
	ADT Ann. Growth (2002-2025)		0.95%	Directional Split		60%
	Peak Hour Volume (2002)		1,400	Peak Hour Truck		2%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	1.10	1.41	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.019	0.030	
Fatality & Injury Collision Rate	0.40	0.67	

* Average collision rates statewide for this type facility

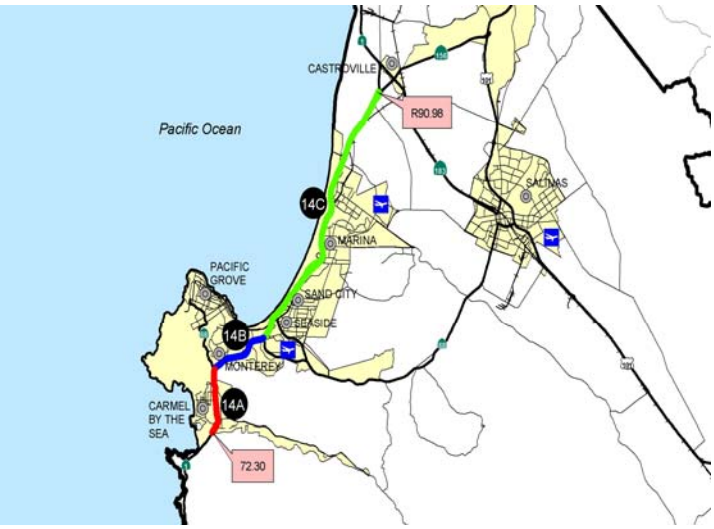
Accident Data

Proposed Transportation Concept	LOS D/ 2-lane conventional highway

Comments: ***Standard width travel lanes and 4-foot shoulders where possible; minimize and consolidate access; implement CHMP actions***

ROUTE 1 – MONTEREY COUNTY – SEGMENT 14

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
14A	72.30	75.14	Carmel River Bridge to SR 68 West
14B	75.14	R78.12	SR 68 West to SR 68 East
14C	R78.12	R90.98	SR 68 East to SR 156 West
Segment Concept : LOS D: Four- and Six-lane Conventional Highway and Six-lane Freeway			



SEGMENT FEATURES

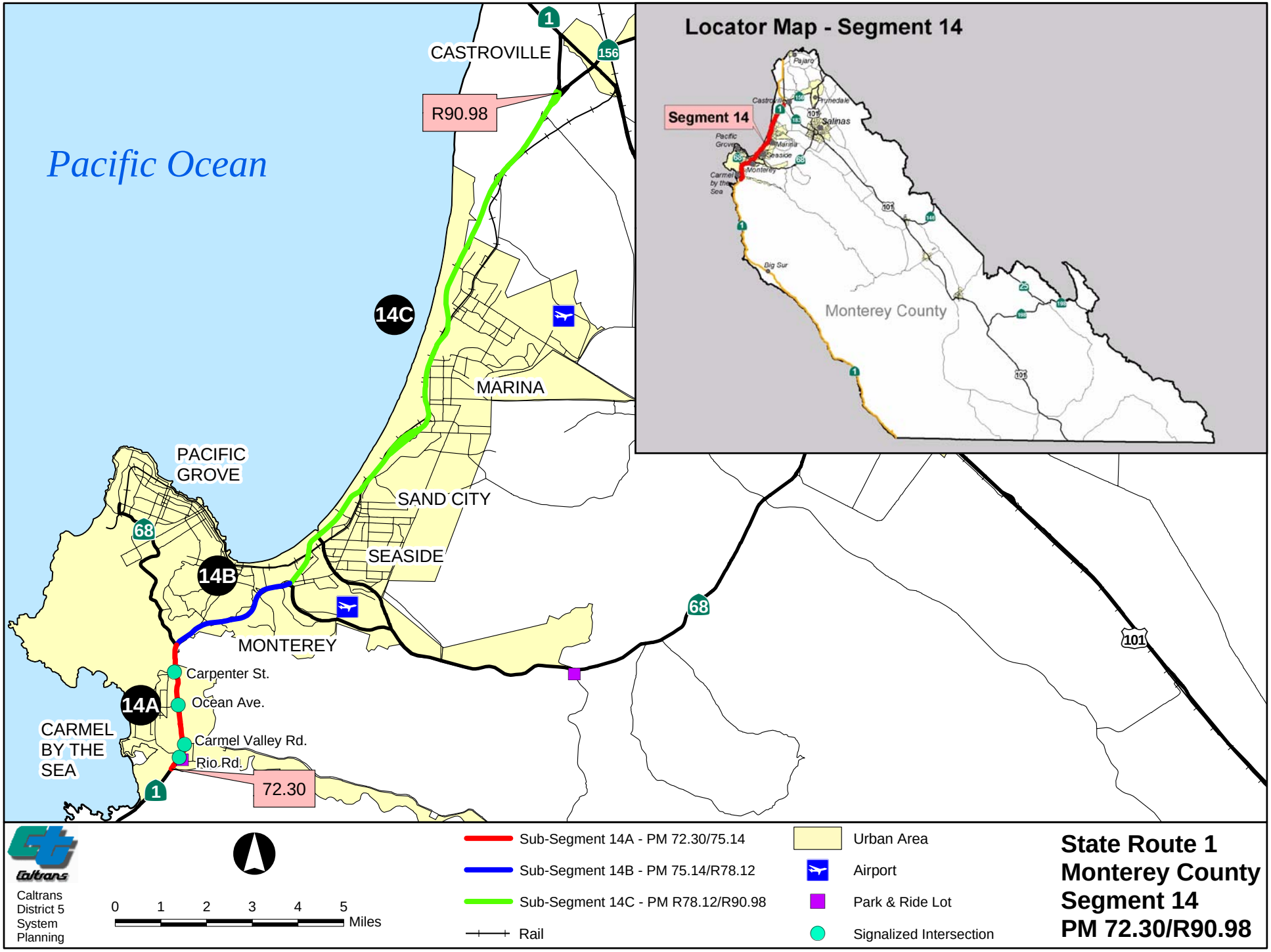
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Monterey-Salinas Transit	▪ Pacific Coast Bike Route
Land Uses along Corridor :	▪ Open Space ▪ Urban Commercial and Industrial and Residential ▪ Educational ▪ Agricultural	
Major Traffic Generators:	▪ Carmel by-the-Sea, Pacific Grove, Monterey, Seaside, Sand City, and Marina: Tourist Destinations, Urban Activities, and Employment Centers ▪ Employment and Government Centers in Monterey and in Salinas via SR 68 ▪ California State University Monterey Bay ▪ Marina State Beach	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 14 is presently operating at peak LOS E/F and is projected to operate at LOS F by the year 2025.

RECOMMENDED ACTIONS:

- Widen 2-lane to 4-lane and 4-lane to 6-lane
- Consolidate access points where feasible south of SR 68 West (Sub-segment 14A.
- Install operational improvements
- Widen to 6-lanes north of SR 68 West.
- Install ITS elements to improve operations.
- Pursue commuter and inter-city rail extension to Monterey Peninsula for commuter and interregional travel.
- Pursue non-highway mobility measures (rail, transit, and bicycling) for regional travel among Monterey Bay destinations.


Locator Map - Segment 14
Segment 14
Monterey County
Pacific Ocean
CASTROVILLE
R90.98
14C
MARINA
PACIFIC GROVE
SAND CITY
SEASIDE
14B
MONTEREY
Carpenter St.
Ocean Ave.
14A
CARMEL BY THE SEA
Carmel Valley Rd.
Rio Rd.
72.30
Caltrans District 5 System Planning
0 1 2 3 4 5 Miles
Sub-Segment 14A - PM 72.30/75.14
Sub-Segment 14B - PM 75.14/R78.12
Sub-Segment 14C - PM R78.12/R90.98
Rail
Urban Area
Airport
Park & Ride Lot
Signalized Intersection
State Route 1
Monterey County
Segment 14
PM 72.30/R90.98

Caltrans District 5 - Segment Data Sheet

Monterey County	Route	1	Segment / (Sub-segment)	14A

Segment/sub-segment Location

PM start	PM end	Length	Description
72.30	75.14	2.84	Carmel River Bridge to SR 68 West

Existing Roadbed Information

Number of lanes	2 to 4	Lane Width	10-15 ft.
Terrain	Rolling	ROW Width	100-200 ft.
Signalized Intersections	Four	Shoulder Width	3-16 ft.
Bicycle Facilities	Class III	Median Width	0-46 ft.

Route Designations

Functional Classification	Urban Minor Arterial
Facility Type:	Conventional Highway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	46,000	63,000			F	F
	ADT Ann. Growth (2002-2025)		1.38%	Directional Split		60%
	Peak Hour Volume (2002)		4,500	Peak Hour Truck		3%

	Street	Delay Time (seconds)		LOS	
Signalized Intersection Analysis		2002	2025	2002	2025
	Rio Road, Carmel Valley Road, Ocean Avenue, and Carpenter Street	~ no data; observed to be LOS F ~			

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	1.99	1.96	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.000	0.020	
Fatality & Injury Collision Rate	0.57	0.81	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS D/ 4 and 6-lane conventional highway

Comments: ***Limit and consolidate access; widen 2-lane to 4-lane and 4-lane to 6-lane; add turn lanes to improve turning operations; install ITS elements to aid operations.***

Caltrans District 5 - Segment Data Sheet

Monterey County	Route	1	Segment/(Sub-segment)	14B

Segment/sub-segment Location

PM start	PM end	Length	Description
75.14	R78.12	2.98	SR 68 West to SR 68 East

Existing Roadbed Information

Number of lanes	4 to 6	Lane Width	11-12 ft.
Terrain	Flat/Rolling	ROW Width	200 ft.
Signalized Intersections	None	Shoulder Width	5-8 ft.
Bicycle Facilities	Prohibited	Median Width	22-46 ft.

Route Designations

Functional Classification	Urban Principal Arterial
Facility Type	Freeway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	57,500	72,500			F	F
	ADT Ann. Growth (2002-2025)		0.99%	Directional Split		70%
	Peak Hour Volume (2002)		5,300	Peak Hour Truck		2%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	1.31	0.86	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.005	0.009	
Fatality & Injury Collision Rate	0.37	0.31	

* Average collision rates statewide for this type of facility

Proposed Concept

Proposed Transportation Concept	LOS D / 6-lane freeway

Comments: ***Install ITS elements to aid operations: (loops, radar, CMS, HAR, ramp meters); pursue commuter and intercity rail extension to Monterey Peninsula for commuter and interregional travel; pursue non-highway mobility measures (rail, transit, and bicycling) for regional travel among Monterey Bay destinations.***

Caltrans District 5 - Segment Data Sheet

Monterey County	Route	1	Segment/(Sub-segment)	14C

Segment/sub-segment Location

PM start	PM end	Length	Description
R78.12	R90.98	12.86	SR 68 East to SR 156 West

Existing Roadbed Information

Number of lanes	4-6	Lane Width	12 ft.
Terrain	Flat	ROW Width	200-250 ft.
Signalized Intersections	None	Shoulder Width	8-13 ft.
Bicycle Facilities	Class I	Median Width	46-99 ft.

Route Designations

Functional Classification	Principal Arterial
Facility Type:	Freeway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	No - (High Emphasis Route)

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	66,000	91,500			E/F	F
	ADT Ann. Growth (2002-2025)		1.39%	Directional Split		70%
	Peak Hour Volume (2002)		6,500	Peak Hour Truck		3%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.47	0.71	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.001	0.013	
Fatality & Injury Collision Rate	0.18	0.27	

* Average collision rates statewide for this type facility

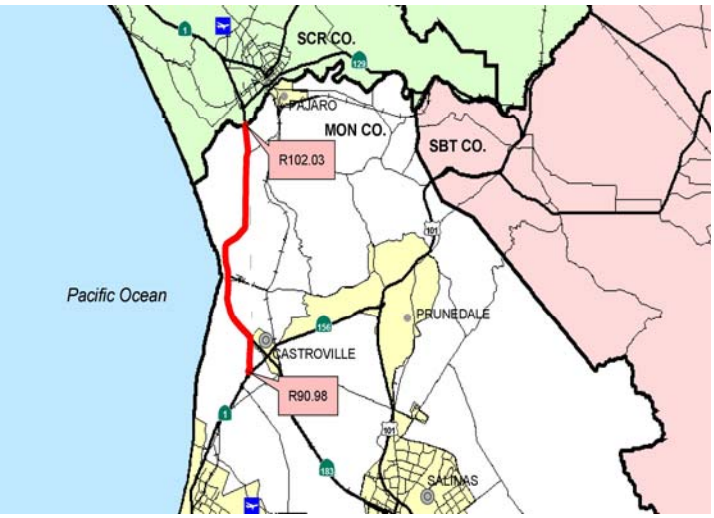
Proposed Concept

Proposed Transportation Concept	LOS D / 6-lane freeway

Comments: ***Provide operational improvements including auxiliary lanes, cameras and loop detectors, ramp meters, CMS, and HAR; pursue commuter and intercity rail extension to Monterey Peninsula for commuter and interregional travel; pursue non-highway mobility measures (rail, transit, and bicycling) for regional travel among Monterey Bay destinations.***

ROUTE 1 – MONTEREY COUNTY – SEGMENT 15

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
15	R90.98	R102.03	SR 156 West to Monterey/Santa Cruz County
Segment Concept : LOS D: Four-lane Conventional, Expressway, and Freeway			



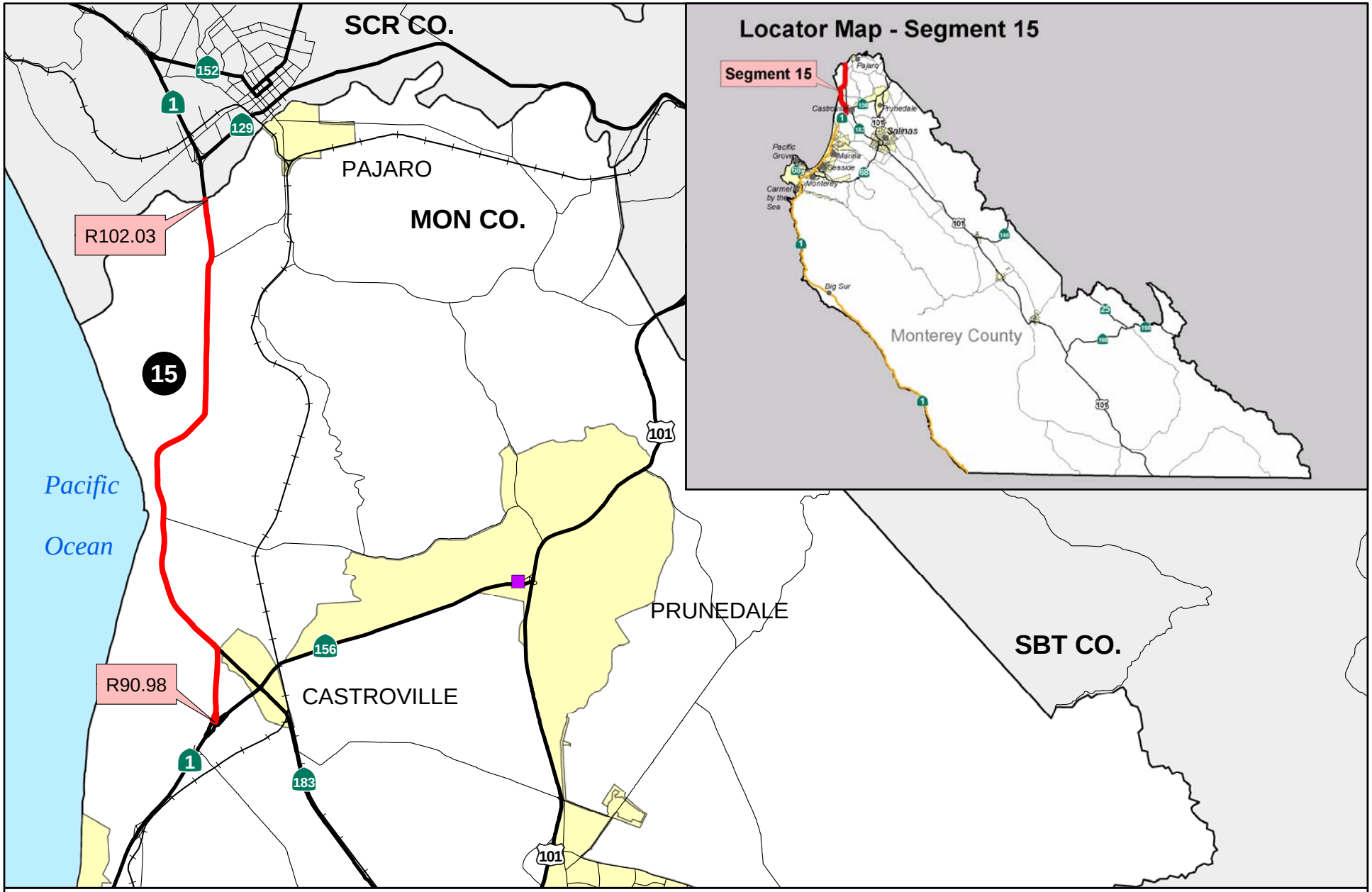
SEGMENT FEATURES		
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Monterey-Salinas Transit ▪ Rail Station at Pajaro	▪ Pacific Coast Bike Route
Land Uses along Corridor :	▪ Agricultural operations ▪ Scattered Convenience Commercial, Industrial ▪ Open Space/Wildlife Preserve/Recreational	
Major Traffic Generators:	▪ Access to SR 156 ▪ Salinas River State Beach ▪ Duke Energy Power Facility ▪ Moss Landing State Beach/Elkhorn Slough ▪ Zmudowski State Beach ▪ Rail Access at Pajaro	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 15 is presently operating at peak LOS F and is projected to remain at peak LOS F through year 2025.

RECOMMENDED ACTIONS:

- Construct 4-lane expressway or equivalent capacity in bypass, light rail, and/or other modes.
- Consolidate access points where feasible.
- Pursue commuter and inter-city rail extension to Monterey Peninsula for commuter and interregional travel.
- Pursue non-highway mobility measures (rail, transit, and bicycling) for regional travel among Monterey Bay destinations.
- Provide standard width shoulders.



Caltrans
Caltrans District 5 System Planning

0 1 2 3 4 5 Miles

Segment 15
Rail
Urban Area
Park & Ride Lot

State Route 1
Monterey County
Segment 15
PM R90.98/R102.03

Caltrans District 5 - Segment Data Sheet

Monterey County	Route	1	Segment/(Sub-segment)	15

Segment/sub-segment Location

PM start	PM end	Length	Description
R90.98	R102.03	12.46	SR 156 West to Monterey/Santa Cruz County Line

Existing Roadbed Information

Number of lanes	2 to 4	Lane Width	12-15 ft.
Terrain	Flat/Rolling	ROW Width	100-250 ft.
Signalized Intersections	None	Shoulder Width	6-13 ft.
Bicycle Facilities	Class III	Median Width	0-99 ft.

Route Designations

Functional Classification	Principal Arterial
Facility Type	Freeway/Expressway/Conventional
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	No - (High Emphasis Route)

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	34,800	38,000			F	F
	ADT Ann. Growth (2002-2025)		0.36%	Directional Split		65%
	Peak Hour Volume (2002)		3,900	Peak Hour Truck		6%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	1.01	0.85	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.014	0.031	
Fatality & Injury Collision Rate	0.35	0.41	

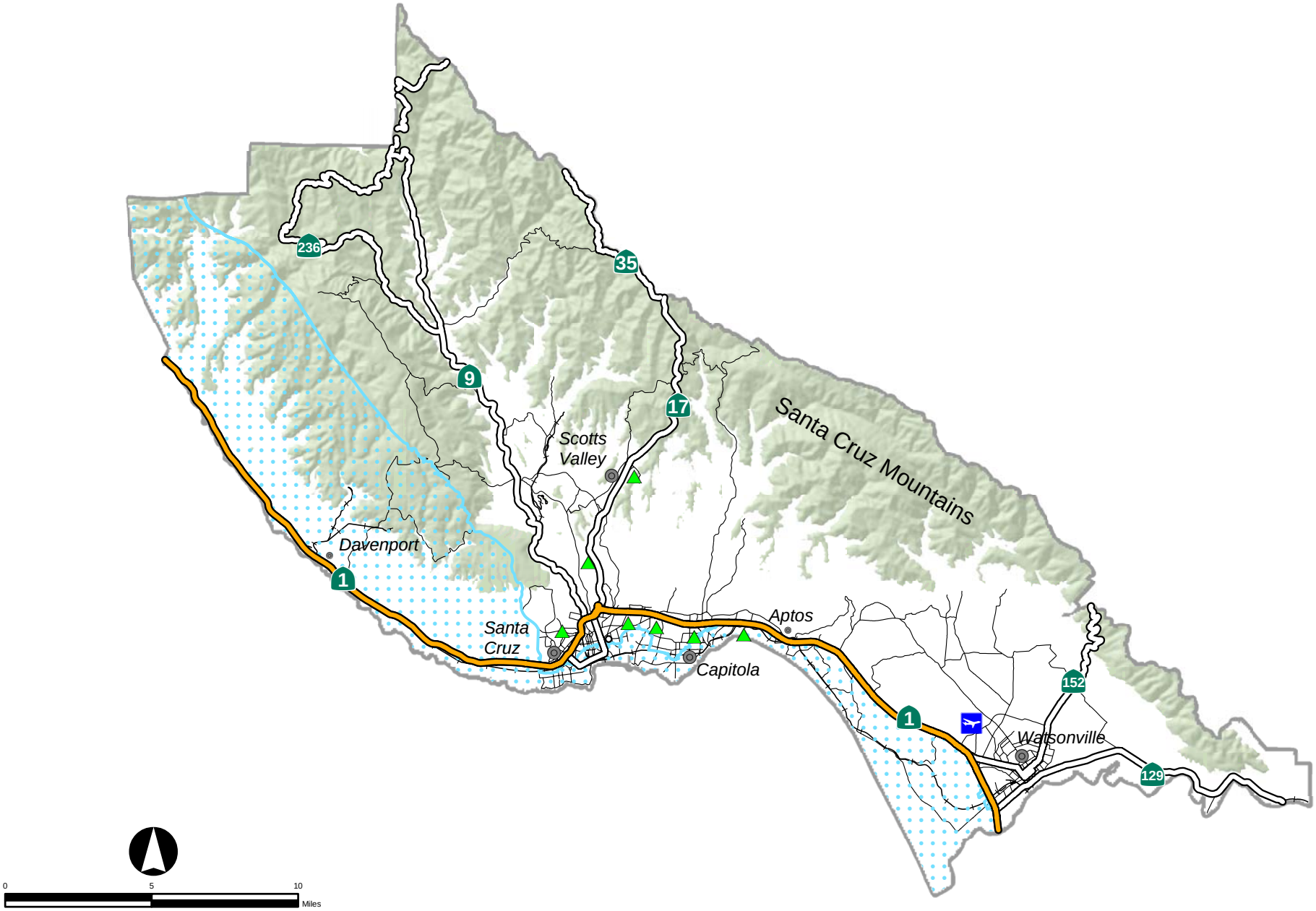
* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS D / 4-lane conventional/expressway/freeway

Comments: Add capacity; limit and consolidate access; pursue commuter and intercity rail extension to Monterey Peninsula for commuter and interregional travel; pursue non-highway mobility measures (rail, transit, and bicycling) for regional travel among Monterey Bay destinations.

APPENDIX B-4: Maps and Segment Data
Santa Cruz County



Caltrans
District 5
System
Planning

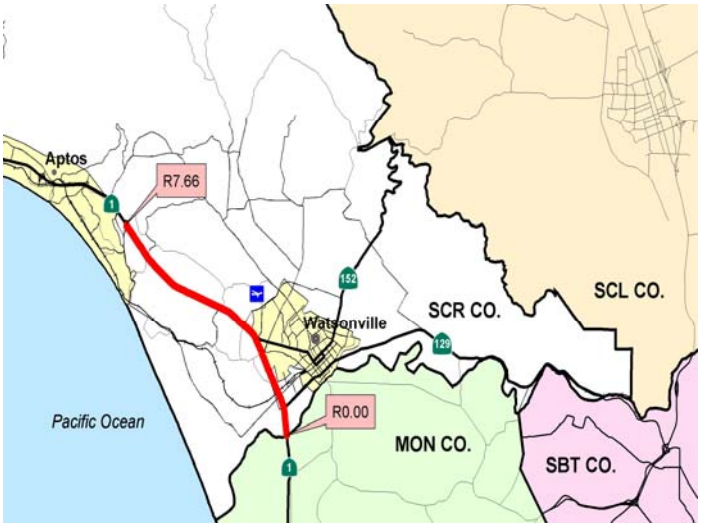
Legend

- Coastal Zone
- Airport
- Park & Ride Lots
- State Route 1
- Rail

Santa Cruz County Development Centers

ROUTE 1 – SANTA CRUZ COUNTY – SEGMENT 16

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
16	R0.00	R7.66	Monterey/Santa Cruz County Line to Larkin Valley Road Exit
Segment Concept : LOS C/D: Four- and Six-lane Freeway			



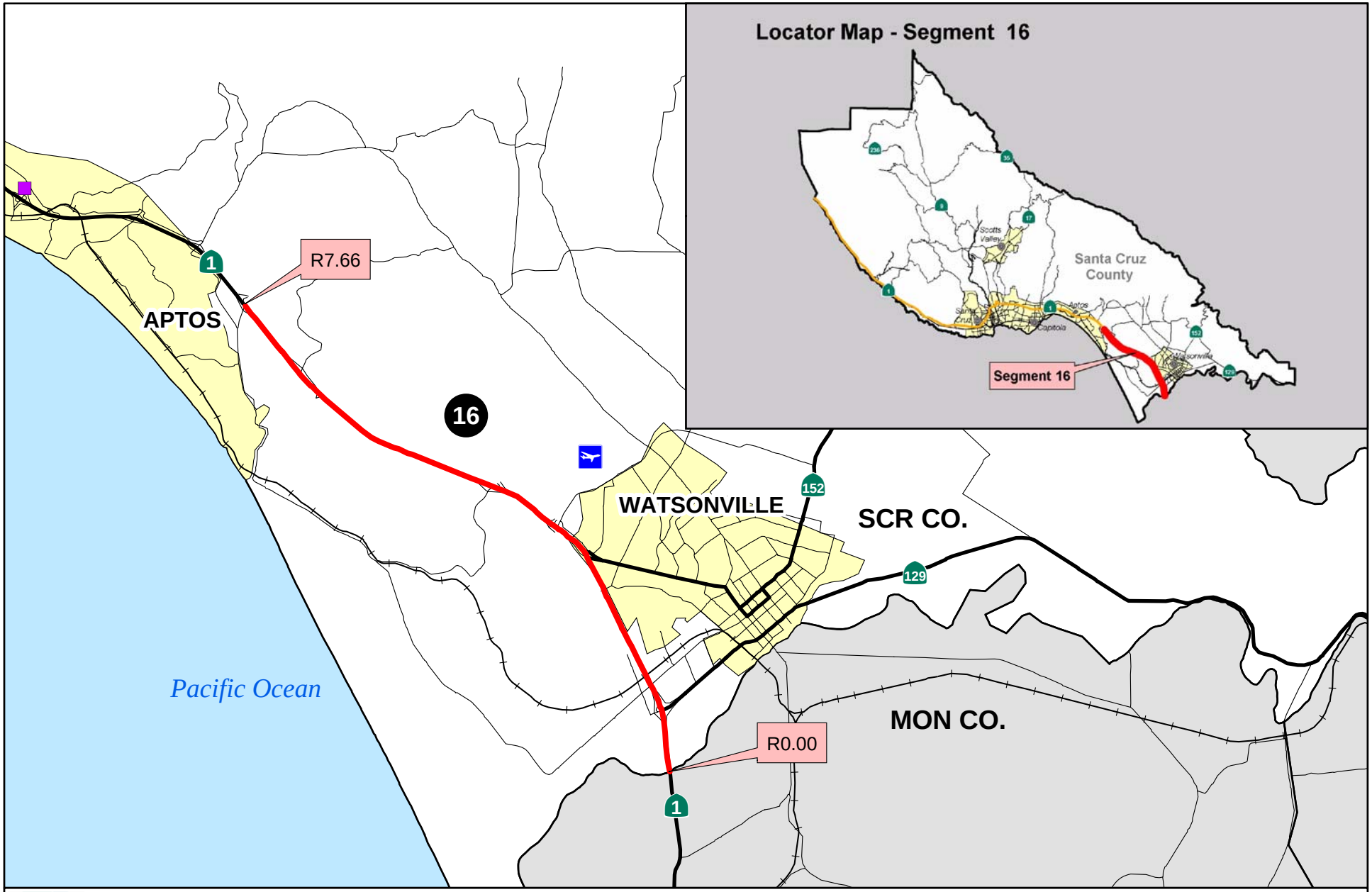
SEGMENT FEATURES		
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Monterey-Salinas Transit (to Watsonville) ▪ Santa Cruz County Metropolitan Transit (Metro)	▪ Watsonville Municipal Airport ▪ Pacific Coast Bike Route
Land Uses along Corridor :	▪ Agriculture ▪ Urban Uses in City of Watsonville ▪ Open Space	
Major Traffic Generators:	▪ Sunset State Beach ▪ City of Watsonville Commercial and Industrial Centers ▪ Watsonville Municipal Airport	▪ Manresa State Beach ▪ La Selva Beach

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 16 is presently operating at peak LOS C, but is projected to operate at LOS D by 2025.

RECOMMENDED ACTIONS:

- Construct 6-lane freeway north of SR 129.
- Improve interchange with Harkins Slough Road
- Continue to explore opportunities to site and develop park and ride lots along corridor
- Consider ITS elements and other operational improvements
- Pursue parallel passenger rail service.



Caltrans District 5 System Planning

0 1 2 3 Miles

Segment 16
Rail
Urban Area
Airport
Park & Ride Lot

State Route 1
Santa Cruz County
Segment 16
PM R0.00/R7.66

Caltrans District 5 - Segment Data Sheet

Santa Cruz County	Route	1	Segment/(Sub-segment)	16

Segment/sub-segment Location

PM start	PM end	Length	Description
R0.00	R7.66	7.66	Monterey/Santa Cruz County Line to Larkin Valley Road Exit

Existing Roadbed Information

Number of lanes	4 to 5	Lane Width	12 ft.
Terrain	Flat/Rolling	ROW Width	200-220 ft.
Signalized Intersections	None	Shoulder Width	5-10 ft.
Bicycle Facilities	Prohibited	Median Width	36-99 ft.

Route Designations

Functional Classification	Principal Arterial
Facility Type:	Freeway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	46,000	56,000			C	D
	ADT Ann. Growth (2002-2025)		0.84%	Directional Split		60%
	Peak Hour Volume (2002)		4,500	Peak Hour Truck		4%

	Location	Delay Time (seconds)		LOS	
Signalized Intersection Analysis		2002	2025	2002	2025
	(none)				

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.43	0.62	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.010	0.010	
Fatality & Injury Collision Rate	0.15	0.24	

* Average collision rates statewide for this type facility

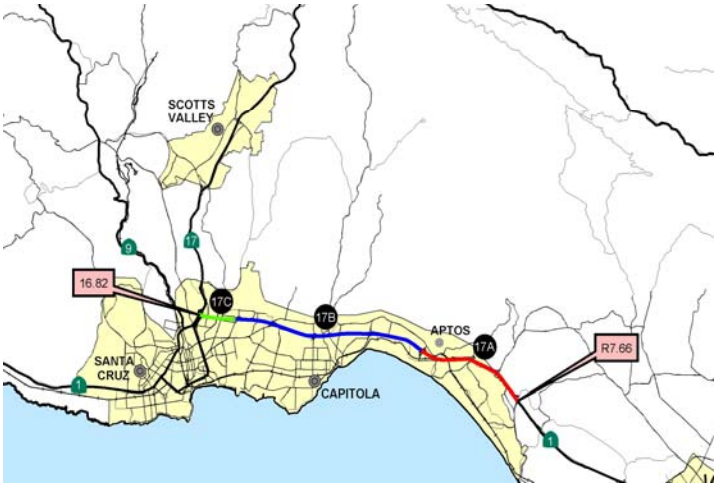
Proposed Concept

Proposed Transportation Concept	LOS C/D / 4-lane Freeway to SR 129; 6-lane Freeway north of SR 129

Comments: ***Install ITS elements to improve operations (pavement detectors, CCTV cameras, CMSs, ramp meters); support TDMs and intermodal facilities to reduce/manage demand; improve I/C with Harkins Slough Road.***

ROUTE 1 – SANTA CRUZ COUNTY – SEGMENT 17

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
17A	R7.66	10.54	San Andreas Rd/Larkin Valley Rd to State Park Road
17B	10.54	15.82	State Park Road to Morrissey Boulevard
17C	15.82	16.82	Morrissey Boulevard to SR1/SR 17 Junction
Segment Concept : LOS D / 6-lane freeway			



SEGMENT FEATURES

Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Santa Cruz County Metropolitan Transit (Metro) ▪ Park and Ride Lots	▪ Pacific Coast Bike Route
Land Uses along Corridor :	▪ Public Lands: Screening Landscaping ▪ Urban Residential and Commercial	
Major Traffic Generators:	▪ La Selva Beach, Rio Del Mar, Aptos, Soquel, Capitola, and Santa Cruz: Tourist Destinations ▪ Urban Activities, and Employment Centers ▪ Campuses of Cabrillo College and UCSC ▪ Access to SR 17 ▪ State Beaches: Seacliff, New Brighton, and Twin Lakes ▪ Forest of Nisene Marks State Park	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 17 is presently operating at peak LOS E/F and is projected to remain at peak LOS F through year 2025.

RECOMMENDED ACTIONS:

- Widen to six lanes.
- Support intermodal connectivity among highway, rail, bicycle.
- Continue to explore opportunities to site and develop park and ride lots along corridor
- Implement Intelligent Transportation System components to aid operations: loops, CCTV cameras, CMS, ramp meters.
- Support TDMs and intermodal facilities to reduce/manage demand.
- Pursue parallel passenger rail service.
- Support incident management program to increase safety, mobility, and reliability.

Caltrans District 5 System Planning

0 0.5 1 1.5 2 2.5 Miles

Sub-Segment 17A - PM R7.66/10.54

Sub-Segment 17B - PM 10.54/15.82

Sub-Segment 17C - PM 15.82/16.82

Urban Area

Rail

Park & Ride Lot

State Route 1
Santa Cruz County
Segment 17
PM R7.66/16.82

Caltrans District 5 - Segment Data Sheet

Santa Cruz County	Route	1	Segment / (Sub-segment)	17A

Segment/sub-segment Location

PM start	PM end	Length	Description
R7.66	10.54	2.68	Larkin Valley Road to State Park Drive

Existing Roadbed Information

Number of lanes	4	Lane Width	12 ft.
Terrain	Rolling	ROW Width	200 ft.
Signalized Intersections	None	Shoulder Width	6-10 ft.
Bicycle Facilities	Prohibited	Median Width	12-70 ft.

Route Designations

Functional Classification	Urban Principal Arterial
Facility Type:	Freeway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	77,000	83,000			E	E
	ADT Ann. Growth (2002-2025)		0.32%	Directional Split		55%
	Peak Hour Volume (2002)		6,900	Peak Hour Truck		2%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.89	1.02	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.008	0.013	
Fatality & Injury Collision Rate	0.28	0.38	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS D / 6-lane freeway

Comments: ***Install ITS elements to improve operations (pavement detectors, CCTV cameras, CMSs and/or HAR, ramp meters); pursue commuter and intercity rail extension to Santa Cruz for commuter and interregional travel; support TDMs and intermodal facilities to reduce/manage demand; pursue non-highway mobility measures (rail, transit, and bicycling) for regional travel among Monterey Bay destinations.***

Caltrans District 5 - Segment Data Sheet

Santa Cruz County	Route	1	Segment/(Sub-segment)	17B

Segment/sub-segment Location

PM start	PM end	Length	Description
10.54	15.82	5.28	State Park Drive to Morrissey Boulevard

Existing Roadbed Information

Number of lanes	4	Lane Width	12 ft.
Terrain	Flat/Rolling	ROW Width	200 ft.
Signalized Intersections	None	Shoulder Width	8 ft.
Bicycle Facilities	Prohibited	Median Width	6-36 ft.

Route Designations

Functional Classification	Urban Principal Arterial
Facility Type:	Freeway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	103,300	121,000			F	F
	ADT Ann. Growth (2002-2025)		0.66%	Directional Split		55%
	Peak Hour Volume (2002)		8,900	Peak Hour Truck		2%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.93	1.32	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.002	0.015	
Fatality & Injury Collision Rate	0.27	0.49	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS D / 6-lane freeway

Comments: ***Also, add auxiliary lanes, as needed; install ITS elements to improve operations (pavement detectors, CCTV cameras, CMSs and/or HAR, ramp meters); pursue commuter and intercity rail extension to Santa Cruz for commuter and interregional travel; support TDMs and intermodal facilities to reduce/manage demand; pursue non-highway mobility measures (rail, transit, and bicycling) for regional travel among Monterey Bay destinations.***

Caltrans District 5 - Segment Data Sheet

Santa Cruz County	Route	1	Segment/(Sub-segment)	17C

Segment/sub-segment Location

PM start	PM end	Length	Description
15.82	16.82	1.00	Morrissey Boulevard to SR 17

Existing Roadbed Information

Number of lanes	4	Lane Width	12 ft.
Terrain	Flat/Rolling	ROW Width	200 ft.
Signalized Intersections	None	Shoulder Width	8 ft.
Bicycle Facilities	Prohibited	Median Width	22 ft.

Route Designations

Functional Classification	Urban Principal Arterial
Facility Type:	Freeway
Trucking Designations	Terminal Access Route
National Highway System	Yes
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	109,400	137,000			F	F
	ADT Ann. Growth (2002-2025)		0.98%	Directional Split		55%
	Peak Hour Volume (2002)		9,400	Peak Hour Truck		2%

	Location	Delay Time (seconds)		LOS	
Signalized Intersection Analysis		2002	2025	2002	2025
	(none)	-	-	-	-

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	1.83	1.48	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.000	0.016	
Fatality & Injury Collision Rate	0.49	0.54	

* Average collision rates statewide for this type facility

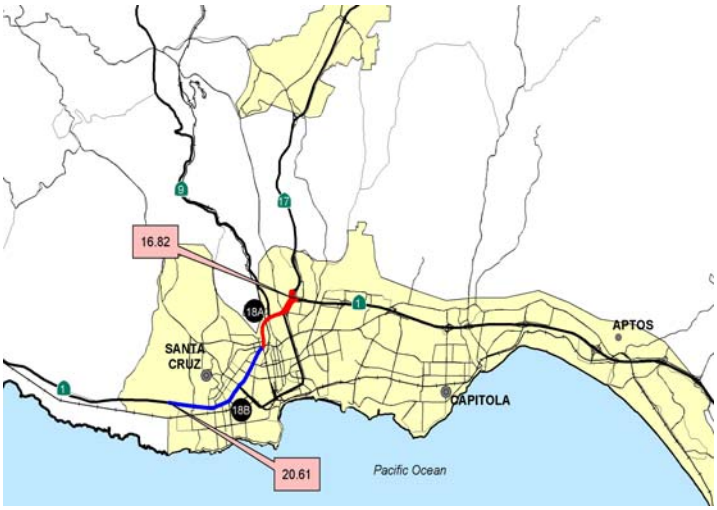
Proposed Concept

Proposed Transportation Concept	LOS D / 6-lane freeway

Comments: ***Also, add auxiliary lanes, as needed; install ITS elements to improve operations (pavement detectors, CCTV cameras, CMSs and/or HAR, ramp meters); pursue commuter and intercity rail extension to Santa Cruz for commuter and interregional travel; support TDMs and intermodal facilities to reduce/manage demand; pursue non-highway mobility measures (rail, transit, and bicycling) for regional travel among Monterey Bay destinations.***

ROUTE 1 – SANTA CRUZ COUNTY – SEGMENT 18

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
18A	16.82	18.14	SR1/SR17 Junction to Chestnut St
18B	18.14	20.61	Chestnut Avenue to Santa Cruz City Limits
Segment Concept : LOS D /Sub-segment 18A: Four-lane freeway/conventional; Sub-segment 18B: See below			



SEGMENT FEATURES

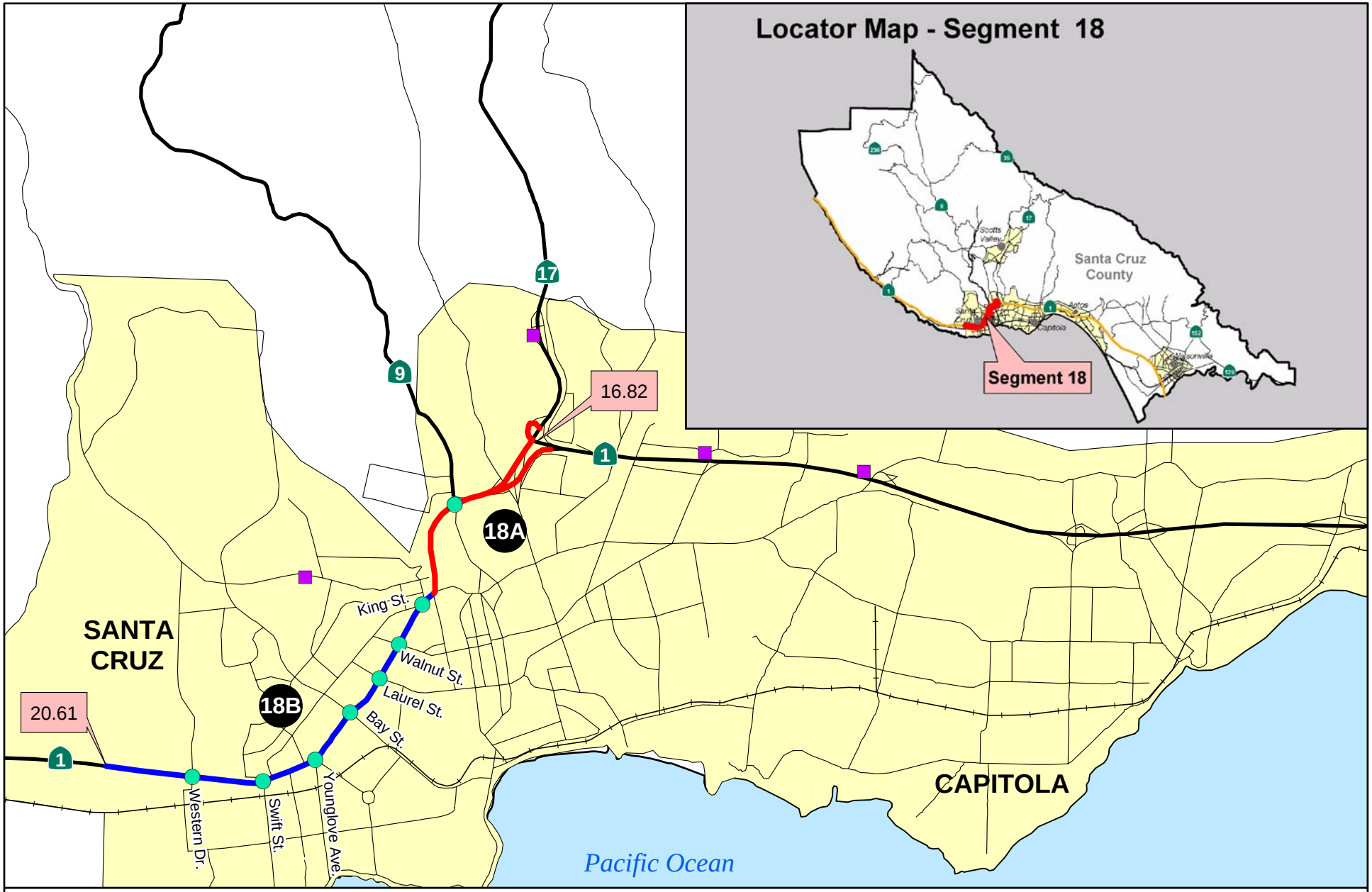
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Santa Cruz County Metropolitan Transit (Metro)	▪ Pacific Coast Bike Route
Land Uses along Corridor :	▪ Landscaped Open Space ▪ Urban Commercial, Residential, Educational, Offices	
Major Traffic Generators:	▪ UC Santa Cruz Main Campus ▪ Santa Cruz Recreational Activities: Beach and Boardwalk ▪ State Beaches: Lighthouse Field and Natural Bridges ▪ Urban Activities and Employment Centers ▪ UC Santa Cruz Marine Lab	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 18 is presently operating at peak LOS D/E and is projected to fall to LOS E/F by the year 2025.

RECOMMENDED ACTIONS:

- Improve channelization where possible.
- Evaluate intersections at Mission/Chestnut and Mission/Bay for improvements
- Minimize new access and consolidate existing points of access to highway
- Improve pedestrian access
- Continue to explore opportunities to site and develop park and ride lots along corridor
- Synchronize signals
- Evaluate potential for widening 4-lane sections to 6 lanes
- Support incident management program to increase safety, mobility, and reliability.



Caltrans
Caltrans District 5 System Planning

0 0.5 1 1.5 2 Miles

Sub-Segment 18A - PM 16.82/18.14
Sub-Segment 18B - PM 18.14/20.61
Rail
Urban Area
Park & Ride Lot
Signalized Intersection

State Route 1
Santa Cruz County
Segment 18
PM 16.82/20.61

Caltrans District 5 - Segment Data Sheet

Santa Cruz County	Route	1	Segment/(Sub-segment)	18A

Segment/sub-segment Location

PM start	PM end	Length	Description
16.82	18.14	1.32	SR 17 to Mission Street

Existing Roadbed Information

Number of lanes	4	Lane Width	12 ft.
Terrain	Flat/Rolling	ROW Width	165 ft.
Signalized Intersections	2	Shoulder Width	8 ft.
Bicycle Facilities	Prohibited / Class III	Median Width	10-99 ft.

Route Designations

Functional Classification	Urban Minor Arterial
Facility Type:	Freeway to Conventional Highway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	55,000	60,000			D	E
	ADT Ann. Growth (2002-2025)		1.00%	Directional Split		70%
	Peak Hour Volume (2002)		4,400	Peak Hour Truck		3%

Signalized Intersection Analysis	Location	Delay Time (seconds)		LOS	
		2002	2025	2002	2025
	SR 9			D	F
		2004	2009-12	2004	2009-12
	Mission/Chestnut *	54.3	D	114.2	F

* Data provided by City of Santa Cruz Public Works Department

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	2.51	1.60	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.024	0.014	
Fatality & Injury Collision Rate	0.80	0.65	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS D /4-lane freeway/conventional

Comments: Improve intersection with SR 9; evaluate intersection at Mission/Chestnut for improvements; improve pedestrian access.

Caltrans District 5 - Segment Data Sheet

Santa Cruz County	Route	1	Segment/(Sub-segment)	18B

Segment/sub-segment Location

PM start	PM end	Length	Description
18.14	20.61	2.47	Mission Street to Santa Cruz North Urban Limit at UCSC Marine Lab

Existing Roadbed Information

Number of lanes	4-2	Lane Width	12-16.5 ft.
Terrain	Flat	ROW Width	65-165 ft.
Signalized Intersections	7	Shoulder Width	0-8 ft.
Bicycle Facilities	Class III	Median Width	0-11 ft.

Route Designations

Functional Classification	Urban Minor Arterial
Facility Type:	Conventional Highway/Expressway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

Through-traffic flow Analysis	ADT		V/C Ratio		LOS	
	2002	2025	2002	2025	2002	2025
	18,800	26,000			E	F
	ADT Ann. Growth (2002-2025)		2.09%	Directional Split		60%
	Peak Hour Volume (2002)		2,000	Peak Hour Truck		5%

Signalized Intersection Analysis	Location	Delay Time (seconds)*		LOS*	
		2004	2009-12	2004	2008-12
	King	91	F	70.5	E
	Walnut	16.2	B	24.3	C
	Laurel	28.2	C	79.5	E
	Bay	45.3	D	203.4	F
	Almar/Younglove	16.9	B	31.3	C
	Swift	15.2	B	32.9	C
	Western	14.5	B	20.7	C

* Data provided by City of Santa Cruz Public Works Department

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	3.27	2.38	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.027	0.021	
Fatality & Injury Collision Rate	1.12	1.02	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS D (See comments)

Comments: Provide left turn pockets at signalized intersections; evaluate intersection at Bay Street for further improvements; improve pedestrian access; synchronize signals; evaluate potential for widening 4-lane sections to 6 lanes.

ROUTE 1 – SANTA CRUZ COUNTY – SEGMENT 19

SEGMENT SPECIFICATIONS			
Segment	Begin	End	Description
19	20.61	37.45	Santa Cruz City Limits to Santa Cruz/San Mateo County Line
Segment Concept : LOS D: Two-lane Conventional			

SEGMENT FEATURES		
Environmental Constraints:	▪ Coastal Zone requirements ▪ Scenic and historic resources ▪ Special status species/habitat ▪ Geologic and seismic	▪ Archaeological and cultural resources ▪ Topography ▪ Aesthetics
Multimodal Facilities:	▪ Santa Cruz County Metropolitan Transit (Metro)	▪ Pacific Coast Bike Route ▪ California Coastal Trail
Land Uses along Corridor :	▪ Agricultural ▪ Open space ▪ Commercial (Davenport)	
Major Traffic Generators:	▪ Wilder Ranch State Park ▪ Henry Cowell Redwoods State Park ▪ Davenport ▪ Big Basin Redwoods State Park	

IDENTIFIED LEVELS OF SERVICE – EXISTING AND FUTURE:

- Segment 19 is presently operating at peak LOS D and is projected to decline to peak LOS E by the year 2025.

RECOMMENDED ACTIONS:

- Minimize and consolidate access.
- Improve channelization.

Caltrans District 5 System Planning

0 1 2 3 4 Miles

Segment 19

Rail

Urban Area

Park & Ride Lot

State Route 1
Santa Cruz County
Segment 19
PM 20.61/37.45

Caltrans District 5 - Segment Data Sheet

Santa Cruz County	Route	1	Segment/(Sub-segment)	19

Segment/sub-segment Location

PM start	PM end	Length	Description
20.61	37.45	16.84	Santa Cruz North Urban Limit at UCSC Marine Lab to Santa Cruz/San Mateo County Line

Existing Roadbed Information

Number of lanes	2	Lane Width	11-12 ft.
Terrain	Flat/Rolling	ROW Width	165-180 ft.
Signalized Intersections	None	Shoulder Width	4-28 ft.
Bicycle Facilities	Class III	Median Width	0-11 ft.

Route Designations

Functional Classification	Minor Arterial
Facility Type:	Expressway to Conventional Highway
Trucking Designations	Terminal Access Route
National Highway System	No
Interregional Road System	Yes
Focus Route	No

Operating Characteristics

	ADT		V/C Ratio		LOS	
Through-traffic flow Analysis	2002	2025	2002	2025	2002	2025
	8,000	12,000			D	E
	ADT Ann. Growth (2002-2025)		1.86%	Directional Split		65%
	Peak Hour Volume (2002)		1,300	Peak Hour Truck		3%

	Location	Delay Time (seconds)		LOS	
Signalized Intersection Analysis		2002	2025	2002	2025
	(none)				

Accident Data

	Segment	Statewide*	3-year period evaluated
Total Collision Rate	0.62	1.18	Rates are incidents per million vehicle miles from **10/01/00** to **9/30/03**
Fatality Collision Rate	0.043	0.030	
Fatality & Injury Collision Rate	0.35	0.57	

* Average collision rates statewide for this type facility

Proposed Concept

Proposed Transportation Concept	LOS D / 2-lane Conventional Highway

Comments: ***Consolidate access and provide channelization improvements; provide standard width travel lanes and shoulders.***

APPENDIX C: Comments and Issues Identified in Community Meetings

Comments and Issues Identified in Community Meetings

SANTA BARBARA COUNTY

Segment 1: US 101 to SR 246

Local transportation planners, community representatives, residents, and members of the Bike Coalition and Lompoc Valley Cycling Club identified the following concerns:

1. *Increasing use by commuters*
2. *Capacity of NB 101 off-ramp to Route 1(vehicle stacking on US 101))*
3. *High speed traffic*
4. *Unstable cut slopes along route: erosion and potential for slides and rock falls*
5. *Wash outs/ponding/road closures north of Ytias Creek following heavy rains*
6. *Traffic impacts when SR 246 (alternative route) closed for repairs*
7. *Need for pull-offs for slow-moving farm equipment*
8. *Need for improved/extended passing lanes on grades near Santa Rosa Road*
9. *Need for additional passing lanes along segment*
10. *Non-standard shoulders on two bridges across El Jaro Creek impact bicyclists*
11. *Need for southbound deceleration and acceleration lanes at Jalama Road (roadway curves near intersection)*
12. *Need for four-lanes from Santa Rosa Road (P.M. 17.78) to SR 246.*
13. *Desire for inexpensive commuter rail system linking North County centers with South Coast centers*

Segment 2 – SR 246 to Harris Grade and Purisima Roads

Local transportation planners, community representatives, residents, and members of the Bike Coalition and Lompoc Valley Cycling Club identified the following concerns:

1. *Impacts of Home Depot/other new/planned commercial development on sub-segment 2A*
2. *Need for continuous sidewalks*
3. *Sub-segment 2A not bicycle friendly*
4. *Main Street vs. State Highway conflicts*
5. *Sub-segment 2B having highest volume of vehicular traffic in Lompoc area*
6. *Heavy commercial traffic*
7. *Need for wider turn lanes to accommodate truck turning movements at Ocean Avenue/H Street intersection*
8. *Maintenance*
9. *Evacuation route*
10. *Need SB high-speed approach ramp to Santa Ynez River Bridge and Class I path realignment south of bridge*
11. *Need for additional bike lanes in/through Lompoc*
12. *Need motion-sensitive vehicle sensors at traffic signals to detect bicycles*
13. *Need for bus turn-outs on H Street*
14. *Provide 13' right turn lanes from I Street to 7th Avenue*
15. *Traffic reduction for downtown Lompoc with extension of Central Avenue*
16. *Impacts of future development approvals*

17. *Aesthetics: trash and absence of median planting near north city limits*
18. *Traffic operations at Harris Grade Road intersection (consider traffic circle and/or reconfigured bicycle lanes)*

Segment 3 – Harris Grade and Purisima Roads to Orcutt Expressway

Local transportation planners, community representatives, residents, and members of the Bike Coalition and Lompoc Valley Cycling Club identified the following concerns:

1. *Impacts of new development on roadway and intersection operations at and north of intersection with Harris Grade and Purisima Roads*
2. *Safety of access to Allan Hancock College*
3. *Aesthetics: trash and absence of median planting near north city limits*
4. *Need for improvements at Santa Lucia for access to federal prison*

Segment 4: Orcutt Expressway to Santa Barbara/San Luis Obispo County Line

A public meeting held April 29, 2003 at the Guadalupe City Council Chambers in the City of Guadalupe generated comments regarding a wide range of regional transportation issues on State Route 1 and nearby facilities in Santa Barbara and San Luis Obispo Counties.

City of Guadalupe officials and residents identified the following concerns:

1. *Non-standard travel lanes (11-12'), shoulders (0-2') and bridges in sub-segment 4A*
2. *Need for passing lanes and tractor pull-outs along sub-segment 4A*
3. *Improvements for turns at Black Road and Brown Road junctions*
4. *Difficult SB transition from Route 1 onto SR 135*
5. *Flooding*
6. *Impacts of potential development at SW corner SR 1/SR 166*
7. *Main Street vs. State Highway conflicts in Guadalupe*
8. *Safety for children and adult pedestrians: Need for traffic lights at intersections with W. Main Street (SR 166) and 11th Street*
9. *Need for crosswalks in downtown Guadalupe*
10. *Proximity of SR 1/SR 166 at-grade intersection to SR 166/RR at-grade crossing*
11. *At SR1/166: need for larger stop signs and flashing light, caution light south of intersection, turn lanes to prevent vehicles backing up on through lanes*
12. *Overloaded produce trucks that shake historic brick buildings along Route 1 (Reroute trucks to San Simas and 11th Streets)*
13. *Desire for better signage on Route 1 in San Luis Obispo County directing traffic to Guadalupe as a tourist destination*
14. *Need for improved bicycle accommodations possibly including a cantilever bicycle bridge for bicycles and pedestrians across Santa Maria River north of Guadalupe*
15. *Consideration for developing Guadalupe train station into multi-modal transportation center*
16. *In Guadalupe along Route 1, improper placement of manhole covers, natural gas boxes, water boxes, asphalt patching, concrete blocking around tree, and fire hydrants; absent lift caps in water boxes; improper dimensions for steps and driveway lips, and drain inlet; and improper material (asphalt) for gutters.*
17. *Need for improved road maintenance in Guadalupe*

SAN LUIS OBISPO COUNTY

General

1. *Possibilities for bus rapid transit on Route 1*
2. *Need for pedestrian grade separation where highway crossing is difficult and conflicts with vehicular traffic*

Segment 5: Santa Barbara/San Luis Obispo County Line to Halcyon Road

Regional transportation planners and area residents identified the following concerns:

1. *Poor visibility over vertical undulations in roadway*
2. *Poor visibility around school bus stop near Nipomo Mesa mobile home park*
3. *Non-standard shoulder widths impact bicyclists*
4. *Slow-moving agricultural vehicles*
5. *Impacts of Woodlands project and other development near Mesa: need for developer fees to fund related traffic improvements*
6. *Pedestrian crossings*
7. *Provision of multi-use trails separated from highway*
8. *Channelization at intersection as needed to maintain/improve operations as development occurs*
9. *Consider additional traffic signals*
10. *Improvements at Willow Road: curve realignment, signalization, extension to US 101*
11. *Bridge replacement at Halcyon Road*
12. *Possibilities for realignments to Halcyon and/or Valley Roads with swaps/relinquishments*
13. *Drainage and flooding*

Segment 6: Halcyon Road to US 101 in Pismo Beach

Regional transportation planners identified the following concerns:

1. *Need for improved pedestrian access to Grover Beach rail station*
2. *Routing of truck traffic off Halcyon Road*
3. *Multiple access points including non-standard intersection with 4th Street at south end of railroad crossing in Oceano*
4. *Consider park and ride lot for Pismo Beach*
5. *Need standard shoulder widths for bicycling*
6. *Slow-moving agricultural vehicles*
7. *Consider bicycle-sensitive loops at traffic signals for through and left turn movements (e.g., Grand Avenue)*
8. *Consider additional signs for Pacific Coast Bicycle Route (PCBR) to remind motorists to share the road*
9. *Consider signing Mattie Road as PCBR*
10. *Options for congestion relief in Pismo Beach*
11. *Potential ITS applications in high traffic areas: CMS, HAR*
12. *CSS amenities including medians and sidewalks*
13. *Alignment for bike trail*
14. *DeAnza Trail designation*

Segment 7: US 101 in San Luis Obispo to Highland Drive

Regional transportation planners identified the following concerns:

1. *Operations at SR 1/US 101 intersection*
2. *Desirability of medians at pedestrian crossings for stopping mid-way across Santa Rosa Street*
3. *Stopped buses impede traffic flow and block bike lanes*
4. *Opportunities to acquire additional right-of-way for widening limited by existing urban development*
5. *Potential for bypass route from south end of San Luis Obispo (Los Osos Valley Road) to Cuesta College*
6. *Discontinuity of northbound bicycle lanes at Murray Street and Foothill Boulevard*
7. *Bicycle and pedestrian access to Cal Poly*
8. *Foothill intersection: need for landscaping and overpasses or underpasses for pedestrians and bicycles*
9. *CSS roadway treatments*

Segment 8: Highland Drive to South Bay Boulevard

Regional transportation planners identified the following concerns:

1. *Potential for conversion of sub-segment 8A to freeway to eliminate at-grade access*
2. *Conflicts between through and turning traffic at Education Drive: potential for interchange*
3. *Potential to develop an alternative alignment*
4. *Potential for consolidating access to reduce number of at-grade intersections*
5. *Narrow shoulders on Chorro Creek Bridge*
6. *CSS applications*
7. *Plans for interpretive centers adjacent to North Coast All American Road/pull-offs for viewing natural attractions along route*

Segment 9: South Bay Boulevard to SR 46

Regional transportation planners identified the following concerns:

1. *Traffic for off-ramps at SR 41 interchange backing up on Route 1*
2. *Proposed roundabout at SR 1/41/Main Street intersection*
3. *Aesthetics issues with utility lines, billboards, fences*
4. *CSS amenities including medians and sidewalks*
5. *Evaluate transition to limited-access freeway*
6. *Consider bicycle-sensitive loops at traffic signals for through and left turn movements (e.g., San Jacinto and Yerba Buena Streets)*
7. *Narrow shoulders on Toro Creek Bridge*
8. *Consider highway access and parking for new coastal access areas at Estero Bluffs State Park and in Harmony area*
9. *Improved facilities for bicycles to avoid/maneuver through weave areas between Main Street and SR 41 ramps in Morro Bay.*

10. *Exiting traffic back-ups at SR 41 related to slow clearing I/C at SR 41, Main Street and Route 1 ramps*
11. *Plans for Class I bikeway parallel to sub-segment 9B*
12. *Possible need for longer NB left-turn pocket at 24th Street exit in Cayucos*

Segment 10: SR 46 to San Carpoforo Creek

Regional transportation planners identified the following concerns:

1. *Parallel cross-town bike and pedestrian trail in Cambria Flood control project*
2. *Consider bicycle-sensitive loops at traffic signals for through and left turn movements (e.g., Windsor Boulevard)*
3. *Bike/pedestrian trail in San Simeon*
4. *CSS amenities including medians and sidewalks*
5. *San Simeon Acres: Main Street America/ Access under bridge/improved landscaping*
6. *Transit use*
7. *Potential development of Hearst Ranch lands*
8. *Address highway access and parking for coastal areas along Hearst Ranch coastline*
9. *Need standard shoulder widths for bicycling*
10. *Need paved shoulders free of weeds, sand, and gravel for bicycling*
11. *Safe access to off-road attractions: elephant seal colony and Piedras Blancas Lighthouse*
12. *Realignment of road to east away from surf*
13. *Additional pedestrian and bicycle paths where roadway abandoned for new alignment*

Segment 11: San Carpoforo Creek to San Luis Obispo/ Monterey County Line

Stakeholders in the Coast Highway Management Plan process identified the following concerns regarding Segments 12 and 13:

1. *Safety, related to landslides; highway repair and maintenance activities; pedestrian and bicycle access; and access to turnouts, vista points, pullouts and roadside parking opportunities*
2. *Unstable cut slopes along route: erosion and potential for slides and rock falls*
3. *Importance of keeping the highway open: clearing slide materials and repairing storm damage as quickly and efficiently as possible*
4. *Effects of slow-moving visitor-driven vehicles, bicyclists, and pedestrians on traffic flow*
5. *Narrow travel lanes and narrow or absent paved shoulders*
6. *Spread of invasive exotic plant species*
7. *Aesthetics: minimizing introduction of new man-made elements in the viewshed, including Caltrans' construction work and equipment as well as structures visible from the highway*
8. *Facilities for use, comfort, and safety of travelers: turnouts, vista points, pullouts, paved shoulders of adequate width for use by bicyclists*
9. *Provide adequate measures for bicyclists during maintenance and reconstruction work. Incident related by stakeholder: The signal controlling access to one-way*

traffic lane did not provide adequate time for southbound cyclist to ride through before northbound traffic entered the lane.

10. *Highway access and parking for coastal access at mouth of San Carpoforo Creek.*

MONTEREY COUNTY

Segment 12: San Luis Obispo/Monterey County Line to Malpaso Creek Bridge, and Segment 13: Malpaso Creek Bridge to Carmel River Bridge

Stakeholders in the Coast Highway Management Plan process identified the following concerns regarding Segments 12 and 13:

1. *Safety, related to landslides; highway repair and maintenance activities; pedestrian and bicycle access; and access to turnouts, vista points, pullouts and roadside parking opportunities*
2. *Unstable cut slopes along route: erosion and potential for slides and rock falls*
3. *Importance of keeping the highway open: clearing slide materials and repairing storm damage as quickly and efficiently as possible*
4. *Effects of slow-moving visitor-driven vehicles, bicyclists, and pedestrians on traffic flow*
5. *Narrow travel lanes and narrow or absent paved shoulders*
6. *Spread of invasive exotic plant species*
7. *Aesthetics: minimizing introduction of new man-made elements in the viewshed, including Caltrans' construction work and equipment as well as structures visible from the highway*
8. *Facilities for use, comfort, and safety of travelers: turnouts, vista points, pullouts, paved shoulders of adequate width for use by bicyclists*
9. *Additional roadside parking near Salmon Creek, Soda Spring, Cruickshank, North Prewitt, and Kirk Creek trailheads and Nathaniel Owings Memorial Redwood Grove*

Segment 14: Carmel River Bridge to SR 156

1. *Intense local and regional traffic in addition to through traffic bound for Big Sur Coast and recreational attractions*
2. *Long waits for turns at intersections with Rio and Carmel Valley Roads*
3. *Stretches where visual character dominated by large trees and ornamental plantings*
4. *High rate of rear-end collisions along northbound uphill stretch north of Rio Road*
5. *High level of controversy between Carmel residents who oppose widening in existing alignment and preferred now-abandoned plans for Hatton Canyon Bypass and environmental community that opposed Bypass*

Segment 15: SR 156 to Monterey/Santa Cruz County Line

1. *Coastal Act policies supporting widening or realignment only as last resort*
2. *Environmentally sensitive habitat areas*
3. *Evaluate proposed improved intersections with Route 1 to avoid growth inducement/traffic inducement*
4. *Preference for addressing congestion with alternative modes of transportation*

5. *Effects of widening on endangered Santa Cruz long-toed salamander: habitat fragmentation, infringement on breeding sites and increased road kill*
6. *Provision of recreational support facilities such as parking and access roads from highway*
7. *Areas to accommodate bicycle users/completion of trail system*
8. *Rural character of highway: minimizing urban-type improvements*
9. *Congestion/turning movements at Salinas Road*
10. *Option to reroute Route 1 to railroad alignment*
11. *Option to improve G-12 as an alternate route for some trips*
12. *Caltrain access at Pajaro*
13. *Upgrade other routes to carry traffic from US 101 to Santa Cruz while avoiding Segment 15*
14. *Evaluate entire system of state and local roads between Route 1 and US 101 in Castroville/Pajaro/Watsonville area to avoid impacts to rural character of coastal area*
15. *Heavy congestion during major events/festivals in Monterey or Santa Cruz Counties*
16. *Segment congestion: a two-county issue*

SANTA CRUZ COUNTY

Note: A public meeting held October 22, 2003 at Watsonville High School in the City of Watsonville generated comments regarding a wide range of regional transportation issues on State Route 1 and nearby facilities in Santa Cruz and Monterey Counties.

Segment 16: Monterey/Santa Cruz County Line to Larkin Valley Road

1. *Segment congestion: a two-county issue*
2. *Heavy traffic at Riverside Road (SR 129) interchange since opening of school west of Route 1*
3. *Environmental sensitivity*
4. *Noise and air quality impacts to humans and wildlife if highway widened*
5. *Need for highway access at Green Valley Road*
6. *Freeway ramp congestion spilling over to local road system*
7. *Purchase of parallel branch rail line for modal alternative to highway travel*
8. *Caltrain access at Pajaro*

Segment 17: Larkin Valley Road to SR 17

1. *Widening to 6 lanes needed*
2. *Need for forward signing to indicate incident/congestion in vicinity of Freedom Boulevard interchange*
3. *Freeway ramp congestion spilling over to local road system*
4. *Access to Cabrillo College*
5. *Purchase of parallel branch rail line for modal alternative to highway travel*
6. *Plan for intermodal facilities for access to future parallel passenger rail by bicycle, bus, automobile*
7. *Heavy congestion from SR 1/SR 17 interchange and south for several miles*
8. *Large trucks on the highway between 6-9:00 a.m. and between 5-7:00 p.m. Reroute trucks or provide separate truck lane*

9. *Consider a handicapped-accessible PRT system for cost, efficiency, and congestion relief*
10. *Increased noise levels and emissions if highway widened*
11. *Potential impacts to Santa Cruz long-toed salamander if highway widened*

Segment 18: SR 17 to Santa Cruz North Urban Limit

1. *UCSC-related traffic*
2. *Mix of local, regional and interregional (tourist) traffic*
3. *Non-standard intersections and sharp turns on route*
4. *Uncontrolled access: multiple residential driveways and parking lot entries to strip commercial and office uses*

Segment 19: Santa Cruz North Urban Limit to Santa Cruz/San Mateo County Line

1. *Non-standard lane and shoulder widths*
2. *Improve and manage public access to coastal areas for recreational use (adequate parking)*
3. *Need for channelization for turns*
4. *Inadequate shoulder widths for bicycles*

APPENDIX D: Programmed and Planned Projects

MAJOR PROJECTS FOR STATE ROUTE 1
(STIP Projects and Additional Constrained and Unconstrained Projects Shown in RTPs)

County	Location (Postmiles)	EA	Project
Programmed Projects			
Mon	72.3/75.2	101-0000-0236	Construct additional climbing lane; modify intersection; enhance turn movements (oversight)
Mon	100.4/R101.5	0032G	Widen to four-lane freeway and construct new interchange at Salinas Road
SCr	2.3/2.5	44130K	Reconstruct Harkins Slough interchange
SCr	15.8/17.6	129101	Construct northbound and southbound merge lanes
Additional Financially Constrained Projects (shown in Regional Transportation Plans)			
SLO	Rural South County		Widen to provide 8-foot shoulders
SLO	Halcyon (north)		Construct new bridge; realign intersection to eliminate offset
SLO	San Luis Obispo		Evaluate improving operations and/or widening Santa Rosa
SLO	SR 41		Modify intersection
SLO	Harmony Grade		Construct passing lanes and turn channelization as warranted
SLO	Cambria Drive		Install traffic signal
SLO	Piedras Blancas		Realign highway
Mon	Various		ITS: CMS, CCTV cameras, HAR, ramp metering, loop detectors
Mon	Big Sur: Pitkin's Curve		Realign curve
Mon	Sand City Corridor		Widen highway from Fremont Avenue to Canyon Del Rey or beyond
SCr	Soquel to Morrissey		Construct Auxiliary Lanes
SCr	Soquel to Morrissey		Environmental Review for Widening/HOV lanes
SCr	Park-Bay, 41st -Soquel, Soquel-Morrissey, State Park-Park		Construct auxiliary lanes
SCr	San Lorenzo Bridge		Widen bridge
SCr	North Coast		Construct paved pull out and parking area and left-turn channelization, widen shoulders

MAJOR PROJECTS FOR STATE ROUTE 1, cont'd

Additional Projects without Funding (shown in Regional Transportation Plans)		
SB	Clark Avenue to SR 166	Widen travel lanes and shoulders
SB	Santa Maria River (Guadalupe)	Widen bridge; provide Class II bike lanes
Mon	Carmel River Bridge to Carpenter Street	Construct two additional lanes with at-grade or grade-separated interchange improvements
Mon	SR 68 *west*	Improve interchange
Mon	Seaside: Monterey Road	Construct new interchange between Fremont and Lightfighter Drive
Mon	Imjin Parkway	Construct new interchange
Mon	Reservation Road	Install new traffic signals at ramps
Mon	SR 156	Construct ramp connectors at interchange
Mon	Espinosa Road	Construct new interchange with to-be-constructed Espinosa Expressway (on new alignment)
Mon	Merritt Street-Artichoke Avenue	Improve interchange/intersection – Phases I and II
Mon	Moss Landing	Widen to four lanes
SCr	Park-Bay, 41st -Soquel, Soquel-Morrissey, State Park-Park	Construct auxiliary lanes
SCr	Various interchanges	Modify interchange ramps to accommodate future widening alternatives